

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In The Matter of the Requests of)
)
HAWAIIAN ELECTRIC COMPANY, INC.,) DOCKET NO. 2017-0352
HAWAII ELECTRIC LIGHT COMPANY, INC.,)
AND MAUI ELECTRIC COMPANY, LIMITED)
)
To Instituting a Proceeding Relating to a)
Competitive Bidding Process to Acquire)
Dispatchable and Renewable Generation)
_____)

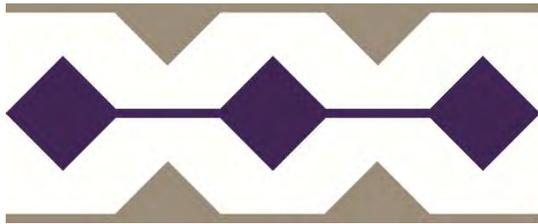
**Hawaiian Electric Companies’
Proposed Final Stage 2
Renewable and Grid Services RFPs**

Book 7 of 7

Filed August 22, 2019

EXHIBIT 4

Final Delivery of Grid Services via Customer-sited
Distributed Energy Resources RFP, including the model
Grid Services Purchase Agreement (“GSPA”)



Hawaiian Electric

REQUEST FOR PROPOSALS

FOR

DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED DISTRIBUTED ENERGY RESOURCES

ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

This Request for Proposals (“RFP”) is a DRAFT only. Hawaiian Electric Company, Inc. (“Hawaiian Electric” or “Company”) will employ a competitive bidding process to select variable renewable dispatchable generation and energy storage projects consistent with the State of Hawai‘i Public Utilities Commission’s (“PUC”) Competitive Bidding Framework. Under the Competitive Bidding Framework, Hawaiian Electric will file the initial draft RFP with the (PUC). Then, Hawaiian Electric will seek input from prospective Proposers and other stakeholders through a Technical Conference as described in the draft RFP and will modify the draft RFP to the extent feasible to address input received in order to foster a robust competitive process. The proposed final RFP will be submitted to the PUC for approval and is subject to further revision based upon direction received from the PUC. After approval by the PUC, Hawaiian Electric will issue the final RFP.

Contents

CHAPTER 1: INTRODUCTION AND GENERAL INFORMATION	1
1.1 Authority and Purpose of the Request for Proposals	2
1.2 Background: Grid Services	3
1.3 Aggregator Model	3
1.4 Scope of the RFP	4
1.5 Competitive Bidding Framework	6
1.6 Role of the Independent Observer	6
1.7 Communications Between the Company and Proposers – Procedures Manual	7
1.8 Company Contact for Proposals	8
1.9 Proposal Submission Requirements	8
1.10 Procedures for Affiliate Proposals	9
1.11 Dispute Resolution Process	9
1.12 No Protest or Appeal	10
1.13 Modification or Cancellation of the Solicitation Process	10
CHAPTER 2: RESOURCE NEEDS AND REQUIREMENTS	10
2.1 Performance Standards	10
2.2 Interconnection to the Company System	11
CHAPTER 3: INSTRUCTIONS TO PROPOSERS	11
3.1 Schedule for the Proposal Process	11
3.2 Company RFP Website/Electronic Procurement Platform	11
3.3 Proposers Conference	12
3.4 Preparation of Proposals	12
3.5 Organization of the Proposal	13
3.6 Proposal Limitations	13

3.7	Proposal Compliance and Bases for Disqualification	13
3.8	Grid Service Purchase Agreement	14
3.9	Pricing Requirements	15
3.10	Plan Description	16
CHAPTER 4: EVALUATION PROCESS AND EVALUATION CRITERIA		17
4.1	Proposal Evaluation and Selection Process	17
4.2	Eligibility Requirements Assessment	20
4.3	Threshold Requirement Assessment	20
4.4	Detailed Evaluation – Process Overview	21
4.5	Specifics of the Detailed Evaluation Resulting in Selection of the Priority List	22
4.6	Selection of the Short List	25
4.7	Best and Final Offer (BAFO)	25
4.8	Final Evaluation for Grid Services Capacity	26
4.9	Final Evaluation for Grid Services FFR-2 (Oahu) and FFR-1 (Maui)	26
4.10	Final Evaluation for Grid Services FFR-1 for Oahu and Hawai'i Island	26
CHAPTER 5: POST EVALUATION PROCESS		28
5.1	Contract Negotiation Process	28
5.2	PUC Approval of GSPA	28

List of Appendices

Appendix A	Definitions
Appendix B	Proposer's Response Package
Appendix C	Code of Conduct Procedures Manual
Appendix D	PowerAdvocate User Information
Appendix E	MNDA
Appendix F	Code of Conduct
Appendix G	Contract Capability Bid Form
Appendix H	Pricing Worksheet
Appendix I	Requirements Summary Worksheet
Appendix J	Questionnaire Summary Worksheet
Appendix K	Information Assurance Worksheet
Appendix L	Model GSPA
Appendix M	Levelized Grid Service Price Worksheet
Appendix N	Supplemental Review Process
Appendix O	Aggregator Handbook

Chapter 1: Introduction and General Information

Hawaiian Electric Company, Inc. (“Hawaiian Electric” or the “Company”) seeks proposals for the delivery of qualified grid services from customer-sited distributed energy resources for the Hawaiian Electric, Maui Electric and Hawaii electric Light systems in accordance with this Request for Proposals (“RFP”). The total amount of grid services being solicited in this RFP is presented in the form of cumulative annual targets in the table below:

Table 1-1 Hawaiian Electric Company’s Grid Services Needs by System (MW)¹

Year	Oahu FFR-1	Oahu FFR-2	Oahu Capacity	Maui FFR-1	Maui Capacity	Hawai’i Island FFR-1	Hawai’i Island Capacity
2020							4.0MW
2021	50.0MW	29.0MW	103.0MW	8.0MW	16.0MW	18.0MW	4.0MW
2022	50.0MW	39.0MW	119.0MW	8.0MW	21.0MW	18.0MW	4.0MW
2023	50.0MW	39.0MW	119.0MW	8.0MW	21.0 MW	18.0MW	4.0MW
2024	50.0MW	39.0MW	119.0MW	8.0MW	21.0 MW	18.0MW	4.0MW

The Company seeks aggregated grid services from customer-sited distributed energy resources in this RFP. The Company intends to contract for grid services through this RFP using its Grid Services Purchase Agreement (“GSPA”). The GSPA is attached as Appendix L to this RFP.

Each successful Proposer will provide the specified, aggregated grid services from customer-sited assets to the Company pursuant to the terms of GSPA to be negotiated between the Company and Proposer, which will also be subject to PUC review and approval. The Company or its affiliate may submit a Proposal in response to this RFP.

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4 of this RFP. The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Projects. The amount of grid services that the Company may acquire from this RFP depends on, among other things, the quality of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company’s forecasts; and changes to regulatory or legal requirements.

All requirements necessary to submit a Proposal or Proposals are provided in this RFP. A description of the technical requirements for Proposers is included in Chapter 2 of this RFP, in the Proposer’s Response Package attached as Appendix B to this RFP, in the GSPA attached as Appendix L to this RFP, and in the Electronic Procurement Platform described in Section 3.2 of this RFP.

All capitalized terms used in this RFP shall have the meaning set forth in the Glossary of defined terms attached as Appendix A to this RFP. Capitalized terms that are not included in Appendix A shall have the meaning ascribed in this RFP.

¹ These totals are cumulative; Proposers are permitted to propose enablement of incremental services through the end of December 31, 2022. The contract term will be a 5-year term including the ramping enablement years.

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. 36187 issued on February 27, 2019 in Docket No. 2017-0352 as part of a procurement process established by the State of Hawai‘i Public Utility Commission (“PUC”).
- 1.1.2 This RFP is subject to Decision and Order (“D&O”) No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai‘i), which sets forth the PUC’s Framework for Competitive Bidding (“Framework” or “Competitive Bidding Framework”).
- 1.1.3 This RFP also follows the guidance from the Public Utilities Commission of the State of Hawaii (“Commission”) in Decision and Order No. 35238 in Docket No. 2015-0412 which approved the Companies Revised Integrated Demand Response Program Portfolio submitted to the commission in the same docket.
- 1.1.4 The Company hereby invite qualified vendors (referred to herein as “Proposers”) to provide proposals to deliver grid services (as defined herein) utilizing customer-sited resources. It is acceptable for a Proposer to provide a proposal to a single operating system.
- 1.1.5 ***The purpose of this RFP is to procure grid services provided from customer-sited resources.*** The Company considers grid services to include capacity and ancillary services, specifically, fast frequency response. This RFP represents an opportunity for both the Proposer and the Company to continue to develop an innovative portfolio of customer-sited resources that meet a variety of grid requirements, while providing additional choices and benefits for the Company’s customers. This RFP is soliciting innovative proposals for the provision of fully functional resources to deliver grid services. Delivery of a fully-functional grid service includes the implementation and ongoing maintenance of resources to provide the complete set of services specified in section 1.4.1 of this RFP.
- 1.1.6 ***The resources that provide the grid services requested in this RFP must be electrically interconnected on the customer side of the revenue meter.*** Proposers may submit proposals that employ controllable customer loads, energy storage devices, and/or non-fossil generation amongst other technologies. Proposed resources must also meet the other technical and business requirements set forth in this RFP and the Company’s Grid Service Tariffs. Resources proposed in response to this RFP that are interconnected on the customer’s side of the meter and that are intended to be operated in parallel with the Company’s system (e.g. generation and energy storage systems) at any time, must meet the interconnection requirements included in the Company’s Rule 14 Section H, in this document, or otherwise appropriate interconnection tariff applicable to such resources.² Any proposals that rely on resources that are not able to meet the forgoing requirements in this paragraph will not be considered at this time.

² See Hawaiian Electric Rule 14H:
<http://www.hawaiianelectric.com/vcmcontent/FileScan/PDF/EnergyServices/Tarrifs/HECO/HECORules14.pdf>

1.2 Background: Grid Services

On July 28, 2014 the Hawaiian Electric Companies submitted their Integrated Demand Response Portfolio Plan (IDRPP) in compliance with the Decision and Order issued by the Hawai'i Public Utilities Commission (Commission). Subsequent to filing the IDRPP, the Commission indicated that the system needs as defined in the IDRPP should provide more substantive support, and clearly align with other planning activities, operations, and filings within the Companies.

Much of the Companies' work undertaken since the initial IDRPP has aimed to establish the value of system needs, which in turn will help to inform the design of a new demand response (DR) portfolio. In 2015, the Companies defined and quantified the system needs as Grid Service Requirements. This refinement has resulted in consistent definitions of system needs and enabled the Companies to develop a methodology for quantifying the requirements to a greater degree of satisfaction from the perspective of the Commission.

The Grid Service Requirements serve as the foundational need for services that could be provided by DR programs, and other resources. The Grid Service Requirements defined are an essential input into the avoided cost modeling effort to value grid resources, and are crucial in the development of future DR portfolio offerings. The Companies recognize that system needs evolve over time due to a multitude of factors that are all intricately interrelated, thus making the process to define, quantify and support such needs an iterative one.

The requirements for grid services to be supplied by Aggregators for each of the systems were vetted and discussed with Generation Planning, Transmission & Distribution Planning as well as System Operators across all islands. The requirements include, as appropriate, quantity, delivery and response requirements, and duration, as well as the rationale for each requirement.

The Companies are undertaking the next phase of increased renewable portfolio with the Integrated Grid Planning (IGP), wherein the Companies will re-assess the grid service and its value going forward. In the future, Grid Service solicited and procured from customer-sited assets will become part of an anticipated All-resources RFP process as an outcome of the Companies' Integrated Grid Planning (IGP) effort. The initial procurement is scheduled for 2020.

1.3 Aggregator Model

1.3.1 This RFP seeks proposals based on the following Proposer, or aggregator, business model:

a. The Proposer is required to guarantee (with appropriate financial backing) the delivery of specified quantities of grid services obtained from demand-side resources. The Proposer shall have a direct contractual relationship with customers to engage the customer for the use of customer-sited resources. The Proposer will be responsible for ensuring the contract with the customer is valid under Hawaii and U.S. laws and meets any applicable consumer protection regulations. In turn, the Proposer will have a direct contractual relationship with the Company to deliver the grid services in the quantities and requirements specified in this chapter of the RFP. The Company will directly deliver incentives to participants on their utility bills. Accordingly, the Proposer's marketing to

customers will refer to the Proposer as “a Hawaiian Electric Company authorized aggregator, or demand-side provider.”

b. The Company will accept bids from consortiums or multiple parties in partnership. Proposals from consortiums or multiple parties must clearly identify the relationship (actual or proposed) among the parties for the purposes of a transaction with the Company, including, the party (or parties) with whom the Company will have the legally binding contractual relationship.

c. The Company requires that responsive proposals be submitted consistent with the requirements set forth herein.

1.4 Scope of the RFP

The Company’s system sizes are small, relative to many U.S. mainland systems and further, the different systems are not interconnected with each other, or any other third party electric system. As in any system, capacity and ancillary services are required to ensure an adequacy of supply and acceptable reliability of the power system. Due to the unique considerations of small island systems, the ancillary service requirements differ from larger interconnections.

The small size of the Company’s systems results in a greater sensitivity to imbalance between power supply and demand. Any generation and demand imbalances within the systems will result in significant frequency deviations that cannot be supported by neighboring interconnections. The sensitivity to imbalance is described by the frequency bias (MW/0.1 Hz). The frequency biases of the Hawaiian Islands are much smaller than on mainland systems with significantly higher rates of change of frequency. For example, in the Hawaii Electric Light system with a typical daytime load of 150 MW, the loss of the largest generating station (60 MW) represents the loss of generation equivalent to 40% of the load. In addition to the small system size increasing amounts of variable generation from wind and distributed solar have reduced online responsive generation and increasing the need for frequency response and regulation. The variability resulting from solar and wind resources requires an increase in the available contingency reserve, responsive in the milliseconds time frame, and also requires a large amount of supplemental frequency control from regulating reserves. Wind and solar ramp events also lead to a depletion of reserves and require replacement reserves to restore load following faults and contingencies. Therefore, the technical requirements for Proposer proposals to provide grid services must meet technical and operational specifications that are dictated by the unique operational requirements of the Company’s systems.

Over time, the needs of the Company’s systems will change, particularly as greater penetrations of variable renewable resources are reached in the systems. This means that the incremental need for specific grid services may change over time or that different response rates or requirements may be required. The company reserves the right to alter requirements as necessary to provide the grid services required for acceptable system reliability for future system configurations.

1.4.1 Grid Service Requirements

The Company has identified specific grid services requirements by system. The table below summarizes the grid services. Detailed specifications and requirements are identified in Exhibit A of the GSPA, which can be found in Appendix L. The quantity, or Capability, of each grid service required for this RFP is provided in Table 1-1 previously in this chapter. This should be used as a guide for Proposers in making proposals to deliver specific grid services.

Table 1-2 Company’s Grid Services Needs from Customer-sited Resources

Grid Service(s) Requested in this RFP	System Need
Capacity	Capacity to meet system peak, including load shift from high demand peak periods to low demand periods.
Fast Frequency Response (FFR)	Maintain system security during contingency events (Two different types FFR-1 and FFR-2 defined in Exhibit A.)

1.4.2 System & Data Integration

The Company specifies system integration data exchange requirements in both Exhibit G of the GSPA as well as the *Aggregator Handbook*, which can be found in Appendix O of this RFP.

1.4.3 Forecasting & Availability Delivery Requirements

Proposer obligations with respect to the type and frequency of service availability forecasting are presented in Exhibit F of the GSPA.

1.4.4 The Company does not have a predetermined preference for a particular technology for the delivery of grid services.

1.4.5 Proposers may offer to deliver any of the grid services on any of the islands where a need is depicted.

1.4.6 Each Proposal submitted in response to this RFP must represent a Plan that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Plan or Project submitted in response to this RFP or any other RFP.

1.4.7 Proposals submitted in response to this RFP must be located on the Islands of O‘ahu, Maui and/or Hawai‘i island and must propose an enablement schedule that shows the completion of enablement by Commercial Operations Date (“GCOD”) before December 31, 2022.

1.4.8 While this RFP procures the management of grid services for up to 5 years, and the enablement of incremental Contract Capability through the first 3 years of the contract period, Proposers are not obligated to commit to enablement for the full three year incremental enablement period.

1.4.9 Plans must offer at least 500kW of capability for each service bid.

1.4.9.1 For FFR on Hawai'i Island, Proposers must bid a minimum of 3MW of FFR.

1.4.10 If selected, Proposers will be responsible for all costs throughout the term of the GSPA, including but not limited to Plan execution, system integration testing, completion of an Interconnection Requirements Study ("IRS"), permitting, financing, and operations and maintenance.

1.4.11 Proposers shall pursue all available applicable federal and state tax credits, and Proposal pricing must be set to incorporate the benefit of such tax credits or to pass the benefit of the tax credits to the Company's customers.

1.5 Competitive Bidding Framework

Consistent with the Framework, this RFP outlines the Company's requirements in relation to the resources being solicited and the procedures for conducting the RFP process. It also includes information and instructions to prospective Proposers participating in and responding to this RFP.

1.6 Role of the Independent Observer

1.6.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of the RFP process will be subject to the Independent Observer's oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that it is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer all decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.

1.6.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:

- Monitor all steps in the competitive bidding process
- Monitor communications (and communications protocols) with Proposers
- Monitor adherence to the Company's Code of Conduct
- Submit comments and recommendations, if any, to the PUC concerning the RFP
- Review the utility's Proposal evaluation methodology, models, criteria, and assumptions
- Review the utility's evaluation of Proposals
- Advise the utility on its decision-making
- Participate in dispute resolution as set forth in Section 1.10 of this RFP
- Monitor contract negotiations with Proposers
- Report to the PUC on monitoring results during each stage of the competitive bidding process
- Provide an overall assessment of whether the goals of the RFP were achieved

1.6.3 The Independent Observer for this RFP is **Bates White, LLC**.

1.7 Communications Between the Company and Proposers – Procedures Manual

1.7.1 Communications and other procedures under this RFP are governed by the “Procedures Manual,” developed by the Company as required by the Framework, and attached as Appendix C to this RFP.

1.7.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company’s website, Electronic Procurement Platform and/or electronic mail (“Email”) through the address specified in Section 1.7 of this RFP (the “RFP Email Address”). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company website, or sent through either email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen days before the Proposals Due date (RFP Schedule in Section 3.1 of this RFP). The Company will endeavor to respond to all questions no later than five days before the Proposals Due date.

1.7.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).

1.7.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E of this RFP.

1.7.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.8 Company Contact for Proposals

The primary contact for this RFP is:

Yoh Kawanami
Grid Services Contract Manager
Hawaiian Electric Company, Inc.
American Savings Bank Building, Suite 1050
1001 Bishop Street
Honolulu, Hawai'i 96813

RFP Email Address: response@hawaiianelectric.com

1.9 Proposal Submission Requirements

- 1.9.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.
- 1.9.2 Detailed requirements regarding the form, submission, organization and information for the Proposal are set forth in Chapter 3 of this RFP and Appendix B to this RFP.
- 1.9.3 In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other person or entity. The Proposer shall agree to a Certificate of Non-Collusion acknowledgement provided on the Electronic Procurement Platform for each Proposal.

In participating in this RFP, Proposer further agrees that to mitigate the potential appearance of impropriety, and with the intent of maximizing benefits to the Company's customers through this RFP, unaffiliated Proposers will not be permitted to use the same counsel or other representative(s) in negotiations with the Company either during or after the RFP evaluation and selection process. Furthermore, in executing the NDA provided as Appendix E to this RFP, the Proposer agrees on behalf of its Representatives that Company's confidential negotiating positions will not be shared with other Proposers.

- 1.9.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai'i Standard Time (HST) on the Proposals Due date shown in the RFP Schedule in Section 3.1 of this RFP. No hard copies of the Proposals will be accepted. It is the Proposer's responsibility to ensure that its complete and accurate information has been submitted on time and within the instructions of this RFP. Any errors or typos identified by the Proposer after the Proposals Due date has passed may jeopardize further consideration and success of the Proposal. The Electronic Procurement Platform will cease accepting any submission of late information for this RFP after the Proposals Due date.

1.10 Procedures for Affiliate Proposals

The Competitive Bidding Framework allows affiliates of the Company to submit Proposals to RFPs issued by the Company. All Affiliate Proposals are subject to Appendix C Code of Conduct Procedures Manual.

The Independent Observer will assist the PUC in helping to ensure that the established procedures of the Code of Conduct Procedures Manual and the terms of the Code of Conduct are followed and administered fairly such that no preferential treatment or preferential access to information will be provided to an affiliate by the Evaluation Team.

1.11 Dispute Resolution Process

- 1.11.1 If disputes arise under the RFP, the provisions of Section 1.10 of this RFP and the dispute resolution process established in the Framework will control. See Part V of the Framework.
- 1.11.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer (“Initial Meeting”). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues coming before the PUC.
- 1.11.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential mediation in Honolulu, Hawai‘i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. (“DPR”) (or its successor) or, in its absence, the American Arbitration Association then in effect (“Mediation”). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney’s fees.
- 1.11.4 If settlement of the dispute is not reached within sixty (60) days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any unresolved disputes to Mediation, then as provided in the Framework, the Proposer may seek a determination of the issue by the PUC.
- 1.11.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the issue within thirty (30) days, as

described in Parts III.B.8 and V of the Framework.³ There will be no right to hearing or appeal from this informal expedited dispute resolution process.

- 1.11.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 of this RFP (e.g. arbitration or court proceeding), then such Proposer shall be responsible for any and all attorney's fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.12 No Protest or Appeal

Subject to Section 1.11 of this RFP, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

By submitting a Proposal in response to the RFP, the Proposer expressly agrees to the terms and conditions set forth therein.

1.13 Modification or Cancellation of the Solicitation Process

- 1.13.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final award, in consultation with the Independent Observer, postpone, withdraw and/or cancel any requirement, term or condition of this RFP, including deferral of the award of any contract, and/or cancellation of the award all together, all of which will be without any liability to the Company.
- 1.13.2 The Company may modify this RFP subject to requirements of the Framework, whereby the modified RFP will be reviewed by the Independent Observer and submitted to the PUC thirty (30) Days prior to its issuance, unless the PUC directs otherwise. See Framework Part IV.B.10. The Company will follow the same procedure with regard to any potential postponement, withdrawal or cancellation of the RFP or any portion thereof.

Chapter 2: Resource Needs and Requirements

2.1 Performance Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the GSPA. This RFP and the GSPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP.

³ The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework's process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework's dispute resolution process applies to "Bidders" and there are no "Bidders" at this stage in the RFP process.

2.2 Interconnection to the Company System

- 2.2.1 All customer assets that are otherwise subject to interconnection standards as articulated in Rule 14H remain subject to those standards as a precondition for inclusion in a grid services offering.
- 2.2.2 If an interconnected system, in order to achieve anticipated and committed grid services, would be expected to export power in excess of pre-approved export limits, the resource would be subject to a Supplemental Review as described in Appendix N.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 3-1 sets forth the schedule for the proposal process (the “RFP Schedule”). The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposals Due date will be posted to the RFP website. Changes to the RFP Schedule after the Proposals Due date will be communicated via email or via the Electronic Procurement Platform to the Proposers.

Table 3-1 RFP Schedule

(1) RFP is Issued	August 22, 2019
(2) Proposers Conference Webinar	September 5, 2019
(3) Proposals Due	October 31, 2019
(4) Selection of Short List	December 12, 2019
(5) BAFOs Due	December 19, 2019
(6) Selection of Final Award Group	January 9, 2020
(7) Pass Award Information to Planning	January 9, 2020
(8) Contract Negotiations Start	January 9, 2020
(9) Contract Negotiations Concluded	July 9, 2020

3.2 Company RFP Website/Electronic Procurement Platform

- 3.2.1 The Company has established a website for general information to share with potential Proposers. The website is located at the following link:

<https://www.hawaiianelectric.com/products-and-services/demand-response/rfp-for-grid-services-from-customer-sited-distributed-energy-resources>

The Company will provide general notices, updates, schedules and other information on the RFP website throughout the process. Proposers should check the website frequently to stay abreast of any new developments throughout the RFP process. This website will also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

“Sourcing Intelligence” developed by Power Advocate is the Electronic Procurement Platform that the Company has licensed and will utilize for this RFP. Proposers who do not already have an existing account with PowerAdvocate and who intend to submit a Proposal for this RFP will need to register as a “Supplier” with PowerAdvocate.

- 3.2.2 There are no license fees, costs, or usage fees to Proposers for the use of the Electronic Procurement Platform.

See [Appendix D](#) to this RFP for user information and screenshots on PowerAdvocate’s Sourcing Intelligence procurement platform.

3.3 Proposers Conference

The Company will hold a webinar (“Proposers Conference Webinar”) in accordance with the Competitive Bidding Framework for prospective Proposers and other stakeholders to discuss the provisions and requirements of this RFP. Following webinar, stakeholders may submit questions to help them better understand the Companies’ proposed competitive bidding process and draft documents. General responses will be posted to the RFP website.

Prospective Proposers may submit written questions regarding the RFP to the RFP Email Address set forth in [Section 1.7](#). The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website’s Q&A section prior to submission of your Proposal to ensure all guidance provided by the Company is read.

3.4 Preparation of Proposals

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer’s Proposal, and Proposer’s anticipated performance under the GSPA. It is the Proposer’s responsibility to ensure they understand all requirements of the RFP, to seek clarification if the RFP’s requirement or Company’s request is not clear, and to ask for any confirmation of receipt of submission of information.

- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on submitted information (e.g., Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP).

- 3.4.3 Each Proposer shall be solely responsible for and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and

(5) investigation and research relating to its Proposal and this RFP. Any such costs associated with the same will not be reimbursed by the Company to any Proposer, including the selected Proposer(s).

3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent⁴ of the Proposer.

3.5 Organization of the Proposal

The Proposal must be organized as specified in Appendix B to this RFP.

3.6 Proposal Limitations

Proposers expressly acknowledge that Proposals are submitted subject to the following limitations:

The RFP does not commit or require the Company to award a contract, pay any costs incurred by a Proposer in the preparation of a Proposal, or procure or contract for products or services of any kind whatsoever. The Company reserves the right, in consultation with the Independent Observer, to accept or reject, in whole or in part, any or all Proposals submitted in response to this RFP, to negotiate with any or all Proposers eligible to be selected for award, or to withdraw or modify this RFP in whole or in part at any time.

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.
- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposals Due date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the NDA.

3.7 Proposal Compliance and Bases for Disqualification

Proposers may be deemed non-responsive and/or Proposals may not be considered for reasons including, but not limited to, the following:

⁴ Proposer's officer or agent must be authorized to sign the Proposal. Such authorization must be in writing and may be granted via Proposer's organizational documents (i.e., Articles of Incorporation, Articles of Organization, By-laws, etc.), resolution, or similar documentation.

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.6.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to the Company's request for additional information to clarify the contents of its Proposal.
- The Proposal contains misrepresentations.

3.8 Grid Service Purchase Agreement

- 3.8.1 The Grid Services Purchase Agreement for proposals selected under this RFP will be in the form of the Company's GSPA, attached as Appendix L to this RFP.
- 3.8.2 If selected, any affiliate Proposers will be required to enter into the GSPA with the Company.
- 3.8.3 In general, under the GSPA, payment to the Supplier contains two parts: Enablement Fees to apply towards fixed costs associated with hardware and installation and Management Fees (\$/MW component) to cover operations and maintenance costs. In return, the Supplier shall guarantee minimum performance and availability metrics to ensure that the Services are available for the Company's dispatch.
- 3.8.4 Proposers may propose modifications to the GSPA but are encouraged to accept the GSPA in order to expedite the overall RFP process and potential GSPA negotiations. As a component of their Proposals, Proposers who elect to propose modifications shall provide a MS Word red-line version of the GSPA identifying specific modifications to the GSPA language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification. General comments such as "parties to discuss" are unacceptable and will not be considered a proposed revision. Modifications will be evaluated as a non-price evaluation criteria as further described in Section 4.4.2 of this RFP. In order to facilitate this process, the Company will make available electronic versions of the GSPA. Any proposed modifications to the GSPA will be subject to negotiation between the Company and the Final Award Group. Certain provisions of the GSPA, such as the calculation of availability and payment terms, may be administratively burdensome to endeavor if they differ between selected Projects. Therefore, the

Company will endeavor to negotiate similar provisions across the Final Award Group for such provisions.

- 3.8.5 Proposals that do not include specific proposed revisions to the attached GSPA will be deemed to have accepted its terms and these provisions cannot be opened up during the contract finalization stage. In other words, only provisions and terms redlined as part of the submitted proposals will be considered eligible for negotiations.

3.9 Pricing Requirements

- 3.9.1 Proposers must submit pricing for the proposed delivery of grid services.
- 3.9.2 Pricing cannot be specified as contingent upon other factors (e.g., changes to State or federal tax policy or receiving all investment tax credits assumed).
- 3.9.3 Escalations in pricing over the term of the GSPA may not be proposed.
- 3.9.4 If bidding to FFR-1 grid service as part of a bundled grid services proposal, Proposer's must provide both the bundled grid service pricing as well as discrete unbundled grid service pricing for FFR-1 only.
- 3.9.5 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission).
- 3.9.6 Proposers may specify the desire to rely on the Company to provide marketing/recruitment support; however, it is anticipated that in doing so, the Supplier would then seek a lower assignment of Enablement and/or Management Fees to off-set the request for direct Company marketing support.
- 3.9.7 The Proposer's Response Package must include the following pricing components for each Proposal:

For Aggregator or affiliate proposals:

- **Management Fee:** Represented as a \$/kW/service/month amount, this fee reflects the Proposer's effective bid for managing each kW of the services being offered. This fee should ramp as the collective enablement ramps and the Proposer is managing more kW per service.
- **Enablement Fee:** The Enablement Fee represents a \$/capability (kW) to accommodate – all or in part - the enablement of customer assets for delivering grid services. This fee allocation is set at a maximum of ten (10) times the monthly Management fee on a \$ per kW, per services basis. Bids containing a price for enablement that exceed the specified limit will be disqualified.

- **Incentive Adder:** As set forth on Exhibit K of the GSPA, the Companies have published minimum incentives on a \$ per kW, per service, per island basis for each of the services to be procured. The Proposer may opt to offer additional incentives to participating customers, which will in turn be paid by the Company via the customer bill. The Incentive Adder will be added to the Proposer's total contract costs in the determination cost effective bids.
- **Levelized Grid Service Price:** As part of the pricing exercise, Proposers must present in average annual \$/kW for each service per each island per bid. The calculation for this dollar amount is presented in Appendix M.

3.10 Plan Description

3.10.1 Proposers must provide sufficient information on the scope and description of the proposed grid services delivery commitment. To this end, Proposer must furnish the following as described and/or provided as part of Attachment B:

- **Cover Letter** signed by a representative for the Proposer **authorizing the submission** of the Proposal
- **Proposal** document as per Appendix B Section 2.0
- Fully executed **Mutual Confidentiality and Non-Disclosure Agreement** (Appendix E to the RFP, may be downloaded from the "1. Download Documents" tab in the Electronic Procurement Platform)
- **Federal and State tax clearance certificates** for the Proposer (a Certificate of Vendor Compliance for the Proposer may be provided in lieu of **Federal and State tax clearance** certificates)
- **Contract Capability Bid** Form (Appendix G)
- **Pricing Sheet** (Appendix H)
- **Requirements Summary** Worksheet (Appendix I)
- **Questionnaire Summary** Worksheet (Appendix J)
- **Information Assurance** Worksheet (Appendix K)
- **Levelized Grid Service Price** Worksheet (Appendix M)
- **Supplier Code of Conduct** (if not conforming to Company's Code of Conduct)
- **Sample Participant Services Agreement**

3.10.2 Proposers must comply with the Standards of Conduct as depicted in Attachment C.

3.10.3 The Proposer agrees that no material changes or additions to the proposed grid services delivery plan from what is submitted with this Proposal will be made without the Proposer first having obtained prior written consent from the Company

3.11 Confidentiality

3.11.1 Each prospective Proposer must submit an executed NDA in the form attached as Appendix E to this RFP by the Proposals Due date specified in the RFP Schedule in

Section 3.1. The form of the NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed NDA will be considered. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should take care to designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking each and every page of a Proposal as confidential. The Company will make reasonable efforts to protect any such information that is clearly marked as confidential. The Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal, as set forth in the NDA.

- 3.11.2 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the Division of Consumer Advocacy, State of Hawai‘i Department of Commerce and Consumer Affairs, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.12 Credit Requirements Under the GSPA

- 3.12.1 Proposers with whom the Company concludes GSPA contract negotiations must post an irrevocable Standby Letter of Credit as set forth in Article 21 of the GSPA.
- 3.12.2 The letter of credit amount described in the GSPA is a minimum requirement. Proposers shall not propose an amount lower than that set forth in the GSPA.
- 3.12.3 Proposers may be required to fund a monetary escrow account in lieu of the required Source Code Escrow required under Article 5 of the GSPA.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

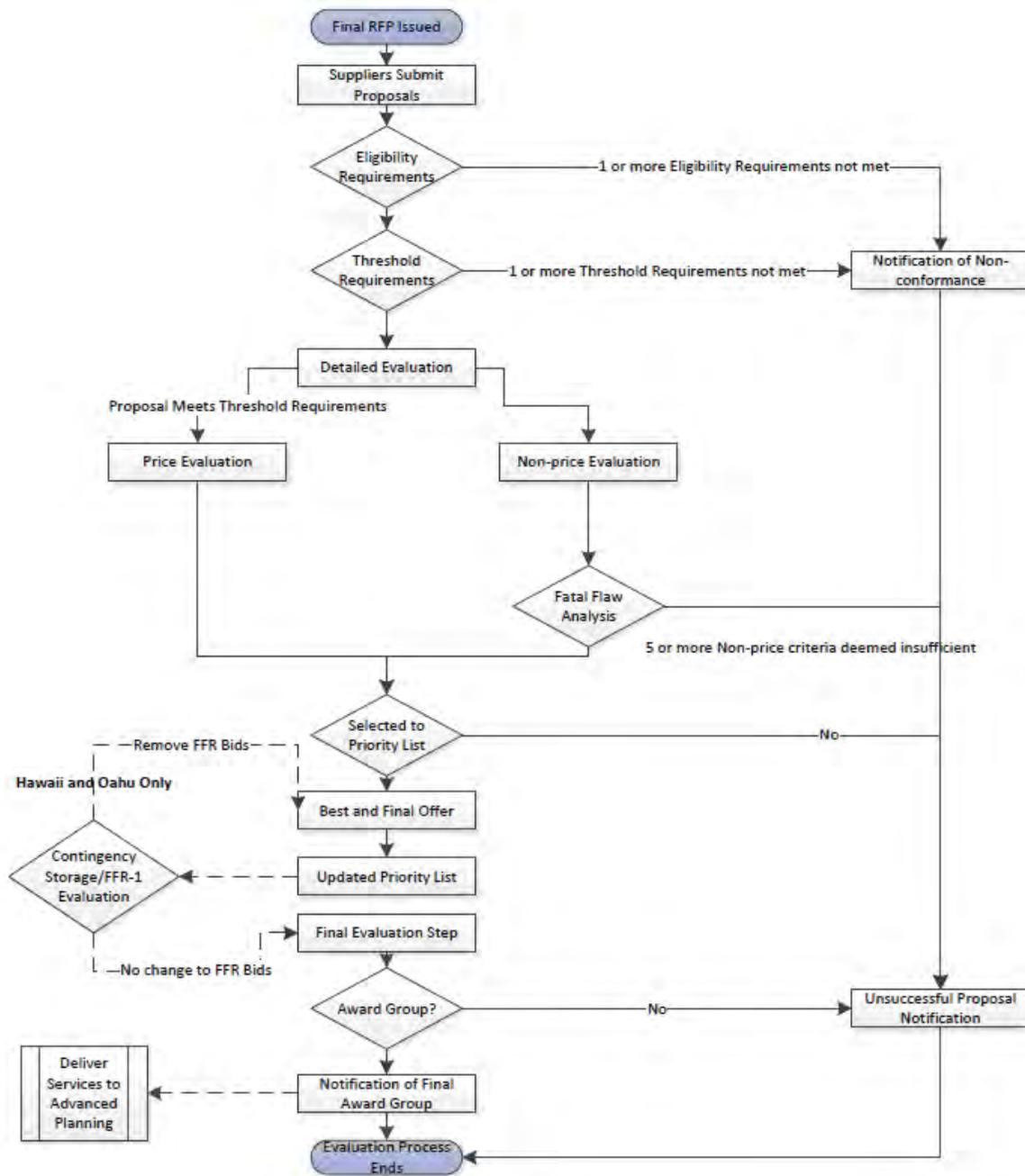
All Proposals will be subject to a consistent and defined review, evaluation and selection process. Once proposals are received, the Companies’ will employ a multi-step evaluation process including an initial Eligibility and Threshold assessment, a Detailed Evaluation process and selection of a Priority List, a Best and Final Offer opportunity, an evaluation step specific to the FFR-1 and Contingency Storage opportunity and a Final Awards Group selection process. Affiliate Proposals are treated identically to and held to the same requirements as all other Proposals. This Chapter provides a description of each step of the process, along with the

requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements⁵. If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation development of a Short List, followed by the opportunity for Short List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

⁵ As a general rule, if a Proposer does not include a requested document or may inadvertently exclude minor information or provides inconsistencies in its information, it may be given a chance to cure the inadequacies. If a Proposer does not include significant sections of its Proposal and providing the Proposer with the opportunity to cure is deemed a benefit to that Proposer at the expense of the competitors it could be classified as non-conforming and eliminated for failure to meet the eligibility requirements.

Figure 1 – Evaluation Workflow



After the Proposals are submitted, a Proposal Summary table will be created by the ECM of the RFP.

The Proposal summary will be shared with RFP Team members responsible for the evaluation of proposals (including the oversight team, Price Evaluation Team and Non-Price Evaluation Team), the IO, and Company’s Management. Non-Price Evaluation Team members will not receive the pricing information from proposals.

4.2 Eligibility Requirements Assessment

Once the Proposals are summarized, the Lead ECM will make the Proposal information available to the RFP team and the IO to begin the review of the proposals. The Lead ECM (with the assistance of select RFP team members) will review each Proposal and determine if the Proposal meets each of the Eligibility Requirements set forth in Table 1 below. If a Proposal is deemed not to meet the Eligibility Requirements, the reasons for such failure will be clearly identified and documented.

Table 1 – Eligibility Requirements

1. The Proposal must be received on time via the PowerAdvocate Platform.
2. The Proposal must not contain material omissions.
3. The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
4. The Proposers must fully execute the agreements or other documents required pursuant to this RFP.
5. The Proposer must provide Federal and State tax clearance certificates for the Proposer.
6. The Proposal must not be contingent upon changes to existing county, state or federal laws or regulations.
7. The proposed grid services delivery must be provided by customer assets located on the Islands of O‘ahu, Maui and Hawai‘i.
8. All committed enablement must be scheduled to be completed no later than December 31, 2025.

The Company, in coordination with the IO, will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet Eligibility Requirements.⁶ If it is deemed that a Proposer will have the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification of such failure.

4.3 Threshold Requirement Assessment

Proposals that meet the Eligibility Requirements will be reviewed against the Threshold Requirements. The Non-Price Evaluation Team, which includes subject matter experts in the various practice areas associated with the Threshold subject area, will review each proposal against the Threshold Requirements and determine if it passes or fails, and if it fails, document why it fails.

Any proposals that meet these eligibility requirements will then be reviewed to ensure that the Threshold Requirements have been met, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer.

The Threshold Requirements are presented in Table 2 below:

Table 2 - Threshold Requirements

<p>Performance Standards: The proposed Plan must be able to meet the performance attributes identified in the GSPA. Proposals should include sufficient documentation to support the stated claim that the grid service offering will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.</p>
<p>Proven Technology: This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.</p>
<p>Experience of the Proposer: The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer’s team must have experience in deliver of similar services in at least (1) project, including similar in size, scope, technology, and structure to the services being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information to demonstrate that the member of the project team whose experience is being identified to meet this threshold criterion has a firm commitment to provide services to the Proposer. The Proposer should articulate if and how entities with local ties will be supporting to deliver the proposed grid service.</p>
<p>Credit/Collateral Requirements: Proposers shall agree to post a Letter of Credit as described in <u>Section 3.12</u> of this RFP.</p>
<p>Financial Viability of Proposer: Proposers must provide a basic financial plan for the project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for the project financing (i.e. credit-worthy entities are interested in financing the project).</p>

The Company in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Threshold Requirements⁷.

If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification to cure. Proposals that have successfully met the Threshold Requirements will then enter a Detailed Evaluation process for Proposal evaluation.

4.4 Detailed Evaluation – Process Overview

Proposals that meet both the Eligibility and Threshold requirements will then be subject to a price and non-price assessment. Two teams have been established to undertake the bid

evaluation process: (1) the Price Evaluation Team and (2) Non-Price Evaluation Team. Each team will work independently and not divulge the scoring or ranking of Proposals to the other team. The Non-Price Evaluation Team will not be permitted to view any information relating to the pricing set forth in a Proposal. Any request for information from the Proposer's submission shall go through the ECM with IO oversight.

Members of the Non-Price Evaluation Team will undertake an initial analysis and evaluation of each Proposal and score the Proposals. Once all team members have conducted an initial evaluation of the Proposals, the Non-Price Evaluation Team will meet to review and assess the scoring and ranking of each Proposal. Team members will be asked to justify and document their evaluation results. After the initial review and assessment, team members will review and assess their evaluations to ensure they are consistent and unbiased.

Members of both the Price and Non-Price teams will then present their final evaluation results to the ECM, who will then compile the results and rank the proposals.

4.5 Specifics of the Detailed Evaluation Resulting in Selection of the Priority List

The results of the price and non-price analysis will be a relative ranking and scoring of all eligible proposals. Price-related criteria will account for fifty percent (50%) of the total score and non-price-related criteria will account for fifty percent (50%) of the total score.

The expected outcome of the Detailed Evaluation will be a prioritized list of shortlisted vendors from which a Best and Final Offer ("BAFO") will be solicited. The list will be ranked in order of final scores as described below, with a cutoff at the quantity higher (up to 125%) than solicited. In the event that several bids are at an equal score at the bottom of the priority list, all will be offered the opportunity to provide a BAFO.

4.5.1 Price Analysis

The Price threshold – or not-to-exceed \$/kW threshold - will be assessed using two key elements: The first is an equivalent LGSP (Levelized Grid Services Price), which is represented as a \$/kW/service/island), which will be provided for each Proposal and reassessed by the Company based on information provided in the Proposal including the Management fee (\$/kW) and Enablement fee (\$/kW), applicable incentives and enablement schedule. The LGSP represents the levelized price of grid service that is produced by the Proposer. This value is then compared against a Qualifying Value. For both Grid Services Capacity on Oahu, Maui, and Hawai'i island, and for FFR2 on Oahu, the Value of Service, which is an avoided cost value that is produced by the Company to reflect an annual \$/kW for each service being procured by island, is the Qualifying Value. For the FFR1 services sought on Oahu, Maui, and Hawai'i island, the Contingency Storage Price is the Qualifying Value.

By the time that the proposals are received, the company is intending to re-evaluate certain Value of Services ("VoS") based on the resource plan consistent with the Stage 2 variable RFP process. That VoS will provide an annual \$/kW value for the Capacity services for each island and FFR2 services for Oahu. Regarding all three Grid Services

sought, any proposal pricing that does not come in lower than the respective Qualifying Value will be seen as having a fatal flaw for the purposes of evaluation.

For scores that do fall under the Qualifying Value, the scores will be rated relative to each other on a \$/kW basis. The Proposal with the highest total price score (lowest price) will receive 400 points, and all other Proposals will receive points based on a proportionate reduction using the percentage by which the Proposer’s levelized service price exceeds the lowest levelized service price.

4.5.2 Non-price Analysis

For the non-price analysis, each Proposal will be evaluated on each of the seven (7) non-price criteria categories set forth in the draft RFP to assess their merit in the general areas of project development feasibility and operational viability. These are presented below, with their corresponding weights. More details on these criteria and rubrics are found in Appendix A.:

- Experience and Qualifications	15%
- Financial Strength and Financing Plan	10%
- Model GSPA Contract Exceptions	10%
- Participants Acquisition and Enablement Strategy	30%
- Participant Service Agreement	5%
- Conformance with Hawaiian Electric's Code of Conduct standards	15%
- Conformance with Information Assurance Policies	15%

All seven (7) non-price criteria will be scored on a scale of 1 (poor) to 5 (highly preferable). The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores. The Proposal with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal’s score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level⁸ for four (4) or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed project.

- **Experience and Qualifications** – Suppliers with a demonstrated ability to construct and deliver grid services to support an electric grid can reasonably be expected to be able to successfully supply grid services to the Company with a higher level of confidence than those without any prior experience. Therefore, proposals will be evaluated based on the experience of the Supplier in recruiting, enrolling, enabling and aggregating customer assets (similar to those being proposed) and managing these assets so as to successfully deliver grid services. At a minimum, the proposer and its team should have experience with delivering

⁸ A score of 3 is the “meets minimum standards” level that a Proposal must achieve in at least four (4) criteria.

(including aggregating, financing, interconnecting and managing) at least one project of a similar size and technology to the one being proposed. Additional preference will be given to proposers with experience in successfully delivering services to multiple utilities in a manner that is similar to the one being proposed and/or that have prior experience delivering such services in Hawai'i.

- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the grid services delivery commitment. A complete financial plan addresses the following issues: project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the project. The financial strength of proposers or their credit support providers will be considered, including their credit ratings. At a minimum, the Proposal should include a basic financial plan for the Plan covering the sources of debt and equity, capital structure, etc. and provide evidence of general support for the project financing. The financing participants are expected to be reasonably strong financially. Suppliers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody's, Fitch) will also be given preference.
- **GSPA Contract Exceptions** – In general, Proposers are encouraged to accept the contract terms identified in the GSPA where possible in order to expedite the overall RFP process and potential GSPA negotiations. Proposers who elect to propose modifications to the GSPA shall provide a MS Word red-line version of the GSPA identifying specific modifications as a component of their Proposal and shall also provide a detailed explanation and supporting rationale for each of the proposed modifications to the GSPA in order to enable the Company and Independent Observer to evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal. With respect to the foregoing, Proposers are encouraged to avoid using drafting notes and comments without making red-line changes directly to the GSPA, or otherwise reserving the right to make additional modifications to the GSPA at a later time, as this will make it difficult for the Company and Independent Observer to determine the impact any such unspecified modifications will have on the overall risk assessment associated with the evaluation of each Proposal. General comments, such as “parties to discuss” are unacceptable and will not be considered as a modification.
- **Participants Acquisition Strategy** – In tandem with the bid size, the Company will be extremely attentive to the customer recruitment strategy. The Company will assess this in terms of the credibility of the approach and seek to determine how much knowledge or experience the Supplier has with the Hawaii market. The Company sees customer or participant acquisition as one of the largest areas of uncertainty or risk in the grid service delivery process, and will seek compelling and well-thought-out participant recruitment and enrollment strategies. A failed enablement will result in economic impacts to Suppliers and leave the system short on projected grid service resources. A plan that utilizes local installers, technicians

or contractors will be rated more favorably than those that do not have a similar consideration.

- **Participant Service Agreement** – The Company has specified that while the Supplier must develop a Participant Service Agreement for engagements directly with customers, the Company would need to review the agreements for completeness relative to the Company guidelines.
- **Conformance with Hawaiian Electric's Code of Conduct** standards – The Company has specified that a Supplier must conform to, at a minimum, the Company Code of Conduct, this is of particular importance given that Suppliers will be interactive with customers, typically on customer premises and otherwise indirectly acting as a certified partner with the Company. As such, the Company will be interested in reviewing the Suppliers' Code of Conduct standards to ensure adequate conformity to Company standards.
- **Conformance with Information Assurance Policies** – Customer data will be exchanged as part of the enrollment and enablement process. Furthermore, Supplier event performance data and by inference, Company system data will also be shared across Supplier-Company systems. As a result, conformity to Company IA standards is a critical part of this engagement and will be an important part of the evaluation process, especially in areas such as secure data transfer, data protection and encryption.

4.6 Selection of the Short List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 50% price-related criteria and 50% non-price-related criteria weighting outlined above. The price and non-price analysis will result in a ranking of Proposals. The Company will select a Priority List from the highest-scoring Proposals that accrue at a minimum to the quantity of up to 125% of grid services as solicited. The Company will, to a degree practical, take into consideration a balanced distribution of class segmentation (residential, small and medium business, and commercial and industrial) and diversity of end-use technologies. If there are evenly ranked proposals at the low end of the list, these will all be advanced for BAFO solicitation, meaning that the short list will not necessarily be limited to the total quantity of grid services as solicited. The Company is thereby able to advance additional quantities beyond the target procurement amount for each service to ensure a robust short list.

4.7 Best and Final Offer (BAFO)

The Company will solicit a Best and Final Offer from Proposers selected to the Priority List. Proposers will have the opportunity to, but are not obligated to, update (downward only⁹) only the pricing elements of their Proposal in order to improve the competitiveness of their Proposal prior to being further assessed in the Final Evaluation. At this time, updates may only be made to the following pricing elements:

⁹ Pricing elements will only be allowed to be lowered - no upward adjustment to the pricing elements. All other characteristics of the Proposal and capabilities must remain valid.

- Management Fees (\$/kW/service/month/island)
- Enablement Fee price (\$/kW/service/island)
- Incentive Adder (\$/kW/service/island)

Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.

At the conclusion of the BAFO phase, each bid to provide FFR-1 will be converted into an NPV for a range of years, extending from the 5-year contract term to the maximum Contingency Storage proposal project term. These NPVs will be used, as described below, for FFR-1 and Contingency Storage project comparisons.

4.8 Final Evaluation for Grid Services Capacity

Once the Priority Lists have been established and the BAFOs are received, the Company will determine a final evaluation score. This will be calculated using the Initial Evaluation methodology. The Non-Price evaluation score will be retained but the Price evaluation will be rescored on the BAFO prices. Projects will be selected to the Final Award Group, beginning with the highest final evaluation score, until the target MW from Table 1-1 is met, or the list of eligible projects are exhausted.

4.9 Final Evaluation for Grid Services FFR-2 (Oahu) and FFR-1 (Maui)

Once the Priority Lists have been established and the BAFOs are received, the Company will determine a final evaluation score. This will be calculated using the Initial Evaluation methodology. The Non-Price evaluation score will be retained but the Price evaluation will be rescored on the BAFO prices. Projects will be selected to the Final Award Group, beginning with the highest final evaluation score, until the target MW from Table 1-1 is met, or the list of eligible projects are exhausted.

4.10 Final Evaluation for Grid Services FFR-1 for Oahu and Hawai'i Island

Once the Priority lists have been established and BAFOs are received, the Company will proceed with a comparative assessment of Contingency Storage bids in the Variable RFP and FFR-1 bids for delivering these services on the Hawai'i Island and Oahu. This step will precede the development of the Final Award list for the Grid Services RFP and precede the Detailed Evaluation stage for the Variable RFP process.

Given that both the Grid Services and Variable Renewable RFP bid review teams will have already assessed both price and nonprice criteria and subsequently established Priority lists, the assumption is that price thresholds have been passed and the non-price assessments have addressed all concerns and potential risks associated with the offers. Therefore, at the time of the comparative assessment, the Company intends to combine all FFR-1 and Contingency Storage

bids from each Priority list into a full set of projects (if possible based on bids, the Company will pull at least 18MW and 50MW of proposed projects from each list for Hawai'i and Oahu respectively). Proposers will be required to bid FFR-1 and contingency storage for Hawaii island in increments of 3 MW, 6 MW, 9 MW or 12 MW and for Oahu for a minimum of 5 MW.

With the complete list established, the Company will execute a price-based evaluation. The proposed cost for each FFR-1 bid and Contingency Storage project will be calculated as a Net Present Value ("NPV") to determine a levelized price in \$ per MW. Because a storage project offered under the Variable RFP may have a longer term than a Grid Services contract, the Company will make certain valuation assumptions about the extensibility of an FFR bid under the Grid Services RFP to establish a comparative basis for analysis. The crux of the effort will be to extend the costs associated with the FFR-1 Grid Services bid to match the proposed project term for the Contingency Storage. With this as a premise, the Company will develop two NPVs for each FFR-1 proposal, as a form of a sensitivity analysis. The first will be a simplified extension of the 5-year contract costs as follows:

- Costs are extended by creating theoretical contract years beyond the initial 5-year period
 - o Incentive amounts (same \$/kW used as the initial 5-year period)
 - o Management fees (same \$/kW used as the initial 5-year period)
- There is a 10% attrition of enabled customers every five years, so enablement fees need to account for that
 - o Enablement fees to address attrition will stay consistent with currently bid enablement fees (same \$/kW used as the initial 5-year period).

The second will be a set of modified assumptions as follows:

- Management Fee (same \$/kW used as the initial 5-year period) are extended by creating theoretical contract years beyond the initial 5-year period
- Customer incentive values (same \$/kW used as the initial 5-year period) stay consistent over additional years
- There is a 10% attrition of enabled customers every five years, so enablement fees need to account for that
 - o Enablement fees to address attrition will stay consistent with currently bid enablement fees (same \$/kW used as the initial 5-year period).
- Aggregator management fees see a 5% reduction every five years

This approach will be applied to allow the Company to align a 5-year Grid Services contract with any Variable Renewable RFP proposed Contingency Storage project term. The sensitivity, largely based on increased management fees, allows the Company to determine risk associated with Management fee increases; attrition is based largely on historical attrition rates.

With the calculations completed to create a levelized price for comparison, the Company will evaluate all FFR-1 and Contingency Storage proposals and rank them in order of least cost to highest cost. If possible based on the number and quality of Proposals received, the Company will attempt to include in the joint evaluation Projects totaling 18 MW of Contingency Storage on the Priority List for Contingency Storage for the Variable Renewable RFP and 18 MW of

FFR-1 on the Short List for the Grid Services RFP for Hawai'i island, and similarly for Oahu, 50 MW of Contingency Storage for the Variable Renewable RFP and 50 MW for the Grid Services RFP. The lowest cost proposals across all Variable Renewable RFP and Grid Services RFP projects summing to 18MW and 50MW will be selected for the Hawai'i Island and Oahu Final Award Groups, respectively (NOTE: Contingency Storage selection for Hawai'i island will incorporate locational constraints not applicable to the Grid Services FFR selection).

If after this process, the Priority list reflects a shortage of total resources based on solicitation targets, the Company will identify any additional prospective bids and seek BAFO from those bids. Specifically, if as a result of an aggregator's FFR-1 bid being removed, the Capacity contribution from that aggregator as a stand-alone service is not within the Priority list, and thus the Company is short on Capacity, the Company would inspect the bid ranking for the next best Capacity bid of equal or greater quantity. At that time, the Company would approach the aggregator and request a BAFO for the remaining Capacity target.

Chapter 5: Post Evaluation Process

5.1 Contract Negotiation Process

Within five (5) business days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. The Company's goal is to complete contract negotiations and submit GSPAs for approval within six (6) months of notification of intent to enter contract negotiations.

5.2 PUC Approval of GSPA

Any signed GSPA resulting from this RFP is subject to PUC approval as described in the GSPA, including Appendix 1 thereof.

REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

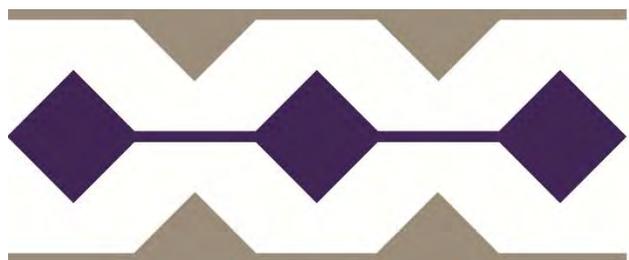
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix A – Definitions



**Hawaiian
Electric**

“Affiliate” Any person or entity that possesses an “affiliated interest” in a utility as defined by section 269-19.5, Hawaii Revised Statutes (“HRS”), including a utility’s parent holding company, except as otherwise provided by HRS section 269-19.5(h).

“Aggregator” means an entity that aggregates resources from participating customers to deliver grid services.

“Best and Final Offer” or “BAFO” means the final offer from a Proposer, as further described in Section 4.6 and elsewhere in this RFP.

“Code of Conduct” means the code of conduct submitted as Appendix F to this RFP with respect to the conduct of RFP team, Affiliate team, and Unassigned Company Resources.

“Code of Conduct Procedures Manual” or “Procedures Manual” means the manual submitted to this RFP, which was put in place to address and to safeguard against preferential treatment or preferential access to information in a Hawaiian Electric RFP process. The Procedures Manual is attached as Appendix C to this RFP.

“Company” means Hawaiian Electric Company, Inc., a Hawai‘i corporation.

“Competitive Bidding Framework” or “Framework” means the Framework for Competitive Bidding contained in Decision and Order No. 23121 issued by the Public Utilities Commission on December 8, 2006, and any subsequent orders providing for modifications from those set forth in Order No. 23121 issued December 8, 2006.

“Consumer Advocate” means the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawai‘i.

“Day” means a calendar day, unless the term “business day” is used, which means calendar day excluding weekends and federal and State of Hawai‘i holidays.

“Electronic Procurement Platform” means the third-party web-based sourcing platform that will be used for the intake of Proposals and associated electronic information, storage and handling of Proposer information, and communication.

“Eligibility Requirements” has the meaning set forth in Section 4.2 of this RFP.

“Enablement Fee” refers to the allocation, on a \$/kW basis, of fees associated with the initial enablement of a customer device to ready it for the delivery of grid services. This fee is capped at ten times the monthly Management Fee for the same service.

“Evaluation Team” means agents of the Company who evaluate Proposals.

“Final Award Group” means the group of Proposers selected by the Company from the Short List, with which the Company will begin contract negotiations, based on the results of the Company’s detailed evaluation.

“Grid Services Delivery Plan” or “Plan” refers to the proposed delivery of grid services by the Proposer, including the timeline, cost, quantities, and other relevant details of said Proposal.

“GSPA” means the Grid Services Purchase Agreement attached as Appendix L to this RFP.

“Hawaiian Electric” means Hawaiian Electric Company, Inc., a Hawai‘i corporation.

“Hawaiian Electric Companies” or “Companies” means Hawaiian Electric Company, Inc. and its subsidiaries, Hawaii Electric Light Company, Inc. and Maui Electric Company, Limited.

“Hawaiian Electric System” or “System” means the electric system owned and operated by Hawaiian Electric on the island of O‘ahu (including any non-utility owned facilities) consisting of power plants, transmission and distribution lines, and related equipment for the production and delivery of electric power to the public.

“HRS” means the Hawai‘i Revised Statutes as of the date of this Request for Proposals.

“Imputed Debt” means adjustments to the debt amounts reported on financial statements prepared under generally accepted accounting principles (“GAAP”). Certain obligations do not meet the GAAP criteria of “debt” but have debt-like characteristics; therefore, credit rating agencies “impute debt and interest” in evaluating the financial ratios of a company.

“Incentives” or “Incentive Payments” refers to bill credits that would be paid directly to the grid service participants (residential, small and medium business, and commercial and industrial customers).

“Independent Observer” has the meaning set forth in Section 1.5 of this RFP.

“Levelized Grid Services Pricing” refers to the annualized cost per service per island, inclusive of all associated customer incentives, as calculated in the worksheet provided in Appendix M of this RFP.

“Management Fee” refers to the price of Supplier for the monthly management of customer devices for the delivery of grid services. Management fees are set on a \$/kW/service/island basis.

“Mediation” means the confidential mediation conducted in Honolulu, Hawai‘i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. (or its successor) or, in its absence, the American Arbitration Association then in effect.

“MW” means megawatt.

“MWh” means megawatt hour.

“NDA” means the Mutual Confidentiality and Non-Disclosure Agreement attached to this RFP as Appendix F.

“Non-Price Evaluation Team” means Employees and consultants of the Company who evaluate the Proposal non-price related criteria as set forth in Section 4.4 of this RFP.

“O&M” means operation and maintenance.

“Performance Standards” means the various performance standards for the delivery of grid services to the Company as set forth in Exhibit A of the GSPA and as described in Chapter 2 of this RFP.

“Power Supply Improvement Plan” or “PSIP” means the Company’s Power Supply Improvement Plan.

“Price Evaluation Team” means Employees and consultants of the Company who evaluate the Proposal price related criteria as set forth in Section 4.4 of this RFP.

“Priority List” means the group of Proposals selected by Hawaiian Electric as described in Section 4.5 of this RFP.

“Proposal” means a proposal submitted to Hawaiian Electric by a Proposer pursuant to this RFP.

“Proposal Due Date” means the due date stated in RFP Schedule.

“Proposer” means a person or entity that submits a Proposal to Hawaiian Electric pursuant to this RFP.

“Proposer’s Response Package” means the form in which the Proposal should be submitted, which is attached as Appendix B to this RFP.

“PSIP Update Report: December 2016” means the Company’s PSIP update filed on December 23, 2016 in Docket No. 2014-0183.

“PUC” means the State of Hawai‘i Public Utilities Commission.

“Request for Proposals” or “RFP” means a request for Proposals issued pursuant to a competitive bidding process authorized, reviewed, and approved by the PUC.

“Renewable Portfolio Standards” or “RPS” means the Hawai‘i law that mandates that the Company and its subsidiaries generate or purchase certain amounts of their net electricity sales over time from qualified renewable resources. The RPS requirements in Hawai‘i are currently codified in HRS §§ 269-91 through 269-95. “RFP Schedule” means the schedule set forth in Table 3-1, Section 3.1 of this RFP.

“Site” means the parcel of real property on which the Facility, or any portion thereof, will be constructed and located, together with any Land Rights reasonably necessary for the construction, ownership, operation and maintenance of the Facility.

“Source Code Escrow” is defined as source code or an economic equivalent sufficient to afford the Company the opportunity to utilize a Supplier’s assets for the continued delivery of grid service should the Supplier no longer be able to do so.

“Standby Letter of Credit” refers to the security required within the GSPA to serve as collateral for any Liquidated Damages or default conditions.

“Supplemental Review” means the prescribed process by which a Supplier may receive approval for export allowances beyond the pre-approved limits, for the delivery of grid services. The Supplemental Review process is explained in Appendix N of this RFP.

“Supplier” means the entity that the Company is contracting with, as set forth in the GSPA, for the delivery of grid services..

“System Integration Test” means the date on which aSupplier’s system has been readied for integration with the Company’s head-end system and is tested to demonstrate successful integration.

“Threshold Requirements” has the meaning set forth in Section 4.3 of this RFP.

Any capitalized term not defined in this RFP has the meaning set forth in the GSPA.

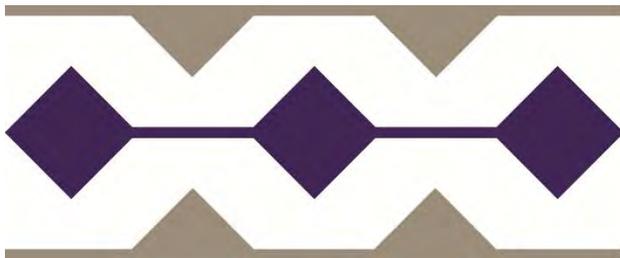
REQUEST FOR PROPOSALS
FOR
GRID SERVICES FROM CUSTOMER-SITED ASSETS
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix B – Proposer’s Response Package



**Hawaiian
Electric**

Table of Contents

<i>Section</i>	<i>Description</i>	<i>Page</i>
1.	GENERAL INSTRUCTIONS TO PROPOSERS	1
1.1	ELECTRONIC PROCUREMENT PLATFORM.....	1
1.2	PROPOSAL SUBMISSION PROCEDURES	2
1.3	PROPOSAL COMPLETION AND CONFIRMATION PROCEDURES.....	4
2.0	PROPOSAL PDF	4
2.1	REQUIRED FORMS ACCOMPANYING PROPOSAL PDF	4
2.2	PROPOSAL SUMMARY/CONTACT INFORMATION	5
2.3	IMPLEMENTATION PLAN	6
2.4	PRICING.....	9
2.5	FINANCIAL.....	9
2.6	GSPA CONTRACT EXCEPTIONS AND FINANCIAL COMPLIANCE	12
2.7	INFORMATION ASSURANCE	12
2.8	EXPERIENCE AND QUALIFICATIONS.....	12
2.9	STANDARDS OF CONDUCT	13
2.10	PARTICIPANT SERVICE AGREEMENT.....	14
3.0	MINOR PROPOSAL VARIATIONS	14
3.1	PROPOSAL VARIATION 1 (IF MINOR VARIATION PROPOSED)	14
3.2	PROPOSAL VARIATION 2 (AS NECESSARY).....	14
3.3	PROPOSAL VARIATION 3 (AS NECESSARY).....	14

1. GENERAL INSTRUCTIONS TO PROPOSERS

The Company has elected to use the services of PowerAdvocate®, a third-party electronic platform provider. Sourcing Intelligence®, developed by PowerAdvocate® is the Electronic Procurement Platform that the Company has licensed and will utilize for the RFP process. All Proposals and all relevant information must be submitted via the Electronic Procurement Platform, in the manner described in this RFP.

Proposers must adhere to the response structure and file naming conventions identified in this Appendix for the Proposer's response package.

Proposers must provide a response for every item. If input/submission items in the RFP are not applicable to a specific Proposer, Proposal or Proposal variation, Proposers must clearly mark such items as "N/A" (Not Applicable) and provide a brief explanation.

Proposers must clearly identify all confidential information in their Proposals, as described in more detail in Section 3.12 Confidentiality of the RFP.

All information (including attachments) must be provided in English. All financial information must be provided in U.S. Dollars and using U.S. credit ratings, or Proposers must provide a basis for translation.

It is the Proposer's sole responsibility to notify the Company of any conflicting requirements, ambiguities, omission of information, or the need for clarification prior to submitting a Proposal.

The RFP will be conducted as a "Sealed Bid" event within Sourcing Intelligence, meaning the Company will not be able to see or access any of the Proposer's submitted information until after the event closes.

1.1 ELECTRONIC PROCUREMENT PLATFORM

To access the RFP event, the Proposer must register as a "Supplier"¹ on Sourcing Intelligence (Electronic Procurement Platform). One Proposal may be submitted with each Supplier registration. Minor variations, as defined in Section 1.8 of this RFP may be submitted along with the Proposal under the same registration.

If a Proposer is already registered on Sourcing Intelligence, the Proposer may use their current login information to submit their first Proposal. If the Proposer chooses to submit more than one Proposal, the Proposer must register as a new "Supplier" on Sourcing Intelligence for each additional Proposal.

Each registration will require a unique username, unique e-mail address, and unique Company name. Proposers that require multiple registrations to submit multiple Proposals should use the Company name field to represent the Company name and Proposal number (ex: CompanyNameP1). Proposers may use shorthand or clear abbreviations. Proposers are asked to refer to their chosen unique company name throughout when referring to it in text responses.

¹ The language in Appendix B sometimes refers to "Grid Services Contract Managers" as "Bid Event Coordinator" and to "Proposers" as "Suppliers" (Bid Event Coordinator and Supplier are terms used by PowerAdvocate).

Proposers can register for an account on Sourcing Intelligence by clicking on the “Registration” button (located in the top right corner of the webpage) on the PowerAdvocate website at the following address:

www.poweradvocate.com

The Proposer’s use of the Electronic Procurement Platform is governed by PowerAdvocate’s Terms of Use. By registering as a “Supplier” on the Electronic Procurement Platform, the Proposer acknowledges that the Proposer has read these Terms of Use and accepts and agrees that, each time the Proposer uses the Electronic Procurement Platform, the Proposer will be bound by the Terms of Use then accessible through the link(s) on the PowerAdvocate login page.

Once a Proposer has successfully registered as a “Supplier” with PowerAdvocate, the Proposer shall request access to the subject RFP event from the Company Contact via e-mail through the RFP e-mail address set forth in Section 1.7 of the RFP. The e-mail request must list the Company Name field under which the Proposer has registered with PowerAdvocate. If the Proposer plans to submit multiple Proposals and has registered multiple accounts in accordance with the instructions above, the e-mail request must contain the Company Name field for each account that will be used to submit the Proposals. After the Bid Event Coordinator has added the Proposer to the event, the Proposer will receive an invitation to the RFP event at the registered e-mail account, and the Proposer will see the bid event on their dashboard upon logging into Sourcing Intelligence. Once the RFP event opens, the Proposer may begin submitting their Proposal(s).

After registering and prior to the opening of the RFP, Proposers are encouraged to familiarize themselves with the Electronic Procurement Platform, including tabs, the dashboard, the messaging feature, the Sourcing Intelligence Quick Start for Suppliers, etc. Proposers should note that they will not be able to access any bid documents until the event officially opens.

Proposers may contact PowerAdvocate Support for help with registration or modification of registration if desired. Support is available from 8 AM to 8 PM Eastern Time (2 AM to 2 PM Hawai’i Standard Time when daylight savings is in effect) Monday to Friday, except for Holidays posted on the PowerAdvocate website, both by phone (857-453-5800) and by e-mail (support@poweradvocate.com).

Contact information for PowerAdvocate Support can also be found on the bottom border of the PowerAdvocate website: www.poweradvocate.com

Once the RFP event is opened and Proposers have registered, Proposers will have online access to general notices, RFP-related documents, and other communications via the Electronic Procurement Platform.

1.2 PROPOSAL SUBMISSION PROCEDURES

An e-mail notification will be sent to all prospective Proposers via the messaging feature in the Electronic Procurement Platform when the event has been opened to receive Proposals.

After logging onto the Electronic Procurement Platform, the RFP will be visible on the Proposer’s dashboard with several tabs, including the following:

- “1. Download Documents:” Documents stored under this tab are provided for the Proposer’s use and information. All documents can be downloaded and/or printed, as required.

- “2. Upload Documents:” Proposal submission documents requested in Appendix B must be uploaded using this tab.
- “3. Commercial Data:” This tab is NOT USED for this event.
- “4. Technical Data:” This tab is NOT USED for this event.
- “5. Pricing Data:” This tab is NOT USED for this event.

Step-by-step instructions for submitting a complete Proposal are provided below:

1. Proposers must upload their Proposal files to submit a complete Proposal. These tasks may be completed in any order, but all must be completed before the Proposal Due Date.
2. Submit (upload) one consolidated PDF representing your Proposal via the “2. Upload Documents” tab. That Proposal PDF must abide by the format specified in this Appendix B. An MSWord.docx template that outlines the format of this document is available under the “1. Download Documents” tab for the Proposer’s use. **Response information must be provided in the order, format and manner specified in this Appendix B and must clearly identify and reference the Appendix B section number that the information relates to.**
 - a. Proposers shall use a filename denoting: CompanyName_Proposal#.pdf.
3. Proposal information that cannot be easily consolidated into the PDF file as described in Step 2 (such as large-scale drawing files) or files that must remain in native file format (such as computer models and spreadsheets) shall be uploaded separately but must be referenced from within the main Proposal PDF file. Such additional files must follow the naming convention below:
 - a. File names must include, in order, Company Name, Proposal number (if more than one Proposal being submitted per Proposer), Variation (if any variations are being submitted), Appendix B section number, and a file descriptor, as shown in the example file name below:
AceEnergyP1V2_2.5_ContractCapability.xlsx
Proposers may use abbreviations if they are clear and easy to follow.
4. Upload files using the "**2. Upload Documents**" tab on the Electronic Procurement Platform.
 - a. For all documents identify the "Document Type" as “Technical Information.” (Do not identify any documents as “Commercial and Administrative” or “Pricing.”)
 - b. "Reference ID" may be left blank.
 - c. Select "Choose File..." Navigate to and choose the corresponding file from your computer. Select "Open" and then "Submit Document."

There is no limit to the number or size of files that can be uploaded. Multiple files may be grouped into a .zip archive for upload. When successfully uploaded, documents will appear under the "Bid Submissions" section on the bottom of the tab's page, organized within the “Technical Information” Document Type. Repeat steps a, b and c, as required for each file upload.

If a file with the same name is uploaded twice, the Platform will automatically append a unique numerical extension to the Document Name. To delete a file that has been previously uploaded, click on the “X” button in the “Actions” column for the file to be deleted.

5. The Company will not be responsible for technical problems that interfere with the upload or download of Proposal information. Support is available to answer technical questions about PowerAdvocate’s Sourcing Intelligence from 8 AM to 8 PM Eastern Time (2 AM to 2 PM Hawai’i Standard Time when daylight savings is in effect) Monday to Friday, except for Holidays posted on the PowerAdvocate website, both by phone (857-453-5800) and by e-mail (support@poweradvocate.com).
6. Proposers are strongly encouraged to start early, save data frequently and avoid waiting until the last minute to submit the required information. Proposers are allowed to revise information that has been previously submitted, as well as add, modify and/or delete documents any time prior to the event close deadline.
7. All questions or concerns regarding the RFP, prior to RFP Proposal Submission shall be submitted to the Company Contact via the RFP email address provided in Section 1.7 of the RFP. Communication after Proposal Submission shall be via the PowerAdvocate Messaging tab. Per RFP Section 1.5, the Independent Observer will monitor messages within the bid event.

1.3 PROPOSAL COMPLETION AND CONFIRMATION PROCEDURES

To confirm the submission of all proposal files, in the “Status” tab on the Electronic Procurement Platform, confirm that the “Total Uploaded Files” is the number of expected files to be included in the submission by checking it against your list of submitted files.

Example “Status” tab view:

Your Bid Intention: Bidding		
Total Uploaded Files:	18	Last Upload: 02/08/18
Saved Commercial Datasheets:	1 of 1	Last Saved: 02/08/18
Saved Technical Datasheets:	0 of 0	
Saved Pricing Datasheets:	0 of 0	

2.0 PROPOSAL PDF

2.1 REQUIRED FORMS ACCOMPANYING PROPOSAL PDF

The following forms must accompany each proposal, must be attached to the Proposal PDF, and uploaded via the “2. Upload Documents” tab:

- **Cover Letter** signed by a representative for the Proposer **authorizing the submission** of the Proposal

- Fully executed **Mutual Confidentiality and Non-Disclosure Agreement** (Appendix E to the RFP, may be downloaded from the “1. Download Documents” tab in the Electronic Procurement Platform)
- **Federal and State tax clearance certificates** for the Proposer (a Certificate of Vendor Compliance for the Proposer may be provided in lieu of Federal and State tax clearance certificates)
- Contract Capability Bid Form (Appendix G)
- Pricing Sheet (Appendix H)
- Requirements Summary Worksheet (Appendix I)
- Questionnaire Summary Worksheet (Appendix J)
- Information Assurance Worksheet (Appendix K)
- Levelized Grid Service Price Worksheet (Appendix M)

2.2 PROPOSAL SUMMARY/CONTACT INFORMATION

2.2.1 Provide a **primary point of contact** for the Proposal being submitted:

- Name
- Title
- Mailing Address
- Phone Number
- Email Address

2.2.2 **Executive Summary of Proposal.** Include an executive summary that briefly and concisely conveys what the Proposer sees as the most important messages of its proposal, the factors of differentiation relative to other potential Proposals, and the critical points that the Company should consider in their evaluation. Please explain how your approach will benefit the Company from both a short term and a long-term perspective.

2.2.3 **Pricing summary.** Pricing information must be filled out in the Pricing Sheet (Appendix H). Enablement fees and management fees by service by island can be summarized here for the Proposal and any of its variations (if applicable). The Company also recommends that presenting the levelized cost of service in the form of \$/kW for each island be presented in summary form here. The Company has prepared a calculation worksheet and supporting narrative to derive these summary figures in Appendix M. Provide any pricing information only in this section – do not embed pricing information in any other portion of the Proposal PDF. Ensure the pricing information matches what is submitted in the Pricing Sheet. (If there are any discrepancies, pricing information submitted in the Pricing Sheet fields will take precedence over this summary section.

2.2.4 Provide a **high-level overview of the proposed Contract Capability**, including at a minimum the following information:

- Annual MW targets by service by island
 - Specific to Hawai‘i island, the Fast Frequency Response grid service bid must be in increments of 3MW.
- Number of projected customers (incremental by year by service by island)
- Customer segment(s) targeted

2.3 IMPLEMENTATION PLAN

The Proposer should include a detailed plan for implementing customer resources necessary to acquire and deliver grid services to the Company. When preparing the Implementation Plan, Proposers should refer to the Requirements Summary ([Appendix I](#)). Information captured in the worksheet or presented in the GSPA and other informational appendices does not have to be repeated in the Implementation Plan, but rather the Plan should capture the manner and timing in which Proposers will implement the requirements and perform maintenance operations in Hawai‘i. The detailed Implementation Plan should address, at a minimum the following sub-sections:

2.3.1 DR Service (Phase and Roles)

In this section, the Proposers shall discuss how it or its subcontractors will meet each of the phases and roles specified below.

1. Customer Acquisition

Customer Recruitment and Enrollment: Proposer shall perform tasks related to recruiting customers, including marketing and advertising, and execution of program Participant Services Agreement. Agreements shall exist between the customer and the Proposer. Proposer should articulate if and how entities with local ties will be performing the customer recruitment and enrollment. If Proposer choose to do so, Proposer could offer minimal marketing and rely on the Company to provide marketing support as required. *Technical Coordination & Customer Enablement:* Proposers shall perform tasks related to scheduling customer visits for audits and/or installation and testing.

The Proposer’s Implementation Plan must include a Customer Acquisition Plan that clearly identifies the customer classes to be targeted for recruitment and specifies their marketing strategy. The Implementation Plan must highlight the Proposer capabilities and experience in marketing customer-side programs to utility customers. Proposers must provide the methodology used to project the number of customers and Contract Capability that can be recruited and enrolled in customer-side programs. The Plan must also identify the tasks required before the recruitment process begins, including a timeline.

2. Technology Solution

Technology Provider: Respondent shall provide the customer-sited device, VEN and VTN:

- Customer-sited Device - The device, which is connected to the VEN on the customer side of the meter, is the equipment that ultimately provides the response that results in a grid service,
- VEN - Virtual End Node, also known as a gateway. The VEN is a device that allows communication between the customer-sited devices and the Proposer's VTN, which will participate during a DR event by connecting to a Utility's VTN.
- VTN - Virtual Top Node, also known as a head-end. The VTN signals customers VEN to start and end event participation. VTN can also send price signals to VEN's. In this instance, there are two VTNs: a Proposer's VTN and the Company's VTN.

The Company has specified technical design principles for the architecture. These are identified in the GSPA attached as Appendix L. The Proposer's technology solution must adhere to those principles and requirements. They include:

- **Cyber Security**
- **Scalable Solution**
- **Leverage Industry Protocols**
- **Interoperability**

The Company has adopted OpenADR 2.0b as the standard protocol for communications among the Company VTN and Supplier VTN and/or VENs. Proposers are encouraged, but not required, to provide Open ADR 2.0b certified VENs, but must have OpenADR 2.0b certification if the head-end (Proposer VTN) will be interacting with the Company VTN. To the extent that OpenADR 2.0b certified systems are not proposed, any additional costs the Companies may incur to integrate alternative systems may affect the competitiveness of Respondent's proposal and as specified in the GSPA, require additional integration measures in event of default.

The Proposer's Implementation Plan should clearly explain the technical solutions to be employed by the Proposer. The Company reserves the right to require a field demonstration of technical solutions proposed by Proposers if they are unproven technologies.

The Plan should also explain how the Proposer's systems are logistically operated including staffing levels, server locations, communications requirements and the availability of secure communications networks. The Proposer should place particular emphasis on explaining how the technologies will perform and be operated in a remote island environment.

In the Plan, the Proposer should clearly identify the responsibilities of the Company, if any, necessary to implement the technical solution, including required integration with the Company's back office systems.

3. Field Services

Installation of Customer-sited Devices: All efforts associated with the installation of or retrofitting of a customer-sited device such that the device is enabled and can perform to an event signal from the Proposer's VEN or VTN. Proposer should articulate if and how entities with local ties will be performing the installation or retrofit.

Commission VEN: Respondent shall perform tasks related to purchasing VEN, installing VEN, connecting VEN with VTN, and verifying VTN to VEN connection and resource response during test events. Proposer should articulate if and how entities with local ties will be performing the VEN commissioning.

Operation of VTN: Operations performed by a VTN include, but are not limited to, provisioning of VENs, execution of events, contacting participants, tracking participant information, and reporting related to events and participation.

4. Operations and Maintenance

Customer Maintenance: Proposer shall perform tasks related to the customer premise, maintaining customer devices and/or VEN's, addressing customer inquiries and performing baseline calculations for purposes of determining customer performance. Proposer should articulate if and how entities with local ties will be performing the customer maintenance.

Measurement & Verification (M&V) – M&V is the use of meter data to quantify customer performance during a customer event. Meter data is used to measure customer's performance, which in turn can be used for incentive payments. The Company Meter Installation department will replace all Commercial customer revenue meters to interval meters. Residential customers may or may not receive an interval meter from the Company, but Respondents should provide a sub meter or on-board resource telemetry for measurement purposes. The Proposer will be obligated to comply with Advanced Metering Requirements found in Exhibit E of the GSPA.

Settlement – Proposer shall perform tasks related to settlement of compensation for the provision of grid services. Proposer shall submit settlement results to the Companies for delivery of customer incentive. Proposers will be held to the Settlement processes and customer data exchange requirements as specified in Exhibit G and Exhibit K of the GSPA.

The Proposer's Implementation Plan should address its plan for the installation of VENs/gateways and other in-premise devices, including personnel requirements, transportation requirements, scheduling practices, customer service level requirements, installation status reporting practices and safety training and practices. The Plan must identify any planned sub-contractors to be used for this work, or if such subcontractors have not yet been identified, then a plan for identifying and retaining sub-contractors.

The Proposer must describe their plan for providing customer service related to customer and/or Company initiated trouble calls, repairs and other field services. Proposers are expected to meet industry standards. The Companies' customer service requirements and specifications are available in the GSPA Exhibit M.

a. Continuity of Business Plan

In lieu of providing Source Code escrow or economic escrow in the place of Source Code, Proposers may choose to provide a Continuity of Business Plan that demonstrates how the enabled devices will be capable of containing the delivery of grid services in accordance with the contractual obligations in the event of a Proposer's default or bankruptcy.

b. Achieving Performance Requirements

The Proposer shall prepare information in the Implementation Plan to clearly depict the overall approach to portfolio design and management such that the Proposer can be reasonably expected to meet the bid and the contractual obligations as set forth in the GSPA. The Proposer may include information about the expected load shapes of the customers and load profiles of associated participating devices, the analysis employed to derive the quantity of services to be committed, the risk adjustments made and applied to the assumptions to minimize exposure to failure to meet obligations, and so forth.

2.4 PRICING

Pricing should be based on a five (5) year contract starting in June 2020. The Proposers shall reflect pricing in the Pricing Sheet ([Appendix H](#)), which will - upon final award and negotiations - be inserted as Exhibit K of the GSPA. Rather than a single \$/capability (kW) bid amount each month, the cost proposal format shall be broken down into three line items of "Enablement," "Management" and "Added Incentive." The Company will allow the \$/capability (kW) for enablement to be a maximum of ten (10) times the \$/capability (kW)*Month for the management fee. Bids containing a price for enablement of more than the specified limit will be disqualified. The proposal should include all costs (labor costs and/or equipment costs) that will be incurred by the Company and outside the Proposer's pricing.

Pricing proposals should be inclusive of all labor, materials, administrative and non-labor costs, including travel, rent, overheads, licenses, permits, taxes (*including Hawaii General Excise Taxes*), etc. deemed necessary to successfully deliver the proposed grid services, and to otherwise comply with the terms and conditions specified in this RFP.

Pricing should articulate clearly the assumptions that make up the bid such as if the Proposer expects the Companies to assist with the marketing how that impacts the bid, Proposer relying on specific tax provisions to continue during the GSPA contract duration, or any other assumptions that may impact the bid during negotiation.

Specific to pricing bids regarding Fast Frequency Response – 1 ("FFR-1") for Oahu and Hawai'i island, the Proposers shall provide pricing for bundled services and unbundled services where the grid services are individually priced.

2.5 FINANCIAL

Provide the information identified below for the Company to assess the following financial aspects of its Proposal:

- Financial Viability
- Financial Strength

- Financing Plan

2.5.1 Financial Viability & Financing Plan

2.5.1.1 The Proposer should offer the Company evidence of financial viability. This can be portrayed through a variety of mechanism, including equity partners, equity financing, or project finance.

2.5.1.1.1 Who are the equity participants in the Plan (or the equity investors)?

- Provide an organization structure for the Proposer including any general and limited partners and providers of capital that identifies:
 - Associated responsibilities from a financial and legal perspective
 - Percentage interest of each party

2.5.1.1.2 **How will the Project be financed?**

Address at a minimum:

- The Plan's projected financial structure
- Expected source of debt and equity financing

2.5.1.1.3 Discuss and/or provide **supporting information on any project financing guarantees.**

2.5.1.1.4 Describe any **written commitments obtained from the equity participants.**

2.5.1.1.5 Describe any **conditions precedent to project financing**, and the Proposer's plan to address them, other than execution of the GSPA or any other applicable project agreements and State of Hawaii Public Utilities Commission approval of the Power Purchase Agreement and other agreements.

2.5.1.1.6 Provide any **additional evidence to demonstrate that the Grid Services Delivery plan is financeable.**

2.5.1.1.7 Project Financing Experience of the Proposer

Describe **the project financing experience of the Proposer** in securing financing for projects of a similar size and technology as the one being proposed including the following information for any referenced projects:

- Project Name
- Project Technology
- Project Size
- Location
- Starting Date of Project

- Duration of Project/contract
- Counter party
- Financing Structure
- Major Pricing Terms

2.5.2 **Financial Strength**

2.5.2.1 Provide **copies of the Proposer's audited financial statements** (balance sheet, income statement, and statement of cash flows) or equivalent:

- Legal Entity
 - Three (3) most recent fiscal years
 - Quarterly report for the most recent quarter ended
- Parent Company
 - Three (3) most recent fiscal years
 - Quarterly report for the most recent quarter ended

2.5.2.2 Provide the **current credit ratings** for the Proposer (or Parent Company, if not available for Proposer), affiliates, partners, and/or credit support provider:

- Standard & Poor's
- Moody's
- Fitch

2.5.2.3 Describe any **current credit issues** regarding the Proposer or affiliate entities raised by rating agencies, banks, or accounting firms.

2.5.2.4 Provide any **additional evidence that the Proposer has the financial resources and financial strength** to complete and operate the Project as proposed.

2.5.2.5 Provide evidence that the Proposer can provide the required securities.

2.5.2.5.1 Describe the Proposer's **ability (and/or the ability of its credit support provider) and proposed plans to provide the required securities** including:

- Type of security
- Sources of security
- Description of its credit support provider

2.5.2.5.2 Disclosure of Litigation and Disputes

Disclose any **litigation, disputes, and the status of any lawsuits or dispute resolution** related to projects owned or managed by the Proposer or any of its affiliates

2.6 GSPA CONTRACT EXCEPTIONS AND FINANCIAL COMPLIANCE

2.5.1 If Proposers elect to propose modifications to the GSPA, **provide a red-lined MS Word version of the GSPA** indicating specific requested modifications. In general, Proposers are encouraged to accept the contract terms identified in the GSPA where possible in order to expedite the overall RFP process and potential GSPA negotiations. Proposers shall also provide a detailed explanation and supporting rationale for each of the proposed modifications to the GSPA in order to enable the Company to evaluate the impact that the proposed modifications will have on the overall risk assessment. Only redlines received through the response of the RFP will be considered during the negotiation. The Company thus will be better able to assess the bids (including the pricing) in complete picture knowing the full legal position that the Proposers have taken.

The Exhibits of GSPA are deemed to be non-negotiable as they are akin to market participation rules. With multiple Proposer responses expected, the Company would prefer not to manage GSPAs with meaningfully different terms or key components. For example, the Company will not execute GSPA contracts with different Participation Service Agreement. The Proposer will be expected to populate Exhibit H Contract Capability and Exhibit K Settlement with their proposed information. Furthermore, while these Exhibits are non-negotiable, redlines will be considered if it will add clarification to the requirements.

NOTE: In the event the Proposer does not upload redlines of the applicable form agreements, the Company will assume the terms in such form agreements are agreeable to the Proposer

2.7 INFORMATION ASSURANCE

Respondents must clearly state any exceptions to the specifications and requirements included in the RFP (Appendix K) and the attached GSPA (Article 26). Each exception shall be stated separately, identify the reason(s) for the Respondent's exception, and shall propose a clearly stated alternative. The Companies will have the right in their sole judgment and discretion to reject any proposal or evaluate it unfavorably based on exceptions taken by Respondents. The Companies may in their sole discretion disqualify Respondents, even if selected for the short list, if exceptions to the RFP are not explicitly identified in the Respondent's proposal and such unidentified exceptions are discovered after the proposals are received by the Companies and, such unidentified exceptions affect the Respondent's price or ability to deliver the grid services proposed.

2.8 EXPERIENCE AND QUALIFICATIONS

Proposers, its affiliated companies, partners and/or contractors and consultants are required to demonstrate experience and capability to successfully cultivate and deliver the proposed Grid Services Delivery Plan. The Company is interested in a team that has demonstrated success in the aggregation and delivery of grid services,

including any technology proposed, through the commercial operations stage where such efforts were of a similar scope, technology and structure to the Grid Services Delivery Plan being proposed by the Proposer. The Company is also interested in any local partners or subcontractors the Proposer may or may not work within delivering the grid services.

2.8.1 Provide an **organizational chart** for the Plan that lists the project participants and identifies the management structure and responsibilities.

- For each of the plan participants (including the Proposer, partners, and proposed contractors), provide statements that list the specific experience of the firm in: recruiting, enrolling, enabling, aggregating, forecasting and delivering grid services of similar type, size and technology, and
- Any evidence that the plan participants have worked jointly on other plans.

2.8.2 Identify those **member(s) of the team** the Proposer is submitting to meet the experience Threshold Requirement and demonstrate the member(s) firm commitment to provide services to the Proposer.

2.8.3 Identify those **members of the team with experience and qualifications** including affiliates and their principal personnel who will be involved in the plan contracting deliver grid services. If the Proposer consists of multiple parties, such as joint ventures or partnerships, provide this information for each party, clearly indicating the proposed role of each party, and percentage interests in the partnership.

2.8.4 Provide a **management chart** that lists the key personnel dedicated to this Plan and provide **biographies / resumes** of the key personnel, including position, years of relevant experience, and similar project experience. Provide specifics as they relate to the various elements of the Plan.

2.8.5 Provide a **listing and associated description of all grid service, capacity demand response or DER integration projects** the Proposer has successfully developed or that are currently under development. Describe the Proposer's role and responsibilities associated with these efforts (lead, owner, investor, etc.). Provide the following information as part of the response:

- Name of the project
- Location
- Service type, size and technology
- Delivery dates
- Contracting entity
- References with contact information: name, address, phone number, and relationship with the Proposer and with the related project.

2.9 STANDARDS OF CONDUCT

The GSPA allows Suppliers to implement its own standard of conduct consistent with the Company's principally concerning code of conduct. If a Supplier prefers to operate under its own Code of Conduct, it needs to be attached with the proposal submission. If a Supplier omits the submission of their code of conduct, it is assumed

they will adhere to the Company's code of conduct published here:
https://www.hawaiianelectric.com/Prebuilt/contractors/code_of_conduct.pdf.

2.10 PARTICIPANT SERVICE AGREEMENT

This RFP requires the submission of the Suppliers' Participant Service Agreement ("PSA") that the Respondent intends to use as a contract with its Participants. If the Respondent intends to use PSA's with different terms and conditions (e.g. different PSA's for different end devices), it must include all PSA's. The PSA's must comply with Exhibit N of the GSPA in Appendix L.

3.0 MINOR PROPOSAL VARIATIONS

Proposers submitting minor variations to a Proposal must provide **details of each variation in this section**. Include only details and specifications which differ from the Proposal in this section. For any item not listed in this Section 3.0, the Company will assume that the information contained in the Proposal applies to the minor variation as well.

3.1 PROPOSAL VARIATION 1 (IF MINOR VARIATION PROPOSED)

Identify all items which differ from the primary Proposal. Information must be organized in order of Appendix B and referenced by the corresponding Section Number.

3.2 PROPOSAL VARIATION 2 (AS NECESSARY)

Repeat instructions for Section 3.1, as required for each variation.

3.3 PROPOSAL VARIATION 3 (AS NECESSARY)

Repeat instructions for Section 3.1, as required for each variation.

REQUEST FOR PROPOSALS
FOR
GRID SERVICES FROM CUSTOMER-SITED ASSETS
ISLANDS OF O‘AHU, MAUI ^ HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix C – Code of Conduct Procedures
Manual*



**Hawaiian
Electric**

**HAWAIIAN ELECTRIC COMPANY, INC.
MAUI ELECTRIC COMPANY, LIMITED
HAWAII ELECTRIC LIGHT COMPANY, INC.**

Code of Conduct Procedures Manual

I. INTRODUCTION

By Order No. 36187 issued on February 27, 2019 in Docket No. 2017-0352, the Public Utilities Commission (“Commission”) directed the Company to file its draft expedited grid services request for proposals in Docket No. 2017-0352 for Commission review. Accordingly, unless otherwise directed by the Commission, the Company intends to apply the Framework for Competitive Bidding (“Framework”) adopted on December 8, 2006, by the Commission pursuant to Decision and Order No. 23121 (Docket No. 03-0372, Instituting a Proceeding to Investigate Competitive Bidding for New Generating Capacity in Hawaii) to its grid services aggregation request for proposals (“RFP”). For context, the Framework requires that the utility develop and follow a Code of Conduct whenever a utility or its affiliate seeks to advance an energy generation resource proposal in response to a request for proposals issued by the Company. Section III.A.4 of the Framework required the utility to submit to the Commission for review and approval (subject to modification if necessary) a Code of Conduct prior to the commencement of any competitive bid process under the Framework. On June 7, 2007, by letter to the Commission, the Company submitted its form of Code of Conduct for Commission review and approval. By Decision and Order No. 23614 (Docket No. 03-0372), issued August 28, 2007, the Commission approved the Code of Conduct. Amendments to the Code of Conduct were approved by the Commission for Stage 1 of the Companies’ 2018 Variable Request for Proposals by Order No. 35286, issued on February 20, 2018, in Docket No. 2017-0352. The Code of Conduct was revised to adapt it to the needs of the Company with respect to grid services aggregation procurement and submitted to the Commission under Docket No. 2017-0352 on April 1, 2019.

This Code of Conduct Procedures Manual (“Manual”) has been developed to outline the procedures to be followed and the policies that have been developed surrounding the implementation of the Companies’ competitive bidding process for new grid services aggregation. The Companies’ initial Code of Conduct Procedures Manual for Stage 1 of the Companies’ 2018 Variable Request for Proposals was approved by the Commission by Order No. 35286, issued February 20, 2018, in

Docket No. 2017-0352. This Code of Conduct Procedures Manual has been developed for the Companies' Grid Services from Customer-sited Assets Request for Proposals ("RFP" or "Grid Services RFP")¹ and in accordance with the requirements of Section IV.H.9.a(iii) of the Framework and outlines requirements (1), (3) and (4) of such section, namely: (1) the protocols for communicating with proposers, and others; (3) the documentation forms, including logs for any communications with proposers; and (4) other information consistent with the requirements of the solicitation process. Requirement (2) of the section, the evaluation process in detail and the methodologies for undertaking the evaluation process for the RFP are described in detail in Chapter 4 (Evaluation Process and Evaluation Criteria) of the Grid Services RFP. The bid evaluation process and methodology will consider both price/system impacts and non-price criteria in accordance with Section IV.E of the Framework

The procedures and policies set forth herein have been designed to ensure that the procurement process is undertaken in a fair and equitable manner and that each Proposer is afforded an equal opportunity to participate and compete within the RFP requirements.

This Code of Conduct Procedures Manual is intended to be followed by Company personnel in connection with implementing the Companies' solicitation process and to manage communications between Company personnel and consultants participating in the RFP processes covered by the Framework. Necessary additions, deletions, and/or changes depending on the circumstances surrounding the RFP and directions from the IO may be required.

II. DEFINITIONS

- Affiliate – An "affiliated interest" of the Company as defined in Hawaii Revised Statutes Section 269-19.5(a), specifically: (1) any person/entity holding 10% of

¹ The Variable Renewable Dispatchable Generation and Energy Storage Stage 2 Code of Conduct Procedures Manual has herein been modified to support a comparable Competitive Bidding Framework for the Company's solicitation of Grid Services aggregated from customer-sited assets.

more of the shares of the Company, (2) any person/entity holding 10% or more of the ownership interests of an entity holding 10% or more of the shares of the Company; (3) any corporation, 10% of which is owned by a person/entity holding 10% or more the shares of the Company; (4) any person who is an officer or director of the Company; (5) any corporation operating the Company, or providing engineering, accounting, legal, or similar service to the Company, which has 3 or more officers or 3 or more directors in common with the Company; and (6) any corporation which has directors in common with the Company where the number of common directors is more than one-third of the total number of the Company's directors. For the purposes of any RFP where an Affiliate of the Company is presenting a proposal in response to the RFP, such Affiliate and its proposal will be considered and evaluated in the same manner as any other independent Proposer.

- Affiliate Team – Affiliate personnel and outside consultants for the Affiliate responsible for the development of the Affiliate's response to the RFP.
- ATRs – The Affiliate Transaction Requirements issued by the Commission applicable to the Companies and Affiliates, attached as Exhibit 1 to Order No. 36112 issued on January 24, 2018 in Docket No. 2018-0065.
- Code of Conduct – A written code developed by Hawaiian Electric Company, Inc., Maui Electric Company, Limited and Hawaii Electric Light Company, Inc. (each, a "Company" and collectively, the "Companies") to ensure the fairness and integrity of the competitive bidding process, in particular where the host utility or its affiliate seeks to advance its own resource proposal in response to an RFP. The Code of Conduct follows the requirements described in Section IV.H.9.c of the Framework and was submitted to the Commission in in Docket No. 2017-0352 pursuant to Order No. 36187 issued on February 27, 2019 in said docket.
- Company Executive in Charge – A Company's executive responsible for ensuring compliance with this Code of Conduct and serving as the point of contact for the Independent Observer for reporting any violations by the Company of the Code of Conduct. For any RFP of the Companies for the procurement of grid services aggregated from customer-sited assets, the Company Executive in Charge shall be the Senior Vice President of Business Development and Strategic Planning. The

Company's Corporate Compliance Officer shall remain responsible for the Companies' independent corporate code of conduct and may support compliance matters and questions arising with employees, agents and other representatives of the Company, e.g., conflicts of interest, with respect to this Code of Conduct.

- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company's RFPs conducted under the Framework and the evaluation of bids submitted in response to these RFPs.
- Competitive Bidding Code of Conduct Acknowledgement of Receipt (Acknowledgement) – A document that must be signed that shows acknowledgement of receipt of the Code of Conduct and a person's responsibility to comply with the Code.
- Confidential Information – Any non-public information developed and provided by the Company (i.e., proprietary system information, etc.) or Proposers during the RFP process (such non-public information may include, for example, the identity of competing Proposers, and their technical, trade or financial information). This term includes any material non-public information regarding the RFP process developed for and used during the competitive bidding solicitation process, such as the evaluation process or criteria. Confidential Information does not include public information, such as information in the Companies' public filings with the Commission.
- Director of Renewable Acquisition Division – The supervisor of the Renewable Acquisition Division that will oversee the Company's competitive bidding process for the procurement of grid services aggregated from customer-sited assets.
- Eligible Proposer – A Proposer who has met the minimum requirements and threshold requirements in the RFP necessary to remain eligible to compete in the process.
- Grid Services Contract Manager – The staff position(s) within the Company's Demand Response Division responsible for managing the RFP.
- Framework – The Framework for Competitive Bidding contained in Decision & Order No. 23121 issued by Commission on December 8, 2006, to establish rules for competitive bidding in response to a request for proposals when a utility seeks to acquire new generation resources.

- Independent Observer (“IO”) – The neutral person or entity retained to monitor the utility’s competitive bidding process, and to advise the utility and Commission on matters arising out of the competitive bidding process, as described in Part III.C of the Framework.
- Manager of DR Programs - The supervisor of the area within the Demand Response Division responsible for directing the resources responsible for the implementation of the competitive bidding process pursuant to the Framework. The Manager of DR Programs will report to the Director of Demand Response on the status of the competitive bidding process and shall be a member of the Company RFP Team.
- Proposer – Entity who submits or plans to submit a proposal in response to a Company-issued RFP. An Affiliate of the Company submitting a proposal shall be considered a Proposer.
- RFP or Grid Services RFP – A written request for proposals issued by one of the Companies to publicly solicit bids for the aggregation of grid services from customer-sited assets for the Company’s use pursuant to the competitive bidding process established in the Framework.
- Roster – A consolidated list of members that comprise the Company RFP Team, located in the RFP Communication Tool Kit SharePoint Site. Company employee names and titles and consultants in their designated role will be identified.

III. STATEMENT OF OBJECTIVES

From time to time, each of the Companies will be proposing to seek proposals for the delivery of various aggregated grid services that best meet the needs of the respective Company’s system. The timing for issuance of RFPs for each of the systems will be dependent upon the Commission’s approval of the associated resource plan and the necessary competitive bidding procedures identified in the Framework and upon the timing of the need for such grid services for each island. Each of the Companies will undertake a detailed multi-stage review and evaluation process whereby eligible proposals will be selected based upon their ability to most cost-effectively and reliably satisfy the requesting Company’s requirements. While cost minimization is a major criterion, the Companies’ objective is to select those aggregators which, in their opinion, represent the best value to the Companies and their customers regarding economic and technical

attributes, limited risk, and flexibility for meeting their projected requirements. The individual RFPs seeking resources, including those seeking the delivery of grid services, are part of the Companies' overall renewable resource procurement plan, which is based on the Companies' ongoing long range planning, but also may be revised on short notice in order to address unforeseen events such as premature equipment failures or natural events. With each successive RFP, the Companies are not only seeking to support the procurement of additional renewable energy that is required to meet the RPS goals, but also continually building off results of previous RFPs to continue to meet the above objective.

The needs for each island system vary, and therefore the timing and schedule of the RFPs cannot be consistently coordinated. Multiple RFPs will likely be active at the same time. Furthermore, because the Companies must work expeditiously, successive RFPs will consider previous procurements and build on appropriate aspects of prior successful RFP execution plans. Therefore, in order to consistently ensure the competitive benefits of the procurement process while continuing to provide equitable and fair consideration for all proposals, the Companies will designate and maintain a fixed Roster. Subject to the transfer rules specified herein, the Roster will be maintained for durations of the procurement plans until the RPS goals are reached for each island and will not be terminated at the conclusion of each individual RFP. The Companies also intend that the evaluation process will be well-documented so that the results of the evaluation can be fully reviewed by an IO to confirm that all proposals were treated in a fair and consistent manner.

The Code of Conduct and this Manual address communication requirements and procedures associated with the relationship between the Company RFP Team and Proposers, with the express affirmation that a bid from an Affiliate and any communication with an Affiliate will be treated in the same manner as any other bid or communication from an independent third-party bidder.

IV. ORGANIZATION AND COMMUNICATION RESPONSIBILITIES

A. Essential Teams

1. Company RFP Team. The Company RFP Team, tasked with preparing the RFP and evaluating the responses and bids in response to the RFP, will consist primarily of Director/Manager-level and other experienced employees together with possible outside consultants, with backgrounds in a number of disciplines necessary to conduct a thorough evaluation of each proposal. The members of the team will be prepared to evaluate proposals on the basis of their price and non-price aspects pertaining to their level of expertise. Members of the Company RFP Team will include professionals with experience in the following areas of expertise: engineering, information technology and operational technology systems, transmission planning, fuel procurement, legal, financial planning, system operations, integrated resource planning, generation planning, production cost analysis, and others as needed.

Price and non-price sub-teams will conduct their sections of the bid evaluation process separately and will not share the results of their evaluation with members of the other sub-team. Each team will submit their evaluation results to an oversight team, which will be responsible for compiling the results of the evaluations and selecting the short-list.

The Manager of DR Programs will be responsible for directing the evaluation efforts of the Company RFP Team when the proposals are received. The Manager of DR Programs will be responsible for maintaining the documentation underlying the evaluation of each proposal as well as all communications with proposers.

B. Communications Protocols

1. Overview and General Requirements.

The Company has developed policies and procedures governing communication between the Company RFP Team, the Proposers, the IO, and with the Commission regarding RFP design and bid evaluation. Bid information and evaluation data and information shall not be communicated between members of the Company RFP Team, outside parties and other employees within the Companies except to those with a business need to know.

To ensure that the competitive bidding process is fair and unbiased, that all Proposers have access to the same information so that no Proposer has an unfair advantage, and that any Affiliate proposals do not have any unfair competitive advantage over third-party bids, the Companies shall follow the Code of Conduct whenever the utility or its Affiliate is seeking to advance a resource proposal as provided in Section IV.H.9.b of the Framework.

Each employee or consultant on the Company RFP Team, shall read, acknowledge and sign a Competitive Bidding Code of Conduct Acknowledgement of Receipt.

The Company issuing the RFP will establish a shared drive on its corporate computer network designed to maintain the bid evaluation documentation and other information associated with the bidding process. Only Company RFP Team members will have access to all the files on the shared drive.

2. Communications Between the Company RFP Team and Proposers.

During the RFP process, the Manager of DR Programs shall serve as the primary contact person for all RFP communications with Proposers. This is important from the standpoint of maintaining consistency and confidentiality of information between Proposers and the Company. For documentation and oversight purposes, all communications from Proposers must be submitted to an established website link provided by the Company (the "Company RFP website"). The IO will monitor all

communications through the Company RFP website. To ensure fair and equal access to information, any Affiliate Team shall be considered a Proposer for communication purposes and any request for information from the Affiliate Team to the Company RFP Team shall be through the Company RFP website.

Subject to confidentiality obligations, it is the objective of the Code of Conduct that all Proposers, receive access to information released by the Company RFP Team, whether in response to a question from a Proposer or not, at the same time.

The communications process for addressing questions and requests for information from Proposers, and for the Company RFP Team to provide information to Proposers, is provided below:

- a. Other than during Company sponsored conferences, Proposers must submit all questions to the Company RFP website or the designated RFP email address (if the Company RFP website has not been opened yet for the RFP).
- b. Questions will be reviewed and responses will be coordinated with the appropriate functional area within the Company for a response. Every reasonable effort will be made to provide responses in a timely manner.
- c. All responses, including the classification of such response, i.e., whether non-confidential or confidential as described below, will be made available to the IO for monitoring purposes. The IO may choose to comment on any response at its discretion.
- d. Depending on the questions received, responses may involve Confidential Information of the Company and/or Proposers. Release of any Company Confidential Information must be approved in advance by the Company Executive authorized to

release the Confidential Information. Any release of Company Confidential Information shall be accompanied by appropriate confidentiality and non-disclosure agreements, protective orders or other means required to maintain the confidentiality of the Company Confidential Information while still permitting its disclosure under circumstances deemed appropriate by the responsible Company Executive. Other non-Company Confidential Information will not be shared without the prior written consent of the owner of such Confidential Information and the execution of appropriate confidentiality and non-disclosure agreements by all recipients of such Confidential Information. Responses will be categorized as follows:

- i. Non-Confidential Responses: Questions and responses will either be posted directly on the Company RFP website (process-related questions or simple, non-substantive information) or a description of the information that can be made available will be posted and Proposers will be instructed to submit a request to the Company via the Company RFP website to receive a copy.

- ii. Confidential Responses: Questions and a description or notice of a Confidential Information response will be posted on the Company RFP website and Proposers will be instructed to submit a request to the Company via the Company RFP website to receive instructions on how to access the Confidential Information. The Confidential Information will only be provided to the requestor after receipt of an executed confidentiality and non-disclosure agreement. Only those who have qualified to submit a bid (i.e., Eligible Proposers) and have executed a confidentiality and non-disclosure agreement will be considered for receipt of Confidential Information.

- iii. Process for Distribution of Confidential Information
Confidential Information provided in response to questions from proposers may be made available only to parties as indicated above via the following:
- iv. Confidential Information that is approved for exchanging on a secured access site: (1) Confidential Information may be made available on a secured website with an individual password provided to each approved Proposer; (2) Confidential Information in documents may be transmitted to approved recipients through the Company's secure email system.
- v. Confidential Information that can be made available for inspection only, but cannot be copied: There may be some types of Confidential Information that the Company may consider making available for inspection only with no copies allowed. This type of Confidential Information will be made available on Company premises for inspection only. Proposers will be advised via the Company RFP website to make arrangements with Company staff to view the Confidential Information.
- vi. Confidential Information that may not be released. In the event that Proposers submit questions that require responses that the Company feels are not appropriate to provide for reasons which may include, but not be limited to, safety, security, protection of trade secrets or intellectual property rights, Proposers will be advised as such via the Company RFP website.
- e. Prior to and during the RFP, and outside of the Company RFP website protocol, developers may direct questions to the Company prior to submitting a Proposal to discuss specific questions

regarding their specific Proposal. Questions shall be directed to the Company Contact for Proposals listed in RFP Section 1.7.

- f. Once bids are received, the Company may submit information requests to Proposers to clarify their proposals or request additional information. All contacts with Proposers will be through the Company RFP website. All contacts and information exchanged will be under the oversight of the IO.

3. Communications Between the Companies and the Commission.

The Company's Regulatory Affairs staff will be responsible for initiating communication with the Commission regarding the RFP or the Companies' evaluation process. Regular updates may be provided to the Commission regarding the RFP process if requested.

4. Communications Between the Company RFP Team and the IO.

Communications between the RFP Team and the IO will be required for many aspects of the evaluation process. The IO is also required to maintain confidentiality of any Company or Proposer Confidential Information. The IO will coordinate all activities through the Manager of DR Programs. The IO will be invited to participate in any meetings or discussions between the RFP Team and the Proposers and other communications as noted above. Sufficient notice will be provided whenever possible and teleconference and/or web conference alternatives may be utilized.

5. Communications between the Company RFP Team, and any non-Company RFP Team Company personnel or consultants

There may be times where a Company RFP Team may need ancillary or other ministerial or administrative assistance that requires communication and/or assistance from Company personnel who are not on the Company RFP team or consultants. Under those circumstances, such personnel may assist the requesting team member on an ad hoc basis upon the following conditions:

- a. The essential team member making the request must inform the Company personnel that sharing of the requested information or assistance with the Affiliate team is expressly prohibited under the Code of Conduct.
- b. The assisting Company personnel shall complete the Code of Conduct training and sign the Code of Conduct Acknowledgement form.
- c. The assisting Company personnel shall be directed to the Roster provided by such requesting team member to determine and/or confirm the restrictions on communication with the other team members. The essential team member making the request will ensure the Roster is updated by the Manager of DR Programs to include the assisting Company personnel.
- d. A written record of the time, date and substance of all conversations, data and written material directly or indirectly exchanged with the Company RFP Team, that pertain to the RFP shall be maintained on the Communications Log. A SharePoint-based interface will be set up and managed by the Manager of DR Programs to provide an easy to use and understand mechanism to log and memorialize these conversations.

V. WHEN THE CODE OF CONDUCT BECOMES EFFECTIVE

A. No later than 30 days after the Commission opens the docket to issue an RFP covered by the Framework, the Code of Conduct for that RFP will be activated.

B. Upon the activation of the Code of Conduct, members of the Company RFP Team must then conduct activities on the RFP in compliance with the Code of Conduct. Once identified and having commenced work, no information may be shared outside the respective team members with respect to the RFP except through the formal communication processes outlined above.

C. Immediately upon assignment to the Company RFP team, each such employee or consultant must review this Manual, and sign the Code of Conduct acknowledgement form. Annually, each member of the RFP team shall reaffirm their obligations to comply with the Code of Conduct and this Procedures Manual by executing an annual update to the Code of Conduct acknowledgement form.

E. Each employee and consultant working on the RFP shall review the Code of Conduct and sign an acknowledgement attesting to his/her compliance with the Code of Conduct for each subsequent year until the Code of Conduct is terminated, or until the employee is no longer working in the position he/she was in while working on the RFP.

F. The Manager of DR Programs will be responsible for maintaining the Code of Conduct roster and the signed "Acknowledgement of Code of Conduct" letters. The Company Executive in Charge shall be responsible for ensuring compliance with the Code of Conduct and shall have the written authority and obligation to enforce the Code of Conduct.

VI. IMMEDIATE ACTIONS UPON ACTIVATION OF THE CODE OF CONDUCT

The following items are required to be completed as soon as possible after activation of the Code of Conduct, but no later than the designated events specified for each item below.

A. No later than 30 days after the opening of the docket commencing an RFP, a roster listing employee (with their title) and consultants in their Company RFP Team designated role; Company RFP Team. When the IO is appointed, this roster shall be provided to him/her. The roster shall be placed in an accessible database (such as the Company's SharePoint database) so that any Company personnel can access the database to determine the identity of the RFP team.

B. Upon the finalization of the roster for the RFP, the Manager of DR Programs shall verify that all employees (whether full-time, part-time, temporary, or contract) and consultants involved in the competitive bidding process, such as members of the Company RFP Team, have acknowledged receipt of the Code of Conduct and his or her responsibility to comply with the Code of Conduct by submitting an "Acknowledgement of Code of Conduct" (with electronic acknowledgment being acceptable) form. If an employee or consultant is added to a team, the Manager of DR Programs shall also verify that such employee or consultant has submitted an "Acknowledgment of Code of Conduct".

C. No later than 30 days after the opening of the docket commencing an RFP, establishment of the Company email address to accept requests for information from Proposers, or any Affiliate Team.

D. No later than 30 days after the opening of the docket commencing an RFP, establishment of the Company secured site that houses the accessible database (such as SharePoint).

VII. WHEN THE CODE OF CONDUCT TERMINATES

The Code of Conduct for a specific RFP will terminate when:

A. The final contract(s) for RFPs conducted under the Framework with the successful proposer(s) is/are executed, or when written notice of termination of the RFPs to be conducted under the Framework is provided by the Director of Demand Response or his/her designee to the IO and the Commission; and

B. A certification of Code of Conduct compliance by all employees participating in the specific RFP process is submitted by affidavit by the Company Executive in Charge.

VIII. DOCUMENTATION FORMS

The following documentation forms may be utilized by those Company personnel involved in the RFP. These forms may be amended from time to time as necessary. Additional forms may also be developed as determined necessary.

- Code of Conduct Acknowledgement Form
- Roster

REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix D – PowerAdvocate User Information



**Hawaiian
Electric**



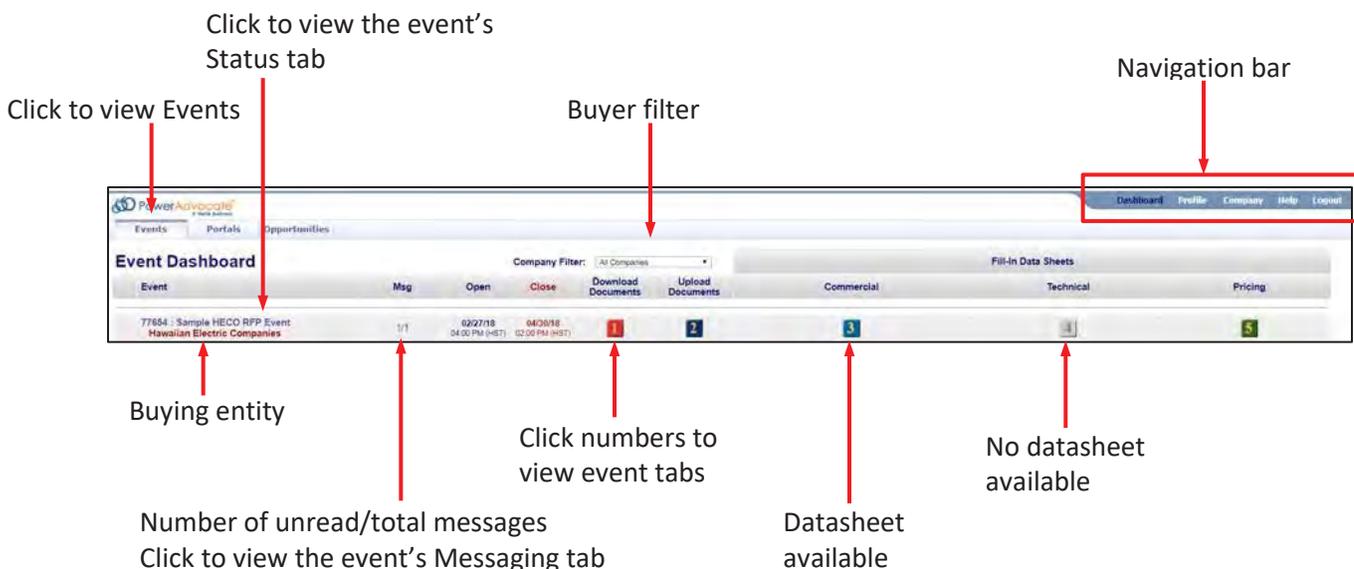
Sourcing Intelligence Quick Start for Suppliers

Logging In

1. Launch a web browser and go to www.poweradvocate.com
2. Click the orange **Login** button.
3. Enter your account **User Name** and **Password** (both are case-sensitive) and click **Login**.
4. Click the **Events** tab if it is not already displayed.

Dashboard

Your Dashboard lists the events you have been invited to. A line divides currently accessible events from others.



- Click an event name to view its Status tab, which displays a summary of your activity and key event dates. To view specific details of an event, click the buttons 1-5 to view the corresponding tab.
- To return to the Dashboard, click **Dashboard** in the navigation bar at the top of the window.
- An event will not appear on your Dashboard until you have been added as a participant.



Downloading Bid Packages

All of the Buyer’s bid package documents (if any) are centrally stored on the PowerAdvocate Platform. To view bid documents, click “1” on your Dashboard or on the **1. Download Documents** tab from within the event.



- You can access the **Bid** sub-tab after the event opens. You can access Buyer documents before the event is opened from the **Pre-Bid** sub-tab, if the Buyer utilizes this feature.
- To view or download a document, click the file name.
- To download multiple documents:
 1. Select the checkbox in the Download column for each document you wish to download or click **Select All**.
 2. Click **Download Selected Files**.

Uploading Documents

To upload your documents, click “2” on your Dashboard, or on the **2. Upload Documents** tab from within the event.



- Do not upload any files to the Pre-Bid tab.
- To upload a document to the Bid tab:
 1. Specify a **Document Type** (Reference ID can be left blank).
 2. Click **Choose File**, navigate to and select the document, and then click Open; multiple files can also be compressed into one .zip file for upload.
 3. Click **Submit Document**.



Datasheets

Datasheets will not be used in this RFP event. All Proposal information will be uploaded for submission through the 2. Upload Documents tab above. Buttons/tabs are grayed out (e.g., 4) if the event is not using a particular type of datasheet.

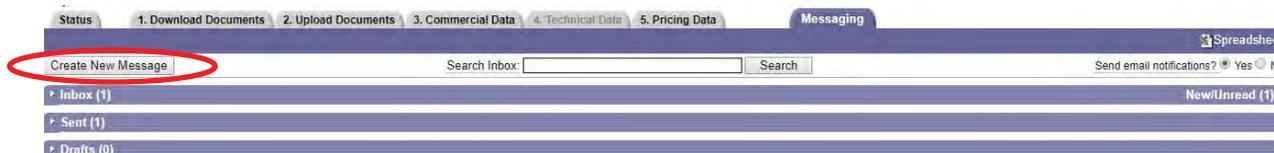


Communicating with the Bid Event Coordinator /Company Contact

Suppliers should use the PowerAdvocate Messaging tool to contact the Bid Event Coordinator (BEC) while the bid event is open.

PowerAdvocate Messaging

To send a message to the BEC, go to the **Messaging** tab and click **Create New Message**. To read or reply to a message from the BEC, click the message subject.



- You can send messages to the BEC and Buyer Team
- The Independent Observer can view all messages in the bid event.
- You can receive external e-mail notification of new PowerAdvocate messages by selecting “Yes” to “Send email notifications?” in the Messaging tab.

Getting More Information

- Click **Help** on the navigation bar to display online help.



- Supplier documentation can be downloaded from the online help system.
- Call PowerAdvocate Support at 857-453-5800 (Mon-Fri, 8 a.m. to 8 p.m. Eastern Time) or e-mail support@poweradvocate.com.

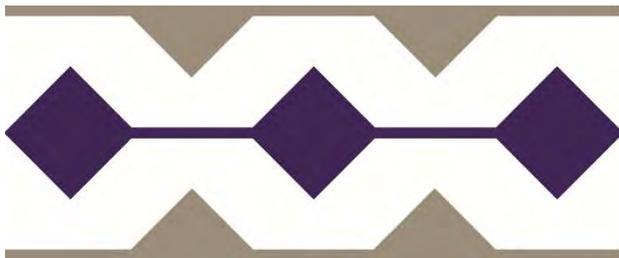
FINAL DRAFT REQUEST FOR PROPOSALS
FOR
DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix E – Mutual Confidentiality and Non-
Disclosure Agreement*



**Hawaiian
Electric**

MUTUAL CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT
Request for Proposal - ("RFP")

This Mutual Confidentiality and Non-Disclosure Agreement (this "Agreement") is effective as of _____, 20____ (the "Effective Date") between [INSERT NAME OF Bidder] ("Bidder") and [SELECT ONE OR ALL: Hawaiian Electric Company, Inc./Maui Electric Company, Limited/Hawai'i Electric Light Company, Inc.] (the "Company") [Note – if selecting all companies, change the defined term (the "Company") to (the "Companies") and replace all references in this document to the "Company" to the "Companies"], a Hawai'i corporation ("Company"). In consideration of the mutual promises contained in this Agreement, including the provision of Confidential Information (as defined below) by either party to the other hereunder, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Background

The Company has issued a Request for Proposals (number _____) dated _____ ("RFP") for [describe project: _____] (the "Project"). The Bidder has or intends to submit a proposal in response to the RFP (the "Proposal"). This Agreement supplements the RFP and is intended to be read and construed in harmony with and in support of the RFP. Terms in the RFP relating to confidentiality remain in full force and effect. As part of the RFP process and in considering the Proposal, the Company and the Bidder may disclose to each other certain Confidential Information. The parties are willing to provide such Confidential Information upon the terms and conditions of this Agreement.

2. Confidential Information

Except as set forth in Section 3 (Exclusions from Confidential Information) below, "Confidential Information" means all non-public, proprietary or confidential information disclosed by either party (the "Provider") to the other party (a "Recipient"), its affiliates and its and their directors, officers, employees, agents, advisors, consultants (including, without limitation, financial advisors, counsel and accountants) and controlling entities or individuals (collectively, "Representatives") whether disclosed orally or disclosed or accessed in written, electronic or other form of media, and whether or not marked or otherwise identified as "confidential," including, without limitation:

(a) all information concerning the Provider and its affiliates', and their customers', suppliers' and other third parties' past, present and future business affairs including, without limitation, finances, customer information, supplier information, products, services, designs, processes, organizational structure and internal practices, forecasts, sales and other financial results, records and budgets, business, marketing, development, sales and other commercial information and strategies;

(b) information concerning the Company's generation, transmission, and distribution systems (e.g., engineering and operating characteristics of the Company's transmission lines and substations) ("Critical Infrastructure Confidential Information").

(c) the Provider's unpatented inventions (whether or not they are patentable), ideas, methods and discoveries, techniques, formulations, development plans, trade secrets, know-how, unpublished patent applications and other confidential intellectual property;

(d) all designs, specifications, documentation, components, source code, object code, images, icons, audiovisual components and objects, schematics, drawings, protocols, processes, and other visual depictions, in whole or in part, of any of the foregoing;

(e) any third-party confidential information included with, or incorporated in, any information provided by the Provider to the Recipient or its Representatives; and

(f) all notes, analyses, compilations, reports, forecasts, studies, samples, data, statistics, summaries, interpretations and other materials ("Notes") prepared by or for the Provider or its Representatives that contain, are based on, or otherwise reflect or are derived from, in whole or in part, any of the foregoing.

3. Exclusions from Confidential Information

Except as required by applicable federal, state, or local law or regulation, the term "Confidential Information" as used in this Agreement shall not include information that:

(a) at the time of disclosure is, or thereafter becomes, generally available to and known by the public other than as a result of, directly or indirectly, any violation of this Agreement by the Recipient or any of its Representatives; provided, however, that Confidential Information shall not be disqualified as Confidential Information (i) merely because it is embraced by more general or generic information which is in the public domain or available from a third party, or (ii) if it can only be reconstructed from information taken from multiple sources, none of which individually shows the whole combination (with matching degrees of specificity);

(b) at the time of disclosure is, or thereafter becomes, available to the Recipient on a non-confidential basis from a third-party source, provided that such third party is not and was not prohibited from disclosing such Confidential Information to the Recipient by a contractual or other obligation to the Provider;

(c) was known by or in the possession of the Recipient or its Representatives, as established by documentary evidence, prior to being disclosed by or on behalf of the Provider pursuant to this Agreement;

(d) was or is independently developed by the Recipient, as established by documentary evidence, without reference to or use of, in whole or in part, any of the Provider's Confidential Information; or

(e) was or is learned or established entirely from public sources, as established by documentary evidence, without reference to or use of, in whole or in part, any of the Provider's Confidential Information.

The parties acknowledge and understand that the confidentiality obligations of this Agreement apply only to the Confidential Information shared in connection with the Project. The parties may share other information with each other under other agreements, provisions or understandings which are not related to the Project. Such information sharing shall be subject to the provisions of the agreements and confidentiality provisions associated thereto and this Agreement shall not be construed to infringe upon or apply to such agreements or provisions.

4. Non-Disclosure of Confidential Information

Unless otherwise agreed to in writing by the Provider, the Recipient agrees as follows:

(a) except as required by law, not to disclose or reveal any Confidential Information to any person or entity other than its Representatives who are actively and directly participating in the evaluation of the Project or who otherwise need to know the Confidential Information for the purpose of evaluating the Project.

(b) not to use Confidential Information for any purpose other than in connection with its evaluation of the Project or the consummation of the Project.

(c) except as required by law, not to disclose to any person or entity (other than those of its Representatives who are actively and directly participating in the evaluation of the Project or who otherwise need to know for the purpose of evaluating the Project) any information about the Project, or the terms or conditions or any other facts relating thereto, including, without limitation, the fact that discussions are taking place with respect thereto or the status thereof, or the fact that Confidential Information has been made available to the Recipient or its Representatives.

(d) to use diligent efforts to safeguard and protect the confidentiality of the Confidential Information, including, at minimum, implementing the same commercial measures that the Recipient uses to protect its own confidential information. Before disclosing the Confidential Information to any Representative, the Recipient will inform such Representative of the confidential nature of such information, their duty to treat the Confidential Information in accordance with this Agreement and shall ensure that such Representative is legally bound by the terms and conditions of this Agreement or subject to confidentiality duties or obligations to the Recipient that are no less restrictive than the terms and conditions of this Agreement.

(e) Any provision herein to the contrary notwithstanding, the Company may disclose Confidential Information to the State of Hawai'i Public Utilities Commission ("Commission") and/or the State of Hawai'i Division of Consumer Advocacy (including their respective staffs) provided that such disclosure is made under a protective order entered in the docket or proceeding with respect to which the disclosure will be made or any general protective order entered by the Commission.

5. Required Disclosure and Notice

If the parties or any of their Representatives become legally compelled (by deposition, interrogatory, request for documents, subpoena, civil investigative demand, court order, or similar process) to disclose any of the Confidential Information, the compelled party shall undertake reasonable efforts to provide the other party with notice within three (3) business days of such requirement or advice prior to disclosure so that the other party may (a) seek a protective order or other appropriate remedy, (b) consult with the other party with respect to the compelled party taking steps to resist or narrow the scope of such requirement or advice, and/or (c) waive compliance, in whole or in part, with the terms of this Agreement. If such protective order or other remedy is not obtained, or the other party waives compliance with the provisions hereof, the compelled party agrees to furnish only that portion of the Confidential Information which it is legally required to so furnish and, at the request of the other party, to use reasonable efforts to obtain assurance that confidential treatment will be accorded such Confidential Information, it being understood that such reasonable efforts shall be at the cost and expense of the party whose Confidential Information has been sought. In any event, neither the Bidder nor any of its Representatives will oppose action by the Company to obtain an appropriate protective order or other reliable assurance that confidential treatment will be accorded the Confidential Information.

6. Return or Destruction of Confidential Information

At any time during or after the term of this Agreement, at the Provider's written request, and in any event, upon the termination of the Agreement, the Recipient shall certify within ten (10) business days that it has destroyed all Confidential Information by using industry standard data elimination methods used to prevent unauthorized disclosure of information, and for Personally Identifiable Information (defined as personally identifiable information of individuals, and any information that may be used to track, locate or identify such individuals (or which is otherwise protected by privacy laws), including any automatically generated information (such as IP addresses and other customer identifiers) that identifies or is unique or traceable to a particular individual or computer or other electronic device capable of accessing the internet, including without limitation, name, address, telephone number, social security number, credit card account numbers, email addresses, user identification numbers or names and passwords, which is disclosed to the Recipient or its subcontractors in connection with this Agreement by the Provider, which products and services are used or intended to be used for personal, family or household purposes), such methods shall be consistent with Hawai'i Revised Statute 487-R; provided, however, that with respect to Confidential information in tangible form, the Recipient may return such Confidential Information to the Provider within ten (10) business days in lieu of

destruction. The Recipient's sole obligation with respect to the disposition of any Notes shall be to redact or otherwise expunge all such Confidential Information from such Notes and certify to the Provider that it has so redacted or expunged the Confidential Information. Notwithstanding the foregoing, with respect to any Confidential Information stored in Recipients disaster recovery backups or other electronic archives, Recipient is not required to destroy such Confidential Information if it would impose a material cost or burden; provided, however, such Confidential Information shall be destroyed when such archives are destroyed in accordance with Recipients records retention policies.

7. Authority

Each party represents and warrants that it has full power and authority to enter into and perform this Agreement, and the person signing this Agreement on behalf of each has been properly authorized and empowered to enter into this Agreement, understands it and agrees to be bound by it.

8. No Representations or Warranties

Neither the Provider nor any of its Representatives make any express or implied representation or warranty as to the accuracy or completeness of any Confidential Information disclosed to the Recipient hereunder, and the Recipient agrees that it is not entitled to rely on the accuracy or completeness of any Confidential Information. Neither the Provider nor any of its Representatives shall be liable to the Recipient or any of its Representatives relating to or arising from the use of any Confidential Information or for any errors therein or omissions therefrom. Notwithstanding the foregoing, the Recipient shall be entitled to rely solely on such representations and warranties regarding Confidential Information as may be made to it in any final agreement relating to the Project, subject to the terms and conditions of such agreement.

9. No Other Obligations

Neither this Agreement nor the disclosure of the Confidential Information shall result in any obligation on the part of either party to enter into any further agreement with the other with respect to the subject matter hereof or otherwise, to purchase any products or services from the other, or to require either party to disclose any further information to the other. Nothing in this Agreement shall be deemed to constitute either party hereto as partner, agent or representative of the other party or to create any fiduciary relationship between the parties. Either party may offer products or services which are competitive with products or services now offered or which may be offered by the other. Subject to the express terms and conditions of this Agreement, neither this Agreement nor discussions and/or communications between the parties will impair the right of either party to develop, make, use, procure, and/or market any products or services, alone or with others, now or in the future, including those which may be competitive with those offered by the other. Whether or not the Project is consummated, neither party shall issue a press release or release any information to the general public concerning such transaction or the absence thereof without the express prior written consent of the other, and the parties agree that neither party will use the other's name whether by including reference to the other in any press release,

list of customers advertising that its services are used by Company or otherwise, without written authorization by the respective party's authorized representative.

10. Property Rights in Confidential Information

All Confidential Information shall remain the sole and exclusive property of the Provider and nothing in this Agreement, or any course of conduct between the parties shall be deemed to grant to the Recipient any license or rights in or to the Confidential Information of the Provider, or any part thereof. Unless otherwise expressly agreed in a separate license agreement, the disclosure of Confidential Information to the Recipient will not be deemed to constitute a grant, by implication or otherwise, of a right or license to the Confidential Information or in any patents or patent applications of the Provider.

11. Publicly Traded Company

The Bidder acknowledges that the Company's holding company is a publicly traded company, and that Confidential Information of the Company may constitute material, non-public information with respect to the Company. The Bidder understands, and will advise its Representatives to whom Confidential Information of the Company is disclosed, of the restrictions imposed by the United States securities laws on (a) the purchase or sale of securities by any person in possession of material, non-public information with respect to such securities, and (b) the communication of material, non-public information with respect to securities to a person who may purchase or sell such securities in reliance upon such information.

12. Remedies

(a) Each party acknowledges and agrees that any breach or threatened breach of this Agreement may give rise to an irreparable injury to the Provider or its Representatives, for which compensation in damages is likely to be an inadequate remedy. Accordingly, in the event of any breach or threatened breach of this Agreement by the Recipient or its Representatives, the Provider shall be entitled to seek equitable relief, including in the form of injunctions and orders for specific performance, in addition to all other remedies available at law or in equity.

(b) In the event that the Recipient learns of dissemination, disclosure, or use of the Confidential Information which is not permitted by this Agreement, the Recipient shall notify the Provider immediately in writing and shall use reasonable efforts to assist the Provider in minimizing damages from such disclosure. Such remedy shall be in addition to, and not in lieu of, any other rights or remedies available to the Provider at law or in equity.

13. Cumulative Remedies

No rights or remedy herein conferred upon or reserved to either party hereunder is intended to be exclusive of any other right or remedy, and each and every right and remedy shall be cumulative and in addition to any other right or remedy under this Agreement, or under applicable law, whether now or hereafter existing.

14. Notice

(a) By delivering written notice, either party may notify the other that it no longer wishes to receive or provide Confidential Information. Any further information received or provided by the party who received such notice following receipt of such notice, shall not be subject to the protection of this Agreement.

(b) All notices, consents and waivers under this Agreement shall be in writing and will be deemed to have been duly given when (i) delivered by hand, (ii) sent by electronic mail ("E-mail") (provided receipt thereof is confirmed via E-mail or in writing by recipient), (iii) sent by certified mail, return receipt requested, or (iv) when received by the addressee, if sent by a nationally recognized overnight delivery service (receipt requested), in each case to the appropriate addresses and E-mail Addresses set forth below (or to such other addresses and E-mail addresses as a party may designate by notice to the other party):

(1) Company:

By Mail:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc., Maui Electric Company, Limited]
P.O. Box 2750
Honolulu, Hawai'i 96840
Attn: **[TITLE, DEPARTMENT]**

Delivered By Hand or Overnight Delivery:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc., Maui Electric Company, Limited]
[STREET ADDRESS]
[City, State, Zip Code]
Attn: **[TITLE, DEPARTMENT]**

By E-mail:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc., Maui Electric Company, Limited]
Attn: **[TITLE, DEPARTMENT]**
Email: _____

With a copy to:

By Mail:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric
Light Company, Inc., Maui Electric Company, Limited]
Legal Department
P.O. Box 2750
Honolulu, Hawai'i 96840

Delivered By Hand or Overnight Delivery:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric
Light Company, Inc., Maui Electric Company, Limited]
American Savings Bank Tower
1001 Bishop Street, Suite 1100
Honolulu, Hawai'i 96813
Attn: Legal Department

By E-mail:

[Choose: Hawaiian Electric Company, Inc., Hawai'i Electric
Light Company, Inc., Maui Electric Company, Limited]
Legal Department
Email: legalnotices@hawaiianelectric.com

(2) [Purchaser][Vendor][Supplier]

By Mail:

[INSERT ADDRESS/CONTACT]

Delivered By Hand or Overnight Delivery:

[INSERT ADDRESS/CONTACT]

By E-mail:

[INSERT ADDRESS/CONTACT]

With a copy to:

By Mail:

[INSERT ADDRESS/CONTACT]

Delivered By Hand or Overnight Delivery:

[INSERT ADDRESS/CONTACT]

By E-mail:

[INSERT ADDRESS/CONTACT]

15. No Waiver

Except as otherwise provided in this Agreement, no delay or forbearance of a party in the exercise of any remedy or right will constitute a waiver thereof, and the exercise or partial exercise of a remedy or right shall not preclude further exercise of the same or any other remedy or right.

16. Governing Law

This Agreement is made under, governed by, construed and enforced in accordance with, the laws of the State of Hawai'i. Any action brought with respect to the matters contained in this Agreement shall be brought in the federal or state courts located in the State of Hawai'i. Each party agrees and irrevocably consents to the exercise of personal jurisdiction over each of the parties by such courts and waives any right to plead, claim or allege that the State of Hawai'i is an inconvenient forum or improper venue. Notwithstanding the foregoing, Company, at its option, may elect to submit any such dispute to binding arbitration pursuant to the commercial arbitration rules of Dispute Prevention & Resolution, Inc. or the American Arbitration Association then in effect in which case the parties agree that any alternative dispute resolution shall take place in the State of Hawai'i.

17. Attorneys' Fees and Costs

If there is a dispute between the parties and either party institutes a lawsuit, arbitration, mediation or other proceeding to enforce, declare, or interpret the terms of this Agreement, then the prevailing party in such proceeding shall be awarded its reasonable attorneys' fees and costs.

18. Assignment Prohibited

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors, legal representatives, and permitted assigns. Neither party shall have the right to assign any of its rights, duties or obligations under this Agreement, by operation of law or otherwise, without the prior written consent of the other party. Any purported assignment in violation of this section shall be null and void.

19. No Third Party Beneficiaries

Nothing expressed or referred to in this Agreement will be construed to give any person or entity other than the parties any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this Agreement. This Agreement and all of its provisions and conditions are for the sole and exclusive benefit of the parties and their successors and permitted assigns.

20. Entire Agreement

This Agreement constitutes the entire agreement between the parties relating to the subject matter hereof, superseding all prior and contemporaneous agreements, understandings or undertakings, oral or written with respect to the subject matter. Any amendment or modification of this Agreement or any part hereof shall not be valid unless in writing and signed by the parties. Any waiver hereunder shall not be valid unless in writing and signed via by the party against whom waiver is asserted.

21. Further Assurances

If either party determines in its reasonable discretion that any further instruments, assurances or other things are necessary or desirable to carry out the terms of this Agreement, the other party will execute and deliver all such instruments and assurances and do all things reasonably necessary or desirable to carry out the terms of this Agreement.

22. Term and Survival

This Agreement shall remain in full force and effect for a period of two (2) years from the Effective Date. All confidentiality obligations within this agreement shall survive following expiration or termination of this Agreement.

23. Severability

If any term or provision of this Agreement, or the application thereof to any person, entity or circumstances is to any extent invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law, and the parties will take all commercially reasonable steps, including modification of the Agreement, to preserve the economic "benefit of the bargain" to both parties notwithstanding any such aforesaid invalidity or unenforceability.

24. Negotiated Terms

The parties agree that the terms and conditions of this Agreement are the result of negotiations between the parties and that this Agreement shall not be construed in favor of or against any party by reason of the extent to which any party or its professional advisors participated in the preparation of this Agreement.

25. Counterparts and Electronic Signatures

This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which shall together constitute one and the same instrument binding all Parties notwithstanding that all of the Parties are not signatories to the same counterparts. For all purposes, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document. The parties agree that this Agreement and any subsequent writings, including amendments, may be executed and delivered by exchange of executed copies via E-mail or other acceptable electronic means, and in electronic formats such as Adobe PDF or other formats mutually agreeable the parties which preserve the final terms of this Agreement or such writing. A party's signature transmitted by E-mail or other acceptable electronic means shall be considered an "original" signature which is binding and effective for all purposes of this Agreement.

[Signature Page Follows]

IN WITNESS WHEREOF, each party has caused this Agreement to be executed on its behalf by a duly authorized representative, all as of the Effective Date.

[Select: HAWAIIAN ELECTRIC COMPANY, INC. or HAWAI'I ELECTRIC LIGHT COMPANY, INC. or MAUI ELECTRIC COMPANY, LIMITED]

("Company")

By: _____
Print Name: _____
Its: _____

[Insert Name of Bidder]

("Bidder")

By: _____
Print Name: _____
Its: _____

REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix F – Code of Conduct



**Hawaiian
Electric**

The Hawaiian Electric Companies' Code of Conduct

Hawaiian Electric Company, Inc., Maui Electric Company, Ltd., and Hawai'i Electric Light Company, Inc. (collectively, the "Company")
Code of Conduct Pertaining to the Implementation of a
Competitive Bidding Process for the Aggregation and Delivery of Grid Services

Purpose

The Framework for Competitive Bidding ("Framework"), adopted on December 8, 2006, by the Public Utilities Commission of the State of Hawai'i (the "Commission") pursuant to Decision and Order No. 23121 (Docket No. 03-0372, Instituting a Proceeding to Investigate Competitive Bidding for New Generating Capacity in Hawaii), requires that the Company develop and follow a code of conduct in order to ensure the fairness and integrity of the competitive bidding process, in particular where a utility or its affiliate seeks to advance an energy generation resource proposal in response to a Company RFP (as defined below). The Framework, at Section III.A.4., requires the utility to submit to the Commission for review and approval (subject to modification if necessary by the Commission), a code of conduct prior to the commencement of any competitive bid process under the Framework.

By Order No. 36187 issued on February 27, 2019, the Commission directed the Company to file its draft expedited grid services request for proposals ("RFP") in Docket No. 2017-0352 for Commission review.

This Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for the Aggregation and Delivery of Grid Services ("Code of Conduct") outlines the policies and general procedures of the competitive bidding process to ensure that it is undertaken in a fair and unbiased manner, that all bidders have access to the same information, and that affiliate options do not have any unfair competitive advantage or enjoy undue preference over third-party bids.

Definitions

- Affiliate – Any person or entity that possesses an “affiliated interest” in a utility as defined by section 269-19.5, Hawaii Revised Statutes (“HRS”), including a utility’s parent holding company but excluding a utility’s subsidiary or parent which is also a regulated utility.
- Affiliate Team – Employees and consultants of an Affiliate who prepare a proposal to be submitted to the Company in response to a Company RFP.
- Company RFP – A written request for proposals issued by the Company to solicit bids from interested third-parties, and, where applicable, from Affiliate(s), to aggregate and deliver grid services to the Company pursuant to the competitive bidding process.
- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company’s RFPs conducted under the Framework and the evaluation of bids submitted in response to these RFPs.

- Competitive Bidding Code of Conduct Acknowledgement of Receipt (Acknowledgement) – A document that must be signed by all Company RFP Team members acknowledging receipt of the Code of Conduct and that person’s responsibility to comply with the Code.
- Confidential Information – Any non-public information developed and provided by the Company (i.e., proprietary system information, etc.) or bidders during the RFP process (such non-public information may include, for example, the identity of competing bidders, and their technical, trade or financial information). This term includes any material non-public information regarding the RFP process developed for and used during the competitive bidding solicitation process, such as the evaluation process or criteria. Confidential Information includes Confidential Resource Proposal Information and Confidential RFP Process Information but does not include public information, such as information in the Companies’ public filings with the Commission.
- Confidential Resource Proposal Information – Any non-public information developed and provided by, an Affiliate or third-party bidders during the RFP process (such non-public information may include, for example, the identity of competing bidders, and their technical, trade or financial information).
- Confidential RFP Process Information – Any non-public information regarding the RFP process developed and used during the competitive bidding solicitation process.
- Consumer Advocate – The Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, State of Hawai‘i.
- Grid Service Contract Manager – The staff position(s) within the Company’s Demand Response Division responsible for managing the Company RFP Team(s). The Grid Service Contract Manager shall be a member of the Company RFP Team he/she manages.
- Independent Observer – The neutral person or entity appointed by the Commission to monitor the Company's competitive bidding process, and to advise the Company and Commission on matters arising out of the competitive bidding process, as described in Part III.C of the Framework.
- Director of Renewables Acquisition Division – The supervisor of the Division within the Company responsible for the implementation of the competitive bidding process pursuant to the Framework. The Director of Renewables Acquisition Division shall be a member of the Company RFP Team.

Implementation and Application of the Code of Conduct

Employees of the Company who will be involved in the competitive bidding process must comply with the Code of Conduct. The Company RFP Team must implement the Code of Conduct in order to be eligible to evaluate bids and select a preferred bidder. The Code of Conduct addresses: (1) communication requirements and procedures associated with the relationship between Company RFP personnel and bidders; (2) the express affirmation that a bid from an Affiliate and any communications with an Affiliate will be treated in the same manner as any other bid or communication from an independent third-party bidder; and (3) communication requirements associated with the relationship between Company management and the various entities involved in the competitive bidding process.

Finally, this Code of Conduct does not apply to communications and information shared between Company employees and an Affiliate in the normal course of their employment that is not associated with any active RFP.

General Rules

1. Competitive Bidding Code of Conduct Acknowledgement of Receipt. Any employee (whether full-time, part-time, temporary or contract) or consultant involved in the competitive bidding process as a member of the Company RFP Team shall comply with the procedures outlined herein in order to be eligible to evaluate bids submitted in response to the Company RFP and must sign the Acknowledgement.
2. Any Affiliate Team Shall be Considered as an Independent Third-Party Bidder. Affiliate Teams shall be considered and treated as a separate third-party bidder for all purposes within any grid services RFP. There shall be no communication or interaction between the Company RFP Team and any Affiliate Team except as may be permitted under the Framework or this Code of Conduct and consistent in all respects with communications and interactions permitted with unaffiliated third-party proposers. Affiliate Teams shall have no access to, interaction or communications for the purpose of completing a proposal in response to any RFP with Company personnel for the purpose of completing a proposal in response to any grid services RFP. Affiliates of the Company shall also be subject to the terms, conditions and restrictions specified in the Company's Affiliate Transaction Requirements issued by the Commission, including the conflict of interest rules applicable to transfers of employees between the Company and any Affiliate.
3. Duty Not to Disclose Confidential Information Across Teams. Members of the Company RFP Team may work with members of an Affiliate on other projects not related to the Company RFP, but are prohibited from discussing or disclosing, directly or indirectly through a conduit, Confidential Information with: (i) disclosure between Company and Affiliate controlled by the Affiliate Transaction Rules ("ATRs"), or (ii) any Company employee, individual or entity without a business need to know. No transfer of an employee of the Company shall be used to circumvent this prohibition to create a conduit for the prohibited transfer of Confidential Information.
4. Access to Information During Bidding Period. It is the objective of the Company that all bidders, including the Affiliate Team, receive access to the same RFP information at the same time. All communications regarding the RFP will be provided to all bidders through the Company's RFP website or other specialized means of access established for purposes of administering the RFP. No members of the Affiliate Team will have access to such information before it is distributed to all potential bidders.
5. Duty Not to Disclose Confidential Resource Proposal Information During RFP Process. All Confidential Resource Proposal Information shall be held in confidence during the RFP evaluation and selection process and negotiation of contracts with selected bidders (if necessary), and shall not be discussed or exchanged by the Company RFP Team with any party except the bidder providing the information, Company management personnel responsible for resource decisions, Company RFP Team members, the Independent

Observer, and the Commission and the Consumer Advocate, and their respective staffs and consultants. Dissemination of such Confidential Resource Proposal Information shall be limited, to the extent possible, to those with a business need to know.

6. No Preferential Treatment. The Company RFP Team, when evaluating proposals will give all proposals the same consideration within the parameters of the particular RFP and the eligibility, threshold and evaluation requirements and criteria contained therein. Similarly, Affiliate Team bids will not be given any preferential or discriminatory treatment.
7. Applicability of Code. Any employee or consultant who directly or indirectly takes part in the conduct of the competitive bidding process, whether an employee of the Company or of a company under contract, shall comply with the requirements for treatment of Confidential Information obtained during the competitive bidding process. Such employee or consultant shall execute the Acknowledgement required under General Rule 1 above.
8. Rules for Evaluators. Any employee or consultant taking part in the evaluation of bids or in the process of selecting grid service suppliers (the "evaluator") must comply with the following rules:
 - a. In carrying out his or her responsibilities, the evaluator must make his/her decision based on the merits of the proposal and irrespective of all partisan considerations;
 - b. The evaluator must not accept any gifts, favors, entertainment or other advantages from any bidder;
 - c. The evaluator must hold in confidence all Confidential Information obtained through the bidding process;
 - d. Should the evaluator be directly contacted by any bidder, he/she must promptly relate such contact to the Grid Services Contract Manager, and, as applicable, the Independent Observer, if such contact could be deemed to have compromised the evaluation process.
9. Company Officer Certification of Code of Conduct Compliance. A Company officer, identified to the Independent Observer and the Commission, shall have the written authority and obligation to enforce the Code of Conduct. Such officer shall certify, by affidavit, Code of Conduct compliance by all employees participating in a specific RFP process after each specific RFP process ends.
10. Term. This Code of Conduct shall remain in effect until: (a) the final contract(s) for RFPs conducted under the Framework with the successful bidder(s) is/are executed or when written notice of termination of the RFPs to be conducted under the Framework is provided by the Director of Renewables Acquisition Division or his/her designee to the Independent Observer and the Commission; and (b) A certification of Code of Conduct compliance by all employees participating in the specific RFP process is submitted by affidavit by the Company Executive in Charge. The Code of Conduct shall remain in effect through all stages or phases of a particular RFP, regardless of the length of time between such stages or phases in the RFP.

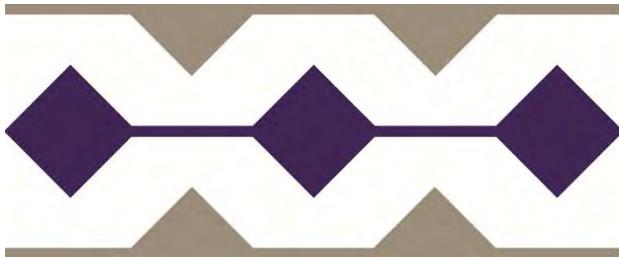
REQUEST FOR PROPOSALS
FOR
DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix G – Contract Capability Bid Form



**Hawaiian
Electric**

Contract Capability

Supplier Name	
Submission Date	

		O'ahu			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		O'ahu			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		O'ahu			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawai'i			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawai'i			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawai'i			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

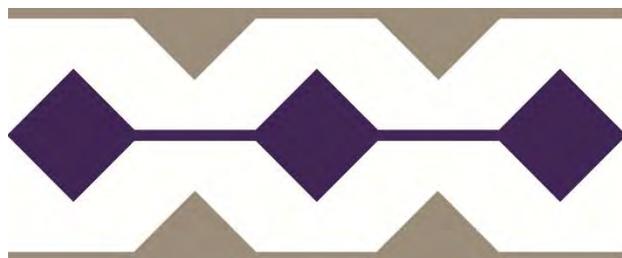
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix H – Pricing Sheet



**Hawaiian
Electric**

Pricing

Pricing O‘ahu

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)

Capacity – Build

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	3	3	3	\$/ (kW*Month)

Capacity – Reduction

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing Maui

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)

Capacity – Build

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	3	3	3	\$/ (kW*Month)

Capacity – Reduction

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing Hawai'i

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)

Capacity – Build

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	3	3	3	\$/ (kW*Month)

Capacity – Reduction

	Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price				\$/ (kW*Month)
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/ (kW*Month)
Monthly Minimum Incentive	5	5	5	\$/ (kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

REQUEST FOR PROPOSALS

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**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
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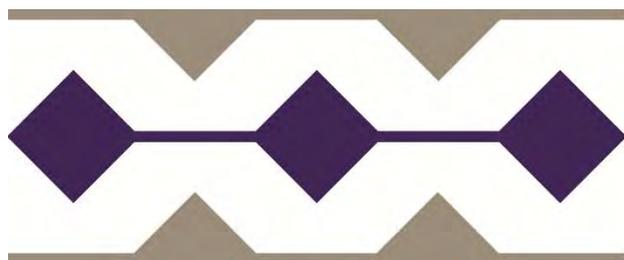
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix I – Requirements Summary Worksheet



**Hawaiian
Electric**

Hawaiian Electric Companies
RFP for Delivery of Grid Services from Customer-Sited Distributed Energy Resources

Appendix I: Requirements Summary Sheet

Requirement Subcategory	Requirement Description	Meets Requirement (Yes/No)	If proposal does not meet the requirement please provide an explanation below.
Fast Frequency Response	Respondent will meet all requirements within GSPA Exhibit A-1 - Fast Frequency Response.		
Capacity	Respondent will meet all requirements within GSPA Exhibit A-3 - Capacity.		
Advanced Metering	Respondent will meet all requirements within GSPA Exhibit E - Advanced Metering.		
Operational Forecast	Respondent will meet all requirements within GSPA Exhibit F - Operational Forecast.		
Data, Integration, and Testing Requirements	Respondent will meet all requirements within GSPA Exhibit G - Data, Integration, and Testing Requirements.		
Service Level Agreements	Respondent will meet all requirements within GSPA Exhibit I - Service Level Agreements.		
Reporting	Respondent will meet all requirements within GSPA Exhibit J - Reporting.		
Customer Service Agreement Requirements	Respondent will meet all requirements within GSPA Exhibit M - Customer Service Agreement Requirements.		
Participant Service Agreement Requirements	Respondent will meet all requirements within GSPA Exhibit N - Participant Service Agreement Requirements.		

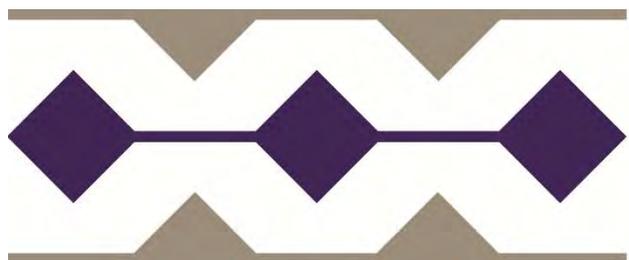
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RFP No. 103119-02

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Docket No. 2017-0352

Appendix J – Questionnaire Summary Worksheet



**Hawaiian
Electric**

Hawaiian Electric Companies
RFP for Delivery of Grid Services from Customer-Sited Distributed Energy Resources

Appendix J: Questionnaire Summary Worksheet

Questionnaire Topics	Subtopic	Question	Summary of Respondent's Proposal
Grid Service to Be Provided	Fast Frequency Response	Which grid services will be provided? (See Attachment A of GSPA for definition of grid services.)	
	Capacity-Load Reduction		
	Capacity-Load Build		
Locations (Systems/Islands) Where Grid Service Will Be Delivered	Hawaiian Electric - Oahu	At which locations (Systems/Islands) will the grid services will be provided? (See Attachment A of GSPA for definition of grid services.)	
	Hawaii Electric Light - Hawaii		
	Maui Electric - Maui		
Customer Class	Residential	Which customer class will be targeted to fulfil the grid services?	
	Small Business & Commercial		
	Large Commercial and Industrial		
End Devices	Residential	Which types of end devices will be utilized for each customer class?	
	Small Business & Commercial		
	Large Commercial and Industrial		

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RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix K – Information Assurance Worksheet



**Hawaiian
Electric**

Instructions to Vendors Completing This Technology Standards Questionnaire

Thank you for taking the time to complete this Hawaiian Electric questionnaire regarding Technology Standards and Preferences. It is likely that someone very familiar with your underlying technical architecture will be required in order to adequately complete the questionnaire. All of the question responses should be provided within the spaces on Worksheet #2 and #3 which are labeled at the bottom of this page as "Vendor Responses - IT" and "Vendor Responses - IA".

The first view that you will see of the Vendor Response Matrix may be in its fully contracted mode. (NOTE: This may not be true if spreadsheet is sent in 'protected' mode as the Grouping control buttons on the left side will not function under protected mode. If sent in 'protected' mode, the spreadsheet will already be fully expanded). The matrix uses expansion (Group) controls on the far left side of the spreadsheet to control either the individual expansion/contraction of any one item or the full expansion/contraction of all items at once. The example below shows a completed segment of the Matrix in its fully contracted mode.

Enter responses for individual item compliance indicators. A six choice response matrix is presented to the right of each question item and provides you the ability to offer one of the following six answers: (1) System as Proposed Meets Standard, (2) System will meet standards in Scheduled Upcoming Release, (3) System can meet standards using 3rd party products, (4) System can meet standards with customization, (5)

It is important that all of your responses to the six choice response matrix use the value "1" as the entry into the cells. The internal HE assessment process that is applied to the matrix expects the numeric value "1" to be placed into one of the six response columns. It is important that you use this numeric value and no other characters.

See the example below. In this example, the respondent indicated that their technology would currently meet Data Standards, that their technology would incorporate the use of a Data Object Model in a subsequent scheduled release, that the data model would meet the Data Standards, that they do not provide a logical data model for their technology and that they can provide a physical data model using third party tools.

Hawaiian Electric Technology Assessment Questionnaire					Vendor Response Options					
Project Name					XYZ, Inc.					
Information Only	Ideal	Core	Mandatory		Meets	Will	3rd P	Cust	No	Other
				Hawaiian Electric Technology Standards Enter the numeric value "1" (not text) as the flag values in the yellow highlighted response options. Do not flag more than 1 (one) box per row. Use Grouping controls on far left side of this spreadsheet to fully open all text and response options. Use beige areas in expanded rows to enter any desired hyperlinks or additional explanation text.	System as Proposed Meets Standard	System will meet standard in scheduled upcoming release	System can meet standard using 3rd Party products	System can meet standard with customization	System as proposed does not meet standard	Other
Data and Database Architecture										
Data Architecture (or Data Object Architecture)					Meets	Will	3rd P	Cust	No	Other
			1	Adherence to Data Standards	1					
			1	Data Object Model		1				
			1	Alignment of Data Objects with Data Standards			1			
			1	Logical Data Model		1				
			1	Physical Data Model	1					
Data Management					Meets	Will	3rd P	Cust	No	Other
			1	Data Access Utility	1					
			1	Data Import/Export Support	1					
			1	Extract/Transfer/Load (ETL) Capability	1					
			1	Compatibility with HE Operational Data Stores (ODS)			1			
			1	Adherence to Data Labeling and Handling Requirements				1		

To understand the full meaning of the standard and to provide a full response to the standard, the spreadsheet must be viewed in its expanded mode. (The spreadsheet version sent to you may already show all items in expanded mode.) The graphic that follows illustrates how each item of the questionnaire can be expanded to see more in depth text on the intent of the item and to offer more extensive responses. Many of the items in the questionnaire will require the vendor to offer more in depth answers that can't be adequately communicated with the "six option" flags. In the following example, we can see more of how the example responder offered additional information about their upcoming release of a Data Object Model. The sample vendor also provided a hyperlink to a technical details area of their website (fictitious) that provides more information on their data object technology.

Information Only	Ideal	Core	Mandatory		Meets	Will	3rd P	Cust	No	Other
				Hawaiian Electric Technology Standards Enter the numeric value "1" (not text) as the flag values in the yellow highlighted response options. Do not flag more than 1 (one) box per row. Use Grouping controls on far left side of this spreadsheet to fully open all text and response options. Use beige areas in expanded rows to enter any desired hyperlinks or additional explanation text.	System as Proposed Meets Standard	System will meet standard in scheduled upcoming release	System can meet standard using 3rd Party products	System can meet standard with customization	System as proposed does not meet standard	Other
Data and Database Architecture										
Data Architecture (or Data Object Architecture)					Meets	Will	3rd P	Cust	No	Other
			1	Adherence to Data Standards	1					

Information Only	1	Data Object Model	Comments & Hyperlink Provided	1					
			Vendors may add any hyperlink to right:	http://coolproduct.com					
			Standard: System should access data through a data object rather than directly from the DB.	At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.	In the next product 4.3 release, our product will include the meta data layer that adheres to a standard object model.				
			Comment: Object models typically offer a higher level 'name based' form of access to data in a DB. When applications utilize a data object model, the data is normally better formulated and allows for easier name based data mapping (at the object model level vs. at the field level in the DB tables).						
	1	Alignment of Data Objects with Data Standards			1				
	1	Logical Data Model			1				
	1	Physical Data Model		1					

Viewing and entering responses within the 'Expanded Mode' uses the Group Controls at the far left. To the far left of the Vendor Response spreadsheet, the margin area contains buttons that can be used to expand each item. If not, use the buttons at the very far top of the left margin [1] or [2] to expand all items in the spreadsheet or use the [-] or [+] buttons just to the left of each item to expand the individual items. The expanded space for vendor input allows for two additional types of responses. *Note: The spreadsheet version sent to you may already show all of the items in their expanded mode, and if it is protected, these buttons cannot be used to either expand or contract the spreadsheet.*

- (1) Use the large open beige box area to insert extended comments.
- (2) Use the "Hyperlink" space above the beige box to link to other MS Office documents, URL sites or parts of your proposal materials.

The large box for adding comments can be expanded by dragging downward on the bottom of the far left row indicator if more space is needed for your comments.

Also note that HE has labeled each standard with a Compliance Priority rating. The four ratings used by HE are:

Mandatory: Compliance with these standards are generally considered fully mandatory unless a very unusual circumstance would make compliance non-feasible or inapplicable.

Core: Compliance with these standards help HE maintain its core technology directions and compliance is generally expected, although the situations where non-compliance may be permitted are somewhat more flexible than for mandatory items.

Ideal: These standards often reflect future direction strategies where compliance is sought but the state of technologies or technology implementation may not yet be sufficiently well established in the market place such that practical compliance can always be expected. For instance, use of certain Service Oriented Architecture techniques might fall in this category.

Information Only: In some cases, information may be sought which is useful in better understanding technologies or their implementations but may not correspond to any fully articulated standard in HE. For instance information about certain technology lifecycle management issues might fall in this category where HE may deal with topics on a case by case basis.

Ignore any asterisks that may be located in the Compliance Priority Rating columns A through D.

The Desired Feedback text provided in the left portion of the HE Standards materials created by HE indicates the kinds of things that HE might like to know more about. Vendors are not required or asked to complete long explanations to address the Desired Feedback issues but the Desired Feedback text does illustrate the types of things that would be helpful to understand regarding the responder's approach to a given technical implementation area. Responders who add comments in the beige box may better help HE understand the responder's point of view regarding any particular topic.

Here are a few specific pointers for completing the questionnaire properly:

Set hyperlinks to refer to the web or bundle any hyperlinked documents in a common directory: If you decide to include hyperlinks to additional materials or to other portions of your proposal, zip all forwarded documents (other than proposal) in a special subdirectory for extended explanation documents). We are not encouraging the sending of gratuitous materials or the sending of generic white papers. We also value brevity and all comments should add specific information about how your product or organization addresses specific issues.

Keep spreadsheet comments relevant and short but do not be afraid to use them: We would like to know more about how your organization would choose to approach a technical implementation topic, but rather than get a large amount of generic material, we would typically like to have the essence in a quick sentence or two placed in the item response area. That is why we included the comment space next to each HE standard.

Hawaiian Electric Information Technology Assessment Questionnaire		Vendor Response Options	
Project name		XYZ, Inc.	
Information Only	XYZ, Inc.	System as Proposed Meets Standard	System will meet standard in scheduled upcoming release
	Project name		
	02/01/09		
	03/15/09		
Insert '1' for Non Applicable	Enter the numeric value "1" not text as the flag values in the yellow highlighted response options. Do not flag more than 1 one) box per row. Use Grouping controls on far left side of this spreadsheet to fully open all text and response options. Use beige areas in expanded rows to enter any desired hyperlinks or additional explanation text.	System can meet standard using 3rd Party products	System can meet standard with customization
Information Only		System as proposed does not meet standard	Other

Data and Database Architecture

Data Architecture or Data Object Architecture)

		Meets	Will	3rd P	Cust	No	Other
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Information Only	1	Data Object Model					
Information Only		Vendors may add any hyperlink to right:					
Information Only		<p>Standard: System shall access data through a data object rather than directly from the DB.</p> <p>Comment: Object models typically offer a higher level 'name based' form of access to data in a DB. When applications utilize a data object model, the data is normally better formulated and allows for easier name based data mapping at the object model level vs. at the field level in the DB tables .</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System providers should describe whether the application uses a data object model and whether the model provides an easy way to perform object model mapping.</p>					

Information Only	1	Logical Data Model					
Information Only		Vendors may add any hyperlink to right:					
Information Only		<p>Standard: Logical data model s shall be available and aligned with project and enterprise requirements.</p> <p>Comment: HE desires that systems provide a logical data model AND that the attributes of the model be capable of integration into a Data Modeler.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System providers shall indicate whether they have a logical data model and whether it can be provided or made available for review.</p>					

Information Only	1	Physical Data Model					
Information Only		Vendors may add any hyperlink to right:					
Information Only		<p>Standard: Physical data model s shall be available and aligned with project and enterprise requirements.</p> <p>Comment: HE desires that systems provide a physical data model and that attributes of the modeled data to be capable of integration into a Data Modeler.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System providers shall describe their physical data structure and whether it is represented in a model, whether the model is available for use or review and what tools can be used with the physical data model.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				

Data Management

		Meets	Will	3rd P	Cust	No	Other
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Information Only	1	Data Access Utility					
Information Only		Vendors may add any hyperlink to right:					
Information Only		<p>Standard: System shall include a data access utility that can be used to directly manage the data business object.</p> <p>Comment: The ability to perform basic data access/edits e.g. data viewing, simple table editing) shall be provided through a data access utility included as part of the system/application. The utility shall access the data through the data object and shall also incorporate the business rules for data edits. Note: This is not the same as use of a general third party SQL access tool. In general, data shall not be edited directly through use of such general DB tools. However a system provider provided utility which adheres to the system provider's data edit rules is helpful for data repair such switching a flag in the DB directly.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System providers shall provide description of capabilities.</p>					

Information Only	1	Data Import/Export Support					
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Information Only	Ideal	Core	Mandatory	<p>Desired Feedback: System provider shall indicate whether data base is JDBC compliant.</p>	<p>may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references</p>							
				<p>OLEDB Compliance</p> <p>Standard: System Database should be OLEDB compliant.</p> <p>Comment: The database should provide an application programming interface employing the Common Object Model, according to OLEDB standards.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should indicate whether data base is OLEDB compliant.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references</p>							
1				<p>SQL Data Access Compliance</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System database shall be able to accommodate and respond properly to standard SQL queries run against the database.</p> <p>Comment: The database shall be accessible not only from the package application interface, but shall also allow data extraction via standard SQL. This would mean that data can be extracted via a standard SQL based tool directly from the database.</p> <p>Preference: Oracle / MS SQL language compliance preferred.</p> <p>Desired Feedback: System provider shall verify that the database is SQL compliant.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
				<p>Use of HE Standard Database</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System operates using MS SQL Server 2012 for non-enterprise scale systems or Oracle XI or newer) for Enterprise-scale applications.</p> <p>Comment: HE prefers to standardize its database technology around MS SQL or Oracle 64 bit versions.</p> <p>Preference: MS SQL Server 2012 or Oracle XI or newer .</p> <p>Desired Feedback: System provider should certify that system operates on specified databases.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
				<p>Use of Alternate Databases</p>								
1				<p>Standard: Systems may support other types of non-SQL databases Hana, Hadoop, other No SQL databases .</p> <p>Comment: HE acknowledges that large-scale data may require alternate database types to address performance and volume.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should provide information about the other types of supported databases.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
Scores for Data & Database Architecture					<p>Avg Scores</p> <p>Ideal Core Joint</p> <p>0 0 0</p>			<p>Mandatory Compliance</p> <p>Not Applicable</p>		<p>Vendor Responses include:</p>		<p>Avg. HE Rating</p> <p>10.0</p>

Application Architecture				Meets	Will	3rd P	Cust	No	Other	
Development Environment										
	1	Mainstream Integrated Development Environment								
Information Only	Ideal Core Mandatory	Vendors may add any hyperlink to right:								
		Standard: Systems developed or maintained within HE shall allow development or maintenance work to be performed using a mainstream Integrated Development Environment (IDE). Comment: Many software packages can be customized using an industry mainstream IDE such as MS Visual Studio, Eclipse, WebSphere Visual Studio, etc. HE prefers applications that can be maintained using a mainstream, industry standard IDE with MS Visual Studio or Eclipse. Preference: MS Visual Studio - .Net, Eclipse for Java, SAP Workbench for SAP ABAP Development. For Source repository, we prefer MS Team Foundation Server for .Net, and CA Harvest for non-.Net. Desired Feedback: System provider shall indicate whether the system can be maintained using one of the industry standard development environments.		At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.						
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
	-	Programmatic Interface for Accessing/Modifying System Information.								
Information Only	Ideal Core Mandatory	Vendors may add any hyperlink to right:								
		Standard: System shall provide an organized, programmatic interface or system development kit SDK to perform any system configuration or to access/modify system information or accounts. Comment: HE seeks to avoid systems that do not organize their configuration interfaces and make access to system information obtuse. Interfaces shall be documented and consolidated to logical screen groupings in order to make adjustments easy. Preference: Product shall provide a native SDK. Desired Feedback: System provider shall indicate whether system can be configured and maintained using pre-packaged screens with modern interfaces.		At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.						
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
	1	Mainstream Development Language								
Information Only	Ideal Core Mandatory	Vendors may add any hyperlink to right:								
		Standard: Any user configurable or exposed development language used for product customization and maintenance shall be based on one of the following: .Net, Java, or ABAP. Comment: HE seeks to avoid use of highly proprietary languages for which programming resources are rare and difficult to acquire. System shall use mainstream languages and technologies. Preference: Preference is .Net, Java, ABAP. Desired Feedback: System provider shall indicate whether system can be programmed and maintained in one of the above designated mainstream languages.		At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.						
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
	1	Programming Model								
Information Only	Ideal Core Mandatory	Vendors may add any hyperlink to right:								
		Standard: System/application shall be based on a modern development technology framework such as .Net, ASP.Net, Java EE, or Java Server pages (JSP). Comment: HE seeks to work within modern, web oriented frameworks that employ well established interoperability standards, are industry standard and support a Services Oriented Architecture approach. Preference: Preference is .Net, Java, ABAP. Desired Feedback: System provider shall indicate what, if any, programming model the system is based upon.		At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.						
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
	1	Use of Plain Text Configuration or GUI Configuration								
Information Only	Ideal Core Mandatory	Vendors may add any hyperlink to right:								
		Standard: System customization and other configuration files available to HE developers should make source content available as plain text or through a GUI interface. Comment: Manipulation of configurable system data by HE programmers should not require that the HE programmers have to interpret the formatting of configuration files. Preference: No products specifically preferred.		At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.						
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						

				Desired Feedback: System provider should indicate if system configuration information can be accessed and manipulated as plain text or thru GUI for review, development or customization purposes.	in text at right to highlight other relevant sections of proposal materials.											
			1	Preservation of Customization												
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:											
				Standard: System shall allow for the preservation of prior customizations during product upgrades.	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.											
				Comment: When software packages are upgraded, the ability or inability to preserve customizations created within older versions can dramatically impact the feasibility and the cost of the upgrade. Applications that provide specific provisions for creating customizations that are upgradeable can help bridge this issue. Typically, these applications may require that customizations be performed using a specific toolset provided by vendor. Preference: No products specifically preferred. Desired Feedback: System provider shall indicate if system has provisions for preserving customizations against breakage during upgrades, what approach is used and how extensive the protection may be.												
Training and Progression of Environment											Meets	Will	3rd P	Cust	No	Other
			1	Testing Cycles												
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:											
				Standard: System under its proposed licensing provisions shall allow for all of the following testing cycles to be performed: Unit Testing, Integration Testing, System/Functional Testing, End-to-End Testing, Performance Testing and Operational Readiness Testing.	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.											
				Comment: The choice of what testing cycles shall be performed is essentially an implementation issue, but the system itself shall not preclude any of the cycles from being exercised. The current standard only requires that the system be capable of being tested via each stage. Preference: No products specifically preferred. Desired Feedback: System provider shall describe any testing cycle provisions and shall further address whether those provisions can be supported by the product.												
			1	Developer Testing Framework												
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:											
				Standard: System shall allow for the use of a Testing tool for development and defect fix test management.	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.											
				Comment: Testing development or customization changes as well as defect fixes must be managed to assure the proper migration of changes from the test to the production environment. HE requires that such changes be managed to assure that changes are fully tested, accepted and properly released for larger testing. Preference: Preference is to leverage IDE identified above. Desired Feedback: System provider shall describe Unit Testing provisions and shall further address whether those provisions can be managed by the preferred IDE.												
			1	User & Performance Testing Framework												
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:											
				Standard: System shall allow for the use of a Testing tool for test case development, automation, and tie to defect management software. Also, this shall include performance testing capabilities.	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.											
				Comment: Testing development or customization changes as well as defect fixes must be managed to assure the proper migration of changes from the test to the production environment. HE requires that such changes be managed to assure that changes are fully tested, accepted and properly placed into production. Preference: Preference is HPQC test tracking/automation) and LoadRunner performance testing). Jmeter for lighter performance testing. Team Foundation Server for .Net applications. Desired Feedback: System provider shall describe Unit Testing provisions and shall further address whether those provisions can be managed by preferred tools.												
			1	Change and Defect Management												
					Vendors may add any hyperlink to right:											
				Standard: System shall allow for the use of automated change management and defect tracking.												

Information Only	Ideal	Core	Mandatory	<p>Comment: The tracking of custom changes and defect fixes are important and systems within HE shall allow those issues to be tracked from the time that an issue is defined until the subsequent adjustment is designed, developed, tested, accepted, placed into production and successfully used for a period of time.</p> <p>Preference: End User Discovered Post-go-live bugs: Service Now Developers Release testing: SAP - Solution Mgr, Visual Studio Team Foundation Server, HPQC</p> <p>Desired Feedback: System provider shall indicate if a change and defect management system is used.</p>	<p>vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
	1			<p>Enablement and Use of Event Logs for Error Tracking and Debugging</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System shall provide for easy use of log files to track events during testing or debugging operations.</p> <p>Comment: The support for the system testing shall include generous use of event logs to record system conditions, messages, logical status and events during testing or debugging. Logs shall allow for optional, progressive disablement during normal operations.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall indicate the extent and use of system log capabilities.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
	1			<p>Multiple Separate but Consistent Environments</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System under its proposed licensing provisions can be configured and sized to support multiple environments including development, staging, and training) that fully emulate the production environment including connectivity to other key systems.</p> <p>Comment: The separate environments shall be configurable to have the same functionality as the production environment to assure that processes created in these non-production environments will operate in the production environment as originally developed.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe provisions for establishing separate environments and its configuration and deployment alignment with the production environment.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
	1			<p>Use of Virtual Server Environment for Multiple Environments</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System under its proposed licensing provisions should allow for the hosting of development, staging, or training versions/implementations of the system on Virtual Server.</p> <p>Implementations of the system should be capable of being loaded on an instance a virtual server for fundamental development, testing or training purposes and should behave on a virtual server consistent with behavior on a dedicated server.</p> <p>Preference: VMWare or AIX-based virtualization LPAR .</p> <p>Desired Feedback: System provider should indicate if systems support virtualization.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
	1			<p>Straightforward Production Deployment</p>								
Information Only	Ideal	Core	Mandatory	<p>Standard: System can be deployed from a Test to Production environment by straightforward alteration of path names and connections using executable or msi and/or batch files.</p> <p>Comment: The system shall not require any fundamental re-configuration to deploy from test to production. The movement of code or the updating of connections and the loading of current data shall be the only major technical elements of final production deployment. These shall be accomplished via the use of HEs Operational Team Deploy with no required intervention from the system provider.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall indicate if deployment can be accomplished with no fundamental reconfiguration other than connectivity and data updates or movement of tested code to the production system.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
	1			<p>Version Consistency among Environments</p>								
					<p>Vendors may add any hyperlink to right:</p>							

				Meets	Will	3rd P	Cust	No	Other	
Information Only	Ideal	Core	Mandatory	<p>Standard: New system releases can be managed in way that allows for easy and straight forward version control to be maintained consistently among all environments.</p> <p>Comment: Patch and upgrade procedures shall allow for the consistent application of system updates to all environments without undue difficulty.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall indicate how updates are applied to include all relevant environments including a description of tools and processes required.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.					
				Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment.						
				Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
Componentization and Service Oriented Architecture (SOA Support)										
			1	N-Tier Application Architecture						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:						
				<p>Standard: System shall employ use of application development tiers to separate major functions or layers.</p> <p>Comment: Beyond the simple separation of application from data, the system uses a well defined tier approach to separating major services including separation of the presentation layer from the application layer, separation of web server components from application components as well as providing separate security administration, separate report and print services, etc. See these requirements for related information: Multi-Tier System Architecture; Data Tier Separation; Segregation of Reporting Services; and Substantial to Full Separation of the Presentation Layer.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe the tier architecture of the system and describe the separation and integration methods for defining tiers.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
			1	Data Tier Separation						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:						
				<p>Standard: Data shall be stored in a separate tier distinct from other aspects of the application architecture.</p> <p>Comment: 2 tier to 'n' tier technologies allow more flexible solutions and allow the application to be scaled up to meet higher load levels. At a 2 tier minimum, a separated data tier compliant with the Modeling View Controller MVC design pattern is a widely accepted implementation of the standard. If the data is not stored to meet this guideline, the integration, maintenance and reporting functions associated with the application can be problematic.</p> <p>Preference: Data to be stored in a database.</p> <p>Desired Feedback: If system does not meet this standard, what type of data storage approach is used?</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
			1	No Storage/ Maintenance of Data on Web Servers						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:						
				<p>Standard: Beyond the separation of data from the application, the system shall specifically avoid storing (other than very short term caching) of any 'content' information on web servers.</p> <p>Comment: No application or system content information shall ever be stored on a web server as part of an on-going data storage arrangement or strategy. Any temporary cache data must also meet HE standards regarding encryption of data outside a HE firewall.</p> <p>Preference: Data to be stored in SQL DB behind Firewall.</p> <p>Desired Feedback: If system does not meet this standard, describe what type of data storage is maintained at the web server level.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
			1	Segregation of Reporting Services						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:						
				<p>Standard: System shall support the segregation of reporting functionality so as to allow use of mainstream external tools for generating reports from the data.</p> <p>Comment: Consistent with the n-tier architecture approach, HE prefers systems or applications architected to allow third party reporting tools such as SAP Business Objects to be used in developing reports from the data.</p> <p>Preference: Preference for SAP Business Objects.</p> <p>Desired Feedback: If system does not meet this standard, what type of data reporting approach is used? If compliant version is planned, provide any information on release date and form of compliance.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
			1	Substantial to Full Separation of the Presentation Layer						
				Vendors may add any hyperlink to right:						

Information Only	Ideal	Core	Mandatory	<p>Standard: System shall employ substantial to full separation of the presentation layer from the application layer.</p> <p>Comment: Consistent with the n-tier architecture approach, HE prefers systems or applications architected to allow alternative presentation options such as fat vs. thin client options without affecting fundamental system functionality.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall indicate whether the system has multiple presentation modes or whether it allows the presentation mode to be upgraded separately from the application logic. If system does not meet this standard, what options for altering the presentation mode/layer exist? Is the system tied to a particular presentation mode?</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
1				<p>Application Function Componentization</p>	<p>Vendors may add any hyperlink to right:</p>						
Information Only	Ideal	Core	Mandatory	<p>Standard: Individual system functions should be modular, thereby providing individual business functions in a componentized fashion.</p> <p>Comment: Separated program modules should allow the individual modules to be 'called' from one another or from a main program in order to 're-use' functionality across the system.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe degree of componentization and whether the system is more fully based on principles of SOA.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
1				<p>WSDL or WADL Enabled</p>	<p>Vendors may add any hyperlink to right:</p>						
Information Only	Ideal	Core	Mandatory	<p>Standard: System should allow business functions/processes to be defined in WSDL or WADL.</p> <p>Comment: Web Services Description Language (WSDL) is used to define a service within an SOA environment. Applications which are truly Web Services enabled will use this utility. Similarly, Web Application Description Language (WADL) is used to fine services usually within a REST web service.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should indicate if and where WSDL/WADL is used to define common services.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
1				<p>SOAP or REST Enabled</p>	<p>Vendors may add any hyperlink to right:</p>						
Information Only	Ideal	Core	Mandatory	<p>Standard: Important system functions shall be callable via SOAP or REST protocol.</p> <p>Comment: Application functions that can be evoked via SOAP or REST protocol can be leveraged by other applications as a service. In some cases, functions within legacy applications can be wrapped to become "callable" and may use this technique to into a future HE architecture more smoothly.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall indicate what functions, if any, are available to be called via SOAP or REST consistent procedures.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
1				<p>UDDI Enabled</p>	<p>Vendors may add any hyperlink to right:</p>						
Information Only	Ideal	Core	Mandatory	<p>Standard: Important system functions can be described using UDDI publishing.</p> <p>Comment: Important application functions may, under certain conditions, be described and published using Universal Discovery, Description and Integration (UDDI) techniques. When used appropriately, these techniques can allow system functions to be more fully exposed and available to other system uses. Appropriate judgment should be used in requiring this standard.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System providers should indicate what functions, if any, are described and/or published using UDDI.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
<p>Scores for Application Architecture</p>					<p>Avg Scores</p>			<p>Mandatory Compliance</p>	<p>Vendor Responses include:</p>	<p>Avg. HE Rating</p>	
					<p>Ideal</p> <p>0</p>	<p>Core</p> <p>0</p>	<p>Joint</p> <p>0</p>				<p>Failed</p>

Integration Architecture						Meets	Will	3rd P	Cust	No	Other
Integration Capabilities											
Information Only	Ideal	Core	Mandatory	1	API Extensiveness/Flexibility						
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: All user accessible data in the system shall be capable of being accessed via documented APIs with the preferred method of access being a data access model.</p> <p>Comment: Data transfer in and out of applications is a critical component for evaluation. At a minimum, HE expects applications to have a robust level of Application Program Interfaces API or more preferably a data object model that provides flexibility to access the full range of functional data. Testing Excel insertion with paste link to word.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe API extensiveness including whether edit controls are applied to APIs and whether a data model is used for outside access to system data. More extensive feedback would include lists of documented APIs or documentation for the data access model.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	1	Native XML or JSON Support						
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: System should support use of XML or JSON natively to present data or to transfer information in and out of the system.</p> <p>Comment: XML is widely accepted by today's IT industry, and it is the fundamental standard for SOA. Both WSDL/WADL and SOAP/REST are all defined in XML format. Native application support for XML is considered ideal with XML compatibility via additional utilities established as a next best alternative.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe native provisions for presenting data and whether that includes converting data to an XML format for inter system communication.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	1	XML Compatibility						
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: Even if the system does not natively support XML, the system shall be architected to extensively support XML processing through 3rd party XML utilities.</p> <p>Comment: Irrespective of whether the system natively supports XML interchange, does the system interface tightly with third party XML utilities that can be used to either convert system data to XML or take system provided XML data and process it further?</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall explain systems compatibility with 3rd party XML utilities and name its preferred utility if one exists.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	1	Integration at the Web Services Layer						
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: System should support integration flexibility at the web services layer such as allowing XML/WSDL/WADL calls or the interactive use of portlets.</p> <p>Comment: HE seeks functional flexibility among its applications that allow applications to make calls for web services and to receive calls for web services.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should explain the degree to which the system utilizes web services for calling services and for defining services that can be called.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	1	Integration with OData						
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: System should support integration with Microsoft's Open Data Protocol (OData).</p> <p>Comment: OData allows for integration of the application data with other applications.</p> <p>Preference: No products specifically preferred</p> <p>Desired Feedback: System provider should explain whether system can be configured to support OData.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Interoperability with Key Services Important to HE											
				1	Interoperability with MS Exchange						

				Meets	Will	3rd P	Cust	No	Other
			<p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe the form of integration between system and third party tools including the name of recommended tools.</p>						
User Interface UI Standards – Cross Platform									
	1		Windows based Web Browser Compatibility – Internal Use						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: Browser based portions of system shall work with MS Explorer 10.0.</p> <p>Comment: Applications that deliver UI over browser technology shall be compatible with the currently stated HE standard for internal browser compatibility.</p> <p>Preference: Vendor can certify Microsoft Internet Explorer.</p> <p>Desired Feedback: System provider shall state clearly what their browser compatibilities include and/or what their requirements are.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
	1		General Web Browser Compatibility – External Use						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: Browser based portions of system exposed to public facing internet shall work with currently supported version of the following browsers: MS Explorer, Firefox, Safari, and Chrome to be inclusive of all external users.</p> <p>Comment: Applications that deliver UI over browser technology shall be compatible with the currently stated HE standard for external browser public facing technology and the separate standard for external browser technology.</p> <p>Preference: Certify Explorer, Firefox Safari, Chrome.</p> <p>Desired Feedback: System provider shall state clearly what their browser compatibilities include and/or what their requirements are.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
	1		Full Enablement of UI via Browser (without Terminal Services)						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: When required, web browser can be used as the sole client side access for the application. Native browser support is generally preferred while self-updating plug-ins may be accepted.</p> <p>Comment: The software should have web browser enabled UI HTML over HTTP that conducts the user interaction from either an unaided browser, or at minimum, a browser with plug-ins that update automatically. The objective of this standard is to support the application via "thin client" technologies which should not require HE to install any interface application on the user's desktop PC or require use of Terminal Services.</p> <p>Preference: Compatibility on all HE Browsers.</p> <p>Desired Feedback: System provider should indicate level of compliance with all browsers listed in current HE General Web Browser Compatibility standard.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
	1		Web Portal Enablement for External Use						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: Information and functionality in the system UI can be segmented and presented as components within a web portal.</p> <p>Comment: The ability to have meaningful chunks of software application functionality and information displayed within a Web Portal is consistent with HE direction and is desired in any application in as much as it is reasonable and meaningful. Allowing flexible data exchange among portal segments is also desired.</p> <p>Preference: Integration with Yet-to-be-determined</p> <p>Desired Feedback: System provider should outline the system capabilities for expressing its parts as portal components.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
User Interface UI Standards - Windows									
	1		Use of Windows 7 Browsers for Presentation						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: Even if system will not install as a native client on Windows 7 devices, system can use MS Explorer browser for full presentation and interaction.</p> <p>Comment: At a minimum, systems that must be accessed via Windows PCs must be able to present information and appropriate functionality via the native browser (MS Explorer features of Windows 7.</p> <p>Preference: MS Explorer 10.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				

	Desired Feedback: System provider should indicate how system can be assessed and utilized via Windows 7 workstations.	in text at right to highlight other relevant sections of proposal materials.						
Scores for Integration Architecture		Avg Scores			Mandatory Compliance		Vendor Responses include:	Avg. HE Rating 10.0
		Ideal 0	Core 0	Joint 0	Not Applicable			

Technology Architecture				Meets	Will	3rd P	Cust	No	Other
Server Platforms									
	1		Application Server Platform						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: System should operate on current HE Application Server Platform Standard which is defined as Windows Server or AIX.</p> <p>Comment: HE mandates that any new software packages run on the current HE standard.</p> <p>Preference: Preference for Windows Server 2012 and AIX. Lesser preference for Redhat.</p> <p>Desired Feedback: System provider should specify supported application server platforms.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
	1		Use of MS IIS as Web Server Platform						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: Web related system services should operate using a currently supported version of Microsoft Internet Information Server IIS .</p> <p>Comment: Other than limited allowances for Unix web servers, any new software requiring a web server platform should operate from the most recent version of MS IIS.</p> <p>Preference: Preference for most recent version of MS IIS and integration with Tomcat.</p> <p>Desired Feedback: System provider should specify supported web server platforms.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
Scalability and Performance									
1			Vertical Scalability						
Information Only	Ideal			Vendors may add any hyperlink to right:					
				<p>Standard: System can be scaled vertically by adding CPU power and/or memory.</p> <p>Comment: This is both application architecture standard and hardware standard. A system shall be able to scale by adding memory and/or CPU power. Horizontal scalability is addressed by a separate standard.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe ability to scale by adding resources to a single server and shall further describe any impact on licensing and fees.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
			Horizontal Scalability						
Information Only	Ideal			Vendors may add any hyperlink to right:					
				<p>Standard: System can be scaled horizontally by adding servers.</p> <p>Comment: Horizontal Scaling means applications can be run on a cluster of servers with balancing), thus enabling HE to add more servers when the work load expands. Not all software allows horizontal scaling.</p> <p>Preference: F5 load balancing preferred.</p> <p>Desired Feedback: System provider should describe ability to scale by adding additional servers.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
			Cluster Awareness						
Information Only	Ideal			Vendors may add any hyperlink to right:					
				<p>Standard: System is 'cluster aware' at the application layer and can fully leverage server based clustering techniques.</p> <p>Comment: To fully leverage clustering features, the application layer must be designed to work with server functionality to engage clustering options. System provides such integration.</p> <p>Preference: Preference is Power HA for AIX, MS clustering for Windows, and Service Guard for Linux.</p> <p>Desired Feedback: System provider should provide information and architectural specifications dealing with how the system leverages clustering capabilities.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
			Manual Failover Procedures						
Information Only	Ideal			Vendors may add any hyperlink to right:					
				<p>Standard: System can be recreated and brought back to prior state through manual restoration processes while also using system logs or other outside messaging / broker services to understand which transactions may have failed.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations				

				Desired Feedback: System provider should estimate system architecture requirements to achieve HE response as stated.								
Network/Communication Architecture												
						Meets	Will	3rd P	Cust	No	Other	
			1	TCP/IP Network Transport Protocol								
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:							
				<p>Standard: TCP/IP is the standard HE business network transport protocol.</p> <p>Comment: HE does not support Novell NCP, IPX or other proprietary protocols other than VPN encryptions that continue to use TCP/IP. NetBIOS is not supported as a transport protocol even if it is recognized.</p> <p>Preference: IPv4 required.</p> <p>Desired Feedback: System provider shall describe its network transport protocols.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.							
			1	HTTP and HTTPS Data Transport Protocols								
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:							
				<p>Standard: HTTP and HTTPS are the standard HE web data transport protocols.</p> <p>Comment: HTTP is the dominant data transport protocol today and it is a HE mandate for on-line applications. HTTPS is, at a minimum, required for secure data transport but can be replaced by more secure forms of connectivity as needed. See the "Cryptographic System" requirement for additional information.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe its data transport protocols.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.							
Scores for Technology Architecture					Avg Scores			Mandatory Compliance		Vendor Responses include:		Avg. HE Rating
					Ideal	Core	Joint	Not Applicable				
					0	0	0				10.0	

System Operation, Management and Support Architecture				Meets	Will	3rd P	Cust	No	Other						
Information Only	Ideal	Core	Mandatory	1	Compatibility with Storage Area Network (SAN)										
				Vendors may add any hyperlink to right:	<p>Standard: System implementer shall deploy storage services within HE Storage Area Network (SAN) based on 3PAR.</p> <p>Comment: System shall be deployed to operate using a SAN for all system data storage needs other than server based logs or configuration files.</p> <p>Preference: 3PAR preferred.</p> <p>Desired Feedback: System implementer shall be familiar with SAN technologies in order to ensure that the product being implemented is configured correctly to function in a SAN environment.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
Information Only	Ideal	Core	Mandatory	1	Compatibility with Native Fiber Channel for SAN Management										
				Vendors may add any hyperlink to right:	<p>Standard: System is compatible with the native fiber channel used with Storage Area Network SAN management.</p> <p>Comment: System will operate using native fiber channel standards for transmitting hardware commands used to manage remote services on SAN servers and devices.</p> <p>Preference: EMC SAN services using native fiber channel</p> <p>Desired Feedback: System provider shall indicate compatibility with native fiber channel.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
Information Only	Ideal	Core	Mandatory	1	Compatibility with On-Line Back-up and Restore Functions										
				Vendors may add any hyperlink to right:	<p>Standard: System is capable of effective operation in concert with On-Line data back up procedures including awareness of open transactions and files.</p> <p>Comment: System shall allow data and applications to be backed up using on-line back up and restore services. Back-ups shall work from a schedule and the restore functions shall not first require conventional loading of the OS and relevant applications. HE currently uses CommVault software systems to manage its storage management and back-up services.</p> <p>Preference: Preference is eVault i365.</p> <p>Desired Feedback: System provider shall indicate compatibility with eVault i365 and related procedures.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
Information Only	Ideal	Core	Mandatory	1	Compatibility with System Configuration Management software										
				Vendors may add any hyperlink to right:	<p>Standard: System is capable of effective operation in conjunction with system configuration software.</p> <p>Comment: System software change and configuration management services can be managed using SCCM for windows and Uptime for AIX and Linux .</p> <p>Preference: SCCM management services for Windows, Uptime for AIX Redhat.</p> <p>Desired Feedback: System provider shall indicate compatibility configuration software.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
Information Only	Ideal	Core	Mandatory	1	Patch Level Compatibility										
				Vendors may add any hyperlink to right:	<p>Standard: Applications must be consistent with current HE upgrade and fixpack levels for the HE Operating Environment.</p> <p>Comment: Most software packages are designed and implemented based on certain patch and upgrade levels within the IT environment. e.g., .Net, J2EE or JVM level, Operating system version and fix pack level, etc. Quite often, when people purchase different packages even from the same system provider , there is a version/specification level conflict. It is important to resolve compatibility issues before packages are purchased or deployed.</p> <p>Preference: Product must maintain compatibility with current platform versions.</p> <p>Desired Feedback: System provider shall state policy to maintain software compatibility with underlying system patches.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.					
Information Only	Ideal	Core	Mandatory	1	System Management Utilities										
				Vendors may add any hyperlink to right:	<p>Standard: Systems and applications shall be supported by system management utilities commensurate with the management needs of the product.</p>					At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired.					

Information Only Ideal Core Mandatory	Comment: Basic expectations include: 1) Back-end system should be available 24x7 (e.g., 8x5, 10x6, 24x7) with allowable down time via a reserved maintenance window scheduled for Wednesday nights between 7:30pm – 12:00am. In some e-business application outages, service may be maintained via appropriate caching techniques. 2) Back-end systems should provide appropriate transaction logging and tracking mechanisms to perform audits and establish controls. Preference: No products specifically preferred. Desired Feedback: System provider should indicate its ability to comply with HE SLAs.			Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
	Scores for Operation, Management & Support			Avg Scores		Mandatory Compliance		
			Ideal	Core	Joint	Not Applicable		10.0
			0	0	0			

Security and Privacy Architecture				Meets	Will	3rd P	Cust	No	Other						
User Access Management															
Information Only	Ideal	Core	Mandatory	1	LDAP Integration										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: The system operates in conjunction with standard LDAP services.</p> <p>Comment: LDAP is the most widely accepted protocol for maintaining a directory of authenticated users and while a software package may provide its own authentication service, the capability of using 3rd party authentication using LDAP information is critical for raising security services to an enterprise level and using services such as single sign-on SSO .</p> <p>Preference: MS Active Directory preferred. LDAP where Active Directory not supported.</p> <p>Desired Feedback: System provider shall describe the extent of LDAP integration.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>										
Information Only	Ideal	Core	Mandatory	1	Single Sign-On (SSO) Enabled										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: Product supports Single Sign-On SSO .</p> <p>Comment: SSO can make security management easier, and provides an improved user experience. In the real world, when users have too many IDs and passwords to remember, the system may be less secure.</p> <p>Preference: MS Active Directory preferred for internal and SAML for external.</p> <p>Desired Feedback: System provider shall verify that system is compatible with SSO.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>										
Information Only	Ideal	Core	Mandatory	1	Removal of Generic Accounts										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: At the time of install all generic accounts and default logins shall be removed.</p> <p>Comment: Default accounts and passwords may make the system vulnerable to unauthorized access. Unnecessary accounts shall be removed. For accounts that are required for proper system operation, the system provider shall document all accounts that are required and enable HE to modify them from the default setting.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall confirm that generic accounts and default logins will be removed/modified during installation.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>										
Information Only	Ideal	Core	Mandatory	1	Multi-level Access Control										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: Product provides multiple levels of access control based on user profiles.</p> <p>Comment: Product security shall allow access control to be imposed at multiple levels and shall generally extend to the data field level. For example multi-level denotes the ability to control at the field, page, function and/or module.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify extent of multi-level access control capabilities.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>										
Information Only	Ideal	Core	Mandatory	1	Task or Role Based Access Control										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: Product provides task or role based access control tied to user profiles and group definitions.</p> <p>Comment: Product security shall allow access control to be defined according to tasks or roles that are in turn related to 'groups' defined as part of the user profile administration.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall explain task and role based security controls for function access and data access as well as the manner in which groups are defined to represent these roles.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>										
Information Only	Ideal	Core	Mandatory	1	Task or Role Based Data Import/Export Control										
				<p>Vendors may add any hyperlink to right:</p> <p>Standard: Product provides task or role based data import/export control tied to user profiles and group definitions.</p>	<p>Vendors may add any hyperlink to right:</p>										

Information Only Ideal Core Mandatory	1	<p>Desired Feedback: System provider must verify that they comply with Internet Domain name registration best practices.</p>	<p>may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>					
	System Interfaces		<p>Standard: System Interfaces must be fully documented.</p> <p>Comment: For all functions requiring integration of data between systems, provide interface details including packets types/protocols, packet sizes, expected data flow frequency and volume, source destination systems, latency requirements, and a description of the information being transferred (payload). Also document whether data flows are unidirectional out from system being proposed, unidirectional into the system being proposed, bidirectional initiated by the system being proposed, or bidirectional initiated by systems other than the system being proposed.</p> <p>Preference: WebSphere is the desired Enterprise Service Bus for exchange of data between applications.</p> <p>Desired Feedback: Provide required interface documentation, regardless of whether the integrated systems are within the same security zone or in different security zones.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>				
Scores for Security and Privacy Architecture			Avg Scores		Mandatory Compliance		Vendor Responses include:	Avg. HE Rating
			Ideal	Core	Joint	Failed		10.0
			0	0	0			

Remote Host and Application Service Provider ASP Architecture IF APPLICABLE												
Remote Security					Meets	Will	3rd P	Cust	No	Other		
Information Only	Ideal	Core	Mandatory	1	Data Preservation Provisions							
					<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
<p>Standard: The remote host or ASP shall provide Service Level Agreements (SLAs) regarding the frequency and assuredness of data back-ups along with the provisions and timeliness of restoration/recovery procedures.</p> <p>Comment: Documentation of service levels pertaining to data preservation shall be built into the contract or other agreement documents such as SLAs.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall provide detailed descriptions of data protection and preservation procedures.</p>												
Information Only	Ideal	Core	Mandatory	1	System Access & Performance Requirements							
					<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>							
<p>Standard: The remote host or ASP shall provide Service Level Agreements (SLAs) regarding the availability of the system and the required performance of the system when it is available.</p> <p>Comment: Documentation of service levels pertaining to up-time and performance requirements shall be built into the contract or other agreement documents such as SLAs.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall provide detailed commitments to mutually agreeable up-time and performance standards.</p>												
Scores for Remote Host					Avg Scores			Mandatory Compliance		Vendor Responses include:		Avg. HE Rating 10.0
					Ideal	Core	Joint	Not Applicable				
Summary Across All Categories					Weighted Scores			Mandatory Compliance		Average HE Quality Rating		
					Ideal	Core	Overall	Failed		10		

Hawaiian Electric Information Assurance Assessment Questionnaire		Vendor Response Options			
Project name		XYZ, Inc.			
Vendor Name: XYZ, Inc.		Spreadsheet Template Version is: 2.1 as of 11/1/2015			
Project: Project name					
Date Questionnaire Released: 01/01/15					
Date Questionnaire Due: 01/01/15					
Date of Last Assessment Ratings Added by HE:					
Information Only Ideal Core Mandatory	Hawaiian Electric Technology Standards	Insert '1' for Non-Applicable	Enter the numeric value "1" (not text) as the flag values in the yellow highlighted response options. Do not flag more than 1 (one) box per row. Use Grouping controls on far left side of this spreadsheet to fully open all text and response options. Use beige areas in expanded rows to enter any desired hyperlinks or additional explanation text.		
		System as Proposed Meets Standard	System will meet standard in scheduled upcoming release	System can meet standard using 3rd Party products	System can meet standard with customization

Security and Privacy Architecture				Meets	Will	3rd P	Cust	No	Other
User Access Management									
		1	Authentication and Identification						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: System shall provide or allow for user authentication and identification.</p> <p>Comment: System integrated into the HE environment must provide user ID management and logon functions as well as provide or interface with measures designed to guard against fraudulent transmission and imitative communication deception by establishing the validity of the transmission, message, station or individual. System shall provide authentication and identification for employees and customers.</p> <p>Preference: MS Active Directory preferred.</p> <p>Desired Feedback: System provider shall describe authentication and ID capabilities.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
		1	Use of Integrated Windows Authentication for Web Services						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: If system uses web based components, system shall interface with Integrated Windows Authentication (IWA) to provide for user authentication and identification.</p> <p>Comment: Any new software package must provide user ID management and logon functions and HE desires that its systems use in as much as appropriate, the features of MS Integrated Windows Authentication.</p> <p>Preference: MS Active Directory preferred.</p> <p>Desired Feedback: System provider shall describe the extent of IWA capabilities.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
		1	Internal and External Password Management						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: System must be capable of enforcing strong password handling for all external customer users and for HE users employees or contractors, and the ability to enforce different rules based on account type (e.g. internal, customer, supervisor, administrator)</p> <p>Comment: If Hawaiian Electric's AD or ADFS are not used, vendor system must support the following.</p> <ul style="list-style-type: none"> - Must have capability to have passwords expire on a configurable timeline based on account/user role, with 90-days being the default for internal system users and no expiration date for customers. - Must have configurable complexity requirements based on account/user role, including the ability to require: <ul style="list-style-type: none"> - passwords for internal system accounts must contain three or more of the following groups: <ul style="list-style-type: none"> --- Upper case letters; --- Lower case letters; --- Numbers; --- Special characters ex: \$, @, #, %, etc.); - At least eight (8) characters long; - Must not be common words or combinations of common words; - Must not be the same as the user ID, nor an anagram or variation of the user ID. - Cannot reuse the last (configurable number) passwords by user type, with 10 being the default for internal system users and no re-use restriction for customers. <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must verify that password strength and reset requirements can be configured and enforced.</p>	At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
		1	Customer Privacy Settings- Web						
Information Only	Ideal	Core	Mandatory	Vendors may add any hyperlink to right:					
				<p>Standard: System must not store cookies containing personally identifiable information and use the standard privacy settings of the browser.</p> <p>Comment: The system must also not employ SuperCookies, EverCookies, PermaCookies or any other mechanism that circumvents a user's browser privacy settings.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must verify that cookies containing customer privacy information are not stored. System provider must verify that browser privacy settings are not overridden.</p>	At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.				
		1	Customer Privacy Settings-Mobile						

Information Only	Ideal	Core	Mandatory	1		Vendors may add any hyperlink to right:						
					<p>Standard: System must not override a customer's mobile privacy settings.</p> <p>Comment: If the solution contains a mobile application (smart phone, tablet, etc.) The mobile application must obey the customer's mobile privacy settings for sharing or collection of customer data, such as contacts, geo-location data, or any other information not explicitly entered by the customer into the application.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must verify that mobile application privacy settings are not overridden.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Confirmation of Customer Privacy Settings-Mobile												
Information Only	Ideal	Core	Mandatory	1		Vendors may add any hyperlink to right:						
					<p>Standard: System shall prompt for permission to access customer data.</p> <p>Comment: If the solution contains a mobile application (smart phone, tablet, etc.) The mobile application must prompt before accessing customer data, such as contacts, geo-location data, or any other information not explicitly entered by the customer into the application.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must verify that mobile application requires customer action to approve.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Connection and Data Transport Security							Meets	Will	3rd P	Cust	No	Other
Web browser session protection												
Information Only	Ideal	Core	Mandatory	1		Vendors may add any hyperlink to right:						
					<p>Standard: For web based components, the system supports the Transport Layer Security (TLS) protocol for internet session security.</p> <p>Comment: 1) For web browser based components, the system must support the Transport Layer Security (TLS) protocol for internet browser session security, but the vendor is free to recommend alternative encryption methods as well. 2) Unless otherwise agreed to during system implementation, set a default of using TLS for all web browser pages handling non-public data. 3) Use HTTP Strict Transport Security (HSTS) and the Secure Cookie flag for all browser sessions handling non-public data. 4) Do not include Hawaiian Electric Company non-public data as part of any URL.</p> <p>Preference: TLS v1.2.</p> <p>Desired Feedback: System provider shall verify that system uses TLS where appropriate.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
SSH File Transfer Protocol												
Information Only	Ideal	Core	Mandatory	1		Vendors may add any hyperlink to right:						
					<p>Standard: System shall support large file transfer utilizing a SSH (Secure Shell) File Transfer Protocol (SFTP) Server.</p> <p>Comment: SFTP is the current industry standard for secure file transfer and is a HE mandate for open transfer of HE information.</p> <p>Preference: See "Cryptographic System" requirement for algorithm.</p> <p>Desired Feedback: System provider shall verify system uses SFTP where appropriate.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Inter-process Communication												
Information Only	Ideal	Core	Mandatory	1		Vendors may add any hyperlink to right:						
					<p>Standard: The system shall enforce security policies from the critical side when interprocess communication is initiated from a less privileged application.</p> <p>Comment: Separation of privileges between different applications is critical for minimizing the extent of system vulnerability if a particular application is compromised.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify its ability to configure interprocess communication and privilege separation.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the "Proposal Meets Standard" is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Secure Transport of Company non-Public Data												
						Vendors may add any hyperlink to right:						

Information Only	Ideal	Core	Mandatory	<p>Standard: System shall support secure transmission of all non-public data.</p> <p>Comment: All non-public data must be encrypted in accordance with the standard depicted in the "Cryptographic System" requirement .</p> <p>Preference: See "Cryptographic System" requirement for algorithm.</p> <p>Desired Feedback: System provider shall specify the algorithms used for secure transports.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	<p>1</p> <p>Multi-Tier System Architecture</p>	<p>Vendors may add any hyperlink to right:</p>						
				<p>Standard: The system must be implemented using a minimum of three-tier client-server system architecture consistent with NIST Interagency Report 6926 "The NIST Design Repository Project"</p> <p>Comment: Outlined in NISTIR 6926, Section 2.2 Figure 2, is the standard three-tier client/application/database system architecture. For Hawaiian Electric, each of these tiers will be in its own network security zone. Use of specific vendor products mentioned in NISTIR 6926 is not required – this requirement is just about the high-level multi-tier architecture.</p> <p>See the "Network Security Zones" requirement for additional information about controls to be implemented between these security zones.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall identify and explain how their system and its implementation fulfills this requirement.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	<p>1</p> <p>Network Security Zones</p>	<p>Vendors may add any hyperlink to right:</p>						
				<p>Standard: Vendor must document all data flows required to traverse any electronic security perimeter ESP , whether between multiple internal ESPs or between internal and external ESPs. Requirements for Medium Impact BES Cyber Systems found in NERC CIP-005-5 Electronic Security Perimeters shall be followed.</p> <p>Comment: The network shall be segmented into multiple network security zones, and methods shall be in place to restrict communication between zones. Also see the "System Interfaces" requirement.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe its proposed network architecture and methods for controlling communication between network security zones. Vendor must provide this information regardless of whether the security zone interface devices are provided or maintained by the vendor.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	<p>1</p> <p>Wireless Technology</p>	<p>Vendors may add any hyperlink to right:</p>						
				<p>Standard: Where wireless links are used in the implemented system, the system shall support wireless technologies while remaining compliant with security standards. System shall support link or end-to-end encryption independent of data transmission carrier.</p> <p>Comment: The system shall be compatible with other wireless equipment and shall minimize the potential for signal interception. The system shall be resilient to high-level threats including denial of service, eavesdropping, man-in-the-middle, masquerading, message modification, message replay, and traffic analysis. The system provider shall provide documentation regarding capabilities, requirements, limitations, and security of the system's wireless communication devices.</p> <p>Preference: See "Cryptographic System" requirement for algorithm. WPA-2 Enterprise for 802.11 for authentication.</p> <p>Desired Feedback: System provider shall describe the wireless protocols that are compatible with the provider's devices and demonstrate that known attacks do not compromise receiving devices. Describe their link or end-to-end encryption method and how it is independent of a data provider encryption (e.g. cellular data or microwave).</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Information Only	Ideal	Core	Mandatory	<p>1</p> <p>Network Intrusion Detection</p>	<p>Vendors may add any hyperlink to right:</p>						
				<p>Standard: The system shall allow for means to document that network traffic is monitored, filtered, and alarmed (e.g., alarms for unexpected traffic through network security zones) and provide filtering and monitoring rules on a 24x7x365 basis.</p> <p>Comment: The system shall be configured with an intrusion detection system IDS , which may be either host-based or network-based. The system provider shall provide recommendations for optimal IDS configuration which will enable HE to monitor traffic.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						

				Preference: Supports integration with HE network IDS. Desired Feedback: System provider shall describe its proposed network intrusion detection system architecture and monitoring conditions.	in text at right to highlight other relevant sections of proposal materials.						
Data Storage Security						Meets	Will	3rd P	Cust	No	Other
		1		Elimination of 'Cached' Data							
Information Only	Ideal	Core	Mandatory	Standard: If caching is used with non-public HE data, the cached data shall be encrypted and eliminated when no longer needed. Comment: If confidential data is processed on the system, the system shall provide for the encryption of the cached data and elimination the cached data to assure that residual data is not left in caches or on local hard drives. Preference: No products specifically preferred. Desired Feedback: System provider shall fully explain to what extent confidential information can be targeted and encrypted.	Vendors may add any hyperlink to right: At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
			1	Secure Storage of Company "Confidential-Restricted" Data At Rest.							
Information Only	Ideal	Core	Mandatory	Standard: Regulated data, such as SSNs, financial account numbers, driver's license, and PHI shall be encrypted at rest. PINS and passwords shall be stored hashed and never in clear text. Comment: If confidential restricted data is stored via the system, the data shall be protected against unauthorized access or other exposure via encryption. The encryption (cipher) can be provided via a 3rd Party tool, but shall seamlessly integrate with the system. Preference: See "Cryptographic System" requirement for specifics on algorithms. HE currently uses Vormetric software to encrypt data at rest. Desired Feedback: System provider shall confirm compliance.	Vendors may add any hyperlink to right: At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
Behavior Based Security Controls						Meets	Will	3rd P	Cust	No	Other
		1		Session Termination for Inactivity							
Information Only	Ideal	Core	Mandatory	Standard: The system shall provide for automated session terminations after configurable periods of inactivity. Comment: System shall monitor the activity level of a session and after a designated number of minutes of inactivity, system shall automatically close out the session and require re-logging of at least the password to continue. Preference: No products specifically preferred. Desired Feedback: System provider shall describe how this functionality is implemented and what level of granularity exists for HE to configure settings.	Vendors may add any hyperlink to right: At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
		1		Limit Concurrent Sessions for Same User							
Information Only	Ideal	Core	Mandatory	Standard: The system shall be able to set configurable limits on the number of concurrent sessions allowed for any user. Comment: System shall provide a configurable parameter to set the number of concurrent sessions allowed for any user. If the number is '1', then system would prevent a second log-on by the same user at the same time. Preference: No products specifically preferred. Desired Feedback: System provider shall describe how this functionality is implemented and what level of granularity exists for HE to configure settings.	Vendors may add any hyperlink to right: At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
		1		Lock Out after Unsuccessful Log-On Attempts							
Information Only	Ideal	Core	Mandatory	Standard: The system shall be able to lock out users after a configurable number of unsuccessful log-on attempts. Comment: System shall provide a configurable parameter to set the number of unsuccessful log-in attempts before user is locked out and requires a reset to log-in again. Preference: No products specifically preferred. Desired Feedback: System provider shall confirm its ability to provide and customize a lock-out system for failed log-in attempts.	Vendors may add any hyperlink to right: At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.						
Audit, Alert and Reporting Safeguards						Meets	Will	3rd P	Cust	No	Other
		1		Real-Time Inventory of Users							

Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: The system shall be able to report real time on all active users outlining all of their permissions and roles.</p> <p>Comment: The system shall understand who is accessing the system at all times and be able to provide an immediate and on-going report of those users complete with all permissions granted, permissions being used, task roles granted and task roles being used.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify and explain provisions for tracking and understanding the actions of active users.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Audit History of Access and Changes						
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: The system shall support tracking of new access, modification of access and security permissions for a configurable period.</p> <p>Comment: The system shall enable HE to define specific permissions for individual users, modify permissions over configurable period, and track access by new users.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: The system provider shall describe options for defining permissions and verify the ability to modify these permissions.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Customizable Audit Logging and Reports						
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: The system shall provide customizable audit logs and produce customizable reports detailing user and administrator activities and security events. Event logging must be enabled.</p> <p>Comment: Administrative and user activities can be flagged for logging and subsequent reporting) based on preferences set by HE. Bidder shall provide information on audit logging sufficient for regulatory requirements such as Sarbanes Oxley (SOX), as well as NERC CIP compliance, normal malware/attack indicators, and for analysis toward detection of Advanced Persistent Threats (APT). While NERC CIP compliance is not a regulatory requirement, its provisions are good practice and are used as guidance at HE.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe audit capabilities and associated report capabilities. In particular, provide information on their recommended logging for user/administrator activity, detection of standard malware/attack activity as well as APT.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	User Alert Regarding Prior Log-On						
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: The system shall be able to alert user as to the time and location of previous Log-on(s).</p> <p>Comment: Upon any log-in to the system, a notification shall appear showing the user the last date, time and source IP of the prior log-in(s).</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe what information the system provides to users regarding prior log-in(s).</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the 'Proposal Meets Standard' is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	System Heartbeat Monitoring						
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: Signals from system hardware, software, and firmware shall be monitored to detect abnormalities.</p> <p>Comment: The system shall preferably include regular heartbeat signals, but a last gasp from a failing component may also be used.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall identify viable heartbeat signals for network monitoring and examples of their application.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Privacy Compliance											
				1	Customer Data Purging						
Information Only	Ideal	Core	Mandatory		Vendors may add any hyperlink to right:						
				<p>Standard: The system must allow for the purging or archiving of individual customers data after a period of time as defined by HE.</p>	<p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but</p>						

Information Or	Ideal	Core	Mandatory	<p>Comment: In particular, the system shall allow for configuration and rule definition of either the period of time after which purging or archiving is desired or the definition of individual customers or groups of customers for purging or archiving.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that the system has the capabilities to allow for this flexibility.</p>	<p>vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Customer Communications Preference						
Information Only	Ideal	Core	Mandatory	<p>Standard: System shall allow customers to define their preferred means of communications with HE.</p> <p>Comment: Customers shall be able to configure methods of communication including telephone, email, or text.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that multiple communications channels are enabled throughout the system and that customers can be afforded the option as to which communication channel is preferred.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Customer Opt-out						
Information Only	Ideal	Core	Mandatory	<p>Standard: The system shall manage and track customer Opt-outs. Applies only to systems with which customers directly interact.)</p> <p>Comment: In particular, customer Opt-Out shall store an effective date to provide an audit trail and clarity of the customer's choice at any given period of time.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: The system provider shall verify that customer opt-out, at a minimum, stores an effective date of opt-out. The system provider shall describe how the opt-out works.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Customer Data Control						
Information Only	Ideal	Core	Mandatory	<p>Standard: The system shall allow for customers to exercise meaningful control over their data.</p> <p>Comment: Specifically, customers shall be permitted to opt-out of providing secondary data use; and, customers shall be permitted to retrieve and update their data as desired.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe how the system provides for ad hoc data retrieval and updating as well as use of secondary data opt-out.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Customer Authentication						
Information Only	Ideal	Core	Mandatory	<p>Standard: The system should allow flexibility and choice with respect to customer authentication.</p> <p>Comment: Customers should be able to use 2 factor authentication for their accounts if they desire.</p> <p>Preference: SAML support.</p> <p>Desired Feedback: System provider should describe how the system affords multiple authentication optionality for customers.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
Security Compliance						Meets	Will	3rd P	Cust	No	Other
Information Only	Ideal	Core	Mandatory	<p>Standard: The system should employ Ephemeral Key Exchange.</p> <p>Comment: Describe how your system can be used with ephemeral key exchanges for all key exchanges protecting transmission of highly sensitive data (Hawaiian Electric Confidential, Confidential-Restricted data, and control data) which traverses both an electronic and a physical security perimeter. Describe any performance or support implications of the use of Ephemeral Key Exchanges for your implementation.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe its cryptographic methods, how these support ephemeral key exchange.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Encryption Key Exchange						
Information Only	Ideal	Core	Mandatory	<p>Standard: The system should employ Ephemeral Key Exchange.</p> <p>Comment: Describe how your system can be used with ephemeral key exchanges for all key exchanges protecting transmission of highly sensitive data (Hawaiian Electric Confidential, Confidential-Restricted data, and control data) which traverses both an electronic and a physical security perimeter. Describe any performance or support implications of the use of Ephemeral Key Exchanges for your implementation.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should describe its cryptographic methods, how these support ephemeral key exchange.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>						
				1	Cryptographic System						

Information Only	Ideal	Core	Mandatory	1	<p>Standard: The system shall employ cryptographic system with Validated and Acceptable encryption and key management features.</p> <p>Comment:</p> <ol style="list-style-type: none"> 1. Encryption must be "Validated" per FIPS 140-2 and currently "Acceptable" per NIST SP800-131(series). 2. Product must provide a method to remotely update encryption certificates on an acquirer-defined and configurable frequency without disrupting normal system operation. 3. Product must provide a method of updating the encryption method (algorithm/primitive) to maintain a NIST SP800-131(series) "Acceptable" encryption method throughout the service life of the device, without replacing the entire device. Vendor support must include provision for delivering these updates when needed. <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: Vendor shall describe its cryptographic methods, how these support the availability, integrity, confidentiality, authentication and non-repudiation of information processed by their system, and describe the process for key management throughout the system life cycle.</p> <p>Vendor shall provide information on commercial Cryptographic Key Management Systems (CKMS their product is already integrated with, and provide information about their recommended CKMS.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>	
					Interactive Remote Access		
Information Only	Ideal	Core	Mandatory	1	<p>Standard: The system must adhere to remote access standards found in NERC "Guidance for Secure Interactive Remote Access" and NERC CIP-005-5 R2 as if these systems were Medium Impact BES Cyber Systems.</p> <p>Comment: System shall comply with HE remote access policies and NERC recommendations. While NERC CIP compliance is not a regulatory requirement, its provisions are good practice and are used as guidance at HE.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must describe how remote access standards are defined and followed.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>	
					OWASP Top Ten		
Information Only	Ideal	Core	Mandatory	1	<p>Standard: Vendor must document its design and testing regimen with respect to how each of the issues on the current version of the Open Web Application Security Project (OWASP) Top Ten vulnerabilities are addressed.</p> <p>Comment: OWASP Top Ten is a known and respected level of testing to ensure applications and application implementations are free from well known vulnerabilities. In addition, OWASP provides many configuration guides and 'cheat sheets' for various implementations. Vendor shall describe its utilization of these tools.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider must verify that OWASP Top Ten vulnerabilities are tested for and designed out of their systems and system implementations.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>	
					Cyber Asset Reuse and Disposal		
Information Only	Ideal	Core	Mandatory	1	<p>Standard: Vendor shall ensure that any cyber asset containing HE information which is re-used or disposed of during or at the end of the project shall ensure compliance with NERC CIP-011-5 R2.</p> <p>Comment: Cyber assets containing HE non-public information shall be protected and information deleted by strong methods before being disposed of or re-used. While NERC CIP compliance is not a regulatory requirement, its provisions are good practice and are used as guidance at HE.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: Describe how vendor systems and processes ensure compliance with NERC CIP-011-5 R2.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>	
					Configuration Change Management		
						Vendors may add any hyperlink to right:	

Information Only	Ideal	Core	Mandatory	1	<p>Desired Feedback: System provider shall explain the process by which updates and patches will be developed, tested, and deployed.</p>						
Information Only	Ideal	Core	Mandatory	1	<p>Standard: The system shall allow for the protection of audit logs via back-up and provisions to prevent and detect tampering with logs.</p> <p>Comment: The system shall safeguard audit logs against tampering and shall further record the administrator identify, time and impact of any modification to the logs or their settings. Log server shall reside on an isolated network segment.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall describe provisions for protection of audit logs.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>					
Information Only	Ideal	Core	Mandatory	1	<p>Incident Response Policy</p>						
Information Only	Ideal	Core	Mandatory	1	<p>Standard: The system provider must provide Hawaiian Electric a copy of its cyber-security incident response plan which address issues in a rapid, thorough manner and ensures compliance with relevant US Federal and state regulations, and coordination of response with Hawaiian Electric and other business partners as needed."</p> <p>Comment: Processes must be in place to ensure that any security breach is handled in a manner that complies with relevant US Federal and state regulations. These include Hawaii Revised Statute 487N (Security Breach of Personal Information), which requires customer notification. Any breach of the system provider's system which may compromise HE data, any unauthorized disclosure of HE data, must be reported to HE within 24 hours of incident discovery.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that it will comply with relevant regulations in the case of a cyber-security incident that may compromise HE data. Additionally, the provider shall describe its incident response plan, how frequently the plan is tested and revised, the core response team, processes and timeline for informing customers, any associated service level agreements (SLAs), and any financial or legal commitments to HE in the case of a data breach.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>					
Information Only	Ideal	Core	Mandatory	1	<p>Security Built into Life Cycle QA</p>						
Information Only	Ideal	Core	Mandatory	1	<p>Standard: Vendor must describe how security QA is built into the system development lifecycle (SDLC) and is tested as part of the overall QA process.</p> <p>Comment: Effective security testing requires that appropriate assessments and tests be performed through out the SDLC before security flaws in early stage development are built into system foundations.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider should verify that potential security flaws are identified and security testing is performed during the SDLC process. Description should include what stages of SDLC include security testing and what types of assessments are performed (e.g., source code review, static assessment, dynamic testing, fuzz testing, scanning for malware, etc. .</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>					
Information Only	Ideal	Core	Mandatory	1	<p>Data Return Compliance</p>						
Information Only	Ideal	Core	Mandatory	1	<p>Standard: In compliance with HI state law, the system provider either returns or destroys all HE data at the end of its contract.</p> <p>Comment: Destruction or return of HE data at the end of the service contract is required by HI state law. See Hawaii Revised Statute 487J (Personal Information Protection), 487N (Security Breach of Personal Information), and 487R (Destruction of Personal Information Records .</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that it will return or destroy all HE data at the end of its contract.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>					
Only	Ideal	Core	Mandatory	1	<p>Data Confidentiality and Company Privacy Policy</p>						
Only	Ideal	Core	Mandatory	1	<p>Standard: Vendor must provide and describe their privacy policies in place that govern data collection, sharing, and sale and will not collect, share, or sell any HE data without prior written consent.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations</p>					

Information Only	Ideal Core Mandatory	1	<p>Company Compliance Program</p> <p>Standard: The system provider has programs in place to ensure that its systems are compliant with all relevant US Federal and state privacy laws.</p> <p>Comment: In addition to other privacy laws explicitly addressed in these requirements, the system provider must ensure that its systems are compliant with all other applicable US Federal and state laws.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that it is compliant with US Federal and state privacy laws. In addition, the provider shall describe the internal policies and programs that it has in place to ensure that it identifies and complies with all relevant privacy regulations.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>												
			<p>Comment: All HE data shall be considered confidential. If the system provider wishes to collect, share, or sell any HE data, it may only do so after receiving expressed consent through the appropriate, authorized HE personnel.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall verify that it will not collect, share, or sell any HE with prior written consent from authorized HE personnel. The provider shall also describe its company's privacy policy, particularly regarding data collection, storage, and sale.</p>	<p>should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>												
<p>Scores for Security and Privacy Architecture</p>			<p>Avg Scores</p> <table border="1"> <tr> <td>Ideal</td> <td>Core</td> <td>Joint</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> </tr> </table>			Ideal	Core	Joint	0	0	0	<p>Mandatory Compliance</p> <p>Failed</p>	<p>Vendor Responses include:</p>	<p>Avg. HE Rating</p> <p>10.0</p>		
Ideal	Core	Joint														
0	0	0														

Remote Host and Application Service Provider ASP Architecture IF APPLICABLE						Meets	Will	3rd P	Cust	No	Other												
Remote Security																							
Information Only	Ideal	Core	Mandatory	1	Determination of Security Trust Level																		
					<p>Vendors may add any hyperlink to right:</p> <p>Standard: The remote host or ASP system shall be covered by a SSAE 16 SOC Type II SysTrust/WebTrust or else the host/ASP can provide an independent security assessment (attestation) report by a reputable reporting agency that covers the ASP's application and infrastructure.</p> <p>Comment: Some independent evidence or report shall be provided to HE showing that the provider's security meets professional standards or has otherwise been evaluated. Attestation reports by a qualified professional assessment firm are preferred.</p> <p>Preference: No products specifically preferred.</p> <p>Desired Feedback: System provider shall provide copies or links to attestation reports if available.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>																	
Certification Requirements																							
Information Only	Ideal	Core	Mandatory	1	Sarbanes Oxley's (SOX) IT General Controls																		
					<p>Vendors may add any hyperlink to right:</p> <p>Standard: Vendor must follow SOX IT General Controls</p> <p>Comment: Compliance report must report on the following ITGC's Security Policy</p> <ul style="list-style-type: none"> <input type="checkbox"/> Security Standards <input type="checkbox"/> Access and Authentication <input type="checkbox"/> Network Security <input type="checkbox"/> Monitoring <input type="checkbox"/> Segregation of Duties <input type="checkbox"/> Physical Security <p>Preference: No products specifically preferred</p> <p>Desired Feedback: System provider must provide proof of compliance to SOX IT General Controls.</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>																	
Information Only	Ideal	Core	Mandatory	1	Current Statement on Standards for Attestation Engagements (SSAE) No. 16 Service Organization Control (SOC) Type II report																		
					<p>Vendors may add any hyperlink to right:</p> <p>Standard: Vendor must provide current SSAE 16 SOC Type II report</p> <p>Comment: Report must include the following contents:</p> <ol style="list-style-type: none"> 1. Independent service auditor's report 2. Service organization's description of its system (including controls) 3. Information provided by the independent service auditor; includes a description of the service auditor's tests of operating effectiveness and the results of those tests 4. Other information provided by the service organization (i.e. glossary of terms) <p>Preference: No products specifically preferred</p> <p>Desired Feedback: System provider must provide SSAE 16 documentation</p>	<p>Vendors may add any hyperlink to right:</p> <p>At right, enter any expanded explanation. Typically, a positive response above to the Proposal Meets Standard is sufficient, but vendors may add comments as desired. Responses to any of the other variations should be explained. Also, please pay attention to the Desired Feedback text as it may suggest a helpful response comment. Explanations should be short, but vendors may also use hyperlinks above or references in text at right to highlight other relevant sections of proposal materials.</p>																	
Scores for Remote Host						<table border="1"> <tr> <th colspan="3">Avg Scores</th> <th>Mandatory Compliance</th> </tr> <tr> <td>Ideal</td> <td>Core</td> <td>Joint</td> <td>Failed</td> </tr> <tr> <td>0</td> <td>0</td> <td>0</td> <td></td> </tr> </table>			Avg Scores			Mandatory Compliance	Ideal	Core	Joint	Failed	0	0	0		Vendor Responses include:		Avg. HE Rating
Avg Scores			Mandatory Compliance																				
Ideal	Core	Joint	Failed																				
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											10.0												

Summary Across All Categories	Weighted Scores			Mandatory Compliance	Average HE Quality Rating
	Ideal	Core	Overall		
	0	0	0	Failed	10

REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

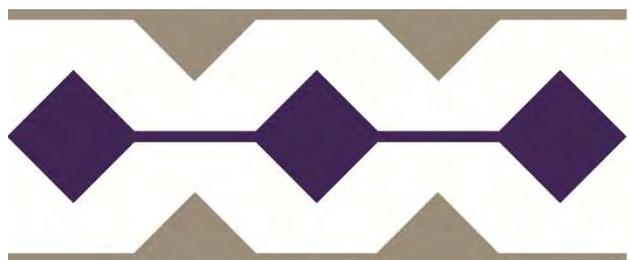
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix L – Grid Service Purchase Agreement



**Hawaiian
Electric**

GRID SERVICES PURCHASE AGREEMENT

[Date: 3/28/2019]

GRID SERVICES PURCHASE AGREEMENT BY AND BETWEEN

[NAME OF SUPPLIER]

AND

[HAWAIIAN ELECTRIC COMPANY, INC. OR HAWAII ELECTRIC LIGHT COMPANY,
INC. OR MAUI ELECTRIC COMPANY, LIMITED]

THIS GRID SERVICES PURCHASE AGREEMENT (“Agreement”) is made this _____ day of _____, _____ (“Execution Date”), by and between [insert one of the following: Hawaiian Electric Company, Inc., Hawai‘i Electric Light Company, Inc., Maui Electric Company, Limited] (“Company”), a Hawai‘i corporation, with principal offices in _____, Hawai‘i and _____ (“Supplier”), a _____, with principal offices in _____, _____, doing business in _____, Hawai‘i.

WHEREAS, Company is an operating electric public utility on the Island of _____, subject to the Hawai‘i Public Utilities Law (Hawai‘i Revised Statutes, Chapter 269) and the rules and regulations of the Public Utilities Commission of the State of Hawai‘i (“PUC”); and

WHEREAS, Company operates the Company System as an independent power grid and must maximize system reliability for its customers by ensuring that its system (including transmission and distribution) meets the requirements for capacity, voltage stability, frequency stability, and reliability standards; and

WHEREAS, Supplier desires to establish and operate an aggregated network of Resources that can provide Grid Services to support the reliable operation of the Company System; and

WHEREAS, Supplier understands the need to use commercially reasonable efforts to maximize the overall reliability of the Company System; and

WHEREAS, Supplier desires to sell to Company certain Grid Services as aggregated by Supplier, and Company agrees to purchase such aggregated Grid Services from Supplier, upon the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the premises and the respective promises herein, Company and Supplier hereby agree as follows:

Contents

ARTICLE 1	Definitions	4
<u>LEGAL</u>	12
ARTICLE 2	Terms and Conditions.....	12
ARTICLE 3	Ownership of Data and Materials	14
ARTICLE 4	Confidentiality.....	15
ARTICLE 5	Source Code	17
ARTICLE 6	Events of Default.....	22
ARTICLE 7	Liquidated Damages; other Remedies	27
ARTICLE 8	Consequential Damages	29
ARTICLE 9	Termination Rights.....	30
ARTICLE 10	Representations, Warranties, and Covenants.....	31
ARTICLE 11	Indemnification	35
ARTICLE 12	Governing Law; Dispute Resolution	40
ARTICLE 13	Insurance	41
ARTICLE 14	Force Majeure.....	43
ARTICLE 15	Equal Employment Opportunity.....	47
ARTICLE 16	Regulatory Approvals.....	48
ARTICLE 17	Assignment.....	48
ARTICLE 18	Notices.....	49
<u>COMMERCIAL</u>	50
ARTICLE 19	Rights and Obligations	51
ARTICLE 20	Payment and Invoicing	58
ARTICLE 21	Security.....	60
ARTICLE 22	Term	63
<u>OPERATIONAL</u>	64
ARTICLE 23	Audit.....	64
ARTICLE 24	Provision of Grid Services.....	64
ARTICLE 25	Testing.....	65
ARTICLE 26	Information Security.....	66
ARTICLE 27	Implementation of GSDS	65
<u>MISCELLANEOUS</u>	72
ARTICLE 28	Miscellaneous	72
APPENDIX 1	PUC Approval of Grid Services Purchase Agreement	74

ARTICLE 1 DEFINITIONS

The following capitalized terms shall have the meanings set forth below:

“Agreement” – Shall have the meaning set forth in the first paragraph on the first page of this agreement.

“Automatic Generation Control” or “AGC” – Equipment that automatically adjusts generation and demand resources in the Company System from a central location to maintain the System’s frequency bias.

“Business Continuity Plans” – Shall have the meaning set forth in Section 27.1(g) (Business Continuity Plan).

“Business Day” – Any day other than a Saturday, Sunday or legal holiday of either the United States or the State of Hawai‘i.

“Calendar Month” – The period commencing at 12:00 a.m. on the first day of any month and terminating at 11:59 p.m. on the last day of the same month.

“Calendar Year” – The period commencing at 12:00 a.m. on January 1 of any year and terminating at 11:59 p.m. on December 31 of the same year.

“Capability” – For each Grid Service, the amount of the Grid Service available for delivery by Supplier to Company during a GS Event.

“Capacity” or “Capacity Grid Service” – Shall have the meaning set forth in Exhibit A-3 (Capacity Grid Service Description and Requirements).

“Claim” – Any claim, suit, action, demand or proceeding.

“Collateral” – Shall have the meaning set forth in Exhibit Q (Security Agreement).

“Commercial and Industrial Customer” or “C&I Customer” – The Customer Class that receives electric service under one or more of the following rate schedules as set forth in Exhibit K (Settlement): Schedule J (General Service Demand), Schedule P (Large Power Service), Schedule DS (Large Power Directly Served Service).

“Committed Forecast” – The prior month’s Operational Forecast available for Dispatch by Company.

“Company” – Shall have the meaning set forth in the first paragraph on the first page of this Agreement.

“Company Data” – Shall have the meaning set forth in Section 3.1 (Ownership of Company Data).

“Company System” – The electric system owned and operated by Company (including any non-utility owned facilities) consisting of power plants, transmission and distribution lines, and related equipment for the production and delivery of electric power to the public.

“Company System Operator” – The individual(s) designated by job position(s) as Company’s representative(s) to act on behalf of Company on all issues regarding scheduling and dispatch of Grid Services.

“Company Trademarks” – Shall have the meaning set forth in Section 19.2(a) (Co-Branding; Use of Company’s Trademarks).

“Company’s Corporate Code of Conduct” – Shall have the meaning set forth in Section 19.3(a) (Compliance with Company Policies).

“Conditions Precedent” – The conditions listed in Section 2.2 (Conditions Precedent to Company’s Obligations).

“Confidential Information” – Shall have the meaning set forth in Section 4.1 (Confidential Information).

“Consumer Advocate” – Shall have the meaning set forth in Section 4.5 (Company’s Disclosure).

“Contract Capability” – The Capability that Supplier has committed to deliver to Company per Grid Service per Customer Class over the Term, which is set forth in Exhibit H (Contract Capability).

“Contract Year” – The 12-month period beginning on the System Integration Date and/or each succeeding 12-month period thereafter.

“Customer Class” – The category to which each customer of Company can be assigned based on the rate class under which the customer receives electric service.

“Day” – A calendar day.

“Deferral Costs” – Shall have the meaning set forth in Section 19.7(b)(2) (Deferral Costs).

“Delivered Capability” – For each Grid Service, the amount of the Grid Service delivered by Supplier to Company during a GS Event.

“Disclosing Party” – Shall have meaning set forth in Section 4.1 (Confidential Information).

“Dispatch” – Company’s right, through supervisory equipment or otherwise, to schedule and direct the supply of the Grid Services consistent with this Agreement.

“Dispute” – Shall have the meaning set forth in Section 12.2 (Good Faith Negotiations).

“Distributed Energy Resources Management System” or “DERMS” – The system of assets owned and operated by Company consisting of servers and network communications equipment that enable (i) the exchange of data as described in Exhibit G (Data, Integration, and Testing Requirements) and Exhibit F (Operational Forecast) and (ii) control functions required for the dispatch of Grid Services. DERMS uses Siemens’ Demand Response Management System (“DRMS”) to provide event based resource management and combines it with the forecast, scheduling and online control components of Siemens’ Distributed Energy Management System (“DEMS”) to control distributed energy and load resources to manage capacity, as well as other uses as determined by Company.

“DPR” – Has the meaning set forth in Section 12.4(a) (Mediation).

“Enabled Capability” – The total capability per Grid Service that Supplier has enabled to provide to Company during each upcoming month.

“Enabled Capability Price” – The price per kW to be paid by Company to Supplier for each increment of enabled capability, which is identified in Exhibit K (Settlement).

“Enabled Capability Projection” – The Grid Service Capability that Supplier expects it can make available for delivery during the next month, shown as an hourly average by weekday and weekend or holiday during the month. The Enabled Capability Projection will reflect enrollment and disenrollment of Participants and enablement and disablement of Resources.

“Energy Management System” or “EMS” – A system of computer-aided tools used by bulk power system operators to monitor, control and optimize system performance.

“Environment” – Shall have the meaning set forth in Section 27.1(c) (Information Security Requirements/Malware).

“Equal Opportunity Clause” – Shall have the meaning set forth in Section 15.1 (Equal Employment Opportunity).

“Event of Default” – An event or occurrence specified in Section 6.1(a) (Default by Supplier) or Section 6.1(b) (Default by Company).

“Execution Date” – The date referred to in the first paragraph on the first page of this Agreement.

“Fast Frequency Response” or “Fast Frequency Response Grid Service” – Has the meaning set forth in Exhibit A-1 (Fast Frequency Response Description and Requirements).

“Force Majeure” – Has the meaning set forth in Section 14.1 (Definition of Force Majeure).

“Governmental Approvals”- All permits, licenses, approvals, certificates, entitlements and other authorizations issued by Governmental Authorities, as well as any agreements with Governmental Authorities, required to fulfill a party’s obligations under this Agreement, including the design, permitting, deployment, operation and maintenance of Supplier’s GSDS, and all amendments, modifications, supplements, general conditions and addenda thereto.

“Governmental Authority” – Any federal, state, local or municipal governmental body; any governmental, quasi-governmental, regulatory or administrative agency, commission, body or other authority exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory or taxing authority or power; or any court or governmental tribunal.

“Grid Services” – The services offered by Supplier to be delivered to Company for use in the Company System pursuant to this Agreement, which will be one or more of the following: Fast Frequency Response Grid Service, Regulating Reserve Grid Service, Capacity Grid Service, and Replacement Reserve Grid Service, which are described in Exhibit A-1 (Fast Frequency Response Grid Service), Exhibit A-2 (Regulating Reserve Grid Service), Exhibit A-3 (Capacity Grid Service, and Exhibit A-4 (Replacement Reserve Grid Service), respectively.

“Grid Services Data” – Shall have the meaning set forth in Section 19.2(f) (Meter Data).

“Grid Services Delivery System” or “GSDS” – The system of assets owned and operated by or obligated to Supplier consisting of servers, network communications equipment, Resource control equipment, sensors and other monitoring devices required to deliver Grid Services to Company. The GSDS does not include any Participant Resources or Company revenue-grade meters.

“Grid Services Event” or “GS Event” – The delivery of a Grid Service at the Company’s command or request, or in the case of a Grid Service where autonomous delivery is required, the appropriate autonomous delivery of the relevant Grid Service.

“Grid Services Event Performance Factor” or “GS Event Performance Factor” – Shall have the meaning set forth in Exhibit K (Settlement).

“Grid Services Tariff” or “GS Tariff” – The set of rules approved by order of the PUC as may be amended from time to time, applicable to any aspect of the Grid Services Delivery System.

“Grid Services Value Ratio” or “GSV Ratio” - Shall have the meaning set forth in Exhibit K (Settlement).

“Hawai‘i General Excise Tax” – The tax on gross income codified under Hawai‘i Revised Statutes Chapter 237 and administered by the Department of Taxation of the State of Hawai‘i and all other similar taxes imposed by any Governmental Authority with respect to payments in the nature of a gross receipts tax, sales tax, privilege tax or the like, but excluding federal or state net income tax.

“HST” – Hawai‘i Standard Time.

“HRS” – Hawai‘i Revised Statutes, as may be amended.

“Indemnified Company Party” – Shall have the meaning set forth in Section 11.1(a) (Indemnification of Company).

“Indemnified Supplier Party” – Shall have the meaning set forth in Section 11.2(a) (Indemnification of Supplier).

“Initial Term” – Shall have the meaning set forth in Section 22.1(a) (Term).

“Laws” – All federal, state and local laws, rules, regulations, orders, ordinances, permit conditions and other governmental actions.

“Letter of Credit” – Shall have the meaning set forth in Section 21.3 (Letter of Credit).

“Liquidated Damages” – Any of the damages provided for in Article 7 (Liquidated Damages; Other Remedies) and any of the damages characterized as liquidated damages in this Agreement.

“Loss” or “Losses” – Any and all direct, indirect or consequential damages, fines, penalties, deficiencies, losses, liabilities (including settlements and judgments), costs, expenses (including reasonable attorneys’ fees and court costs) and disbursements.

“Malware” – Computer software, code or instructions that: (a) intentionally, and with malice intent by a third party, adversely affect the operation, security or integrity of a computing, telecommunications or other digital operating or processing system or environment, including without limitation, other programs, data, databases, computer libraries and computer and communications equipment, by altering, destroying, disrupting or inhibiting such operation, security or integrity; (b) without functional purpose, self-replicate without manual intervention; (c) purport to perform a useful function but which actually performs either a destructive or harmful function, or perform no useful function other than utilize substantial computer, telecommunications or memory resources with the intent of causing harm; or (d) without authorization collect and/or transmit to third parties any information or data; including such software, code or instructions commonly known as viruses, Trojans, logic bombs, worms, adware and spyware.

“Management Meeting” – Shall have the meaning set forth in Section 12.2 (Good Faith Negotiations).

“Monthly Invoice Report” or “MIR” – Shall have the meaning set forth in Exhibit J (Reporting).

“Operational Forecast” – The information shown in the approved Exhibit F (Operational Forecast).

“Participant” – A Residential Customer, SMB Customer, or C&I Customer enrolled by Supplier that contributes one or more Resources to Supplier pursuant to a Participant Service Agreement.

“Participant Data” – All data provided by Supplier to Company and all data provided by Company to Supplier regarding Participants pursuant to this Agreement.

“Participant Incentive and Capability Report” or “PIC” – Shall have the meaning set forth in Exhibit J (Reporting).

“Participant Incentive Credit” – Shall have the meaning set forth in Exhibit K (Settlement).

“Participant Service Agreement” – The agreement between Supplier and Participant, which shall comply with the requirements set forth in this Agreement, including but not limited to the requirements set forth in Section 19.6(b) (Participant Service Agreement).

“Parties” – Supplier and Company, collectively.

“Party” – Supplier or Company.

“Performance Factor” or “Settlement Performance Factor” – Shall have the meaning set forth in Exhibit K (Settlement).

“Performance Payment” – Shall have the meaning set forth in Exhibit K (Settlement).

“Personally Identifiable Information” – The personally identifiable information of individuals, and any information that may be used to track, locate or identify such individuals (or which is otherwise protected by privacy laws), including any automatically generated information (such as IP addresses and other customer identifiers) that identifies or is unique or traceable to a particular individual or computer or other electronic device capable of accessing the internet, including without limitation, name, address, telephone number, social security number, credit card account numbers, email addresses, user identification numbers or names and passwords, which is disclosed to Supplier or its subcontractors in connection with this Agreement by Company employees and individuals who seek to obtain or have obtained products or services from Company, which products and services are used or intended to be used for personal, family or household purposes.

“Portfolio” – Supplier’s collection of Resources.

“Pre-Deferral Estimate” – Shall have the meaning set forth in Section 19.7(b)(2)(C) (Pre Deferral Estimate).

“Prime Rate” -- The “prime rate” of interest, as published from time to time by The Wall Street Journal in the “Money Rates” section of its Western Edition Newspaper (or the average prime rate if a high and a low prime rate are therein reported). The Prime Rate shall change without notice with each change in the prime rate reported by The Wall Street Journal, as of the date such change is reported. Any such rate is a general reference rate of interest, may not be related to any other rate, may not be the lowest or best rate actually charged by any lender to any customer or a favored rate and may not correspond with future increases or decreases in interest rates charged by lenders or market rates in general.

“Proprietary Rights” – Shall have the meaning set forth in Section 28.12 (Proprietary Rights).

“PUC” or “Public Utilities Commission” – Shall have the meaning set forth in the recitals above.

“Receiving Party” – Shall have the meaning set forth in Section 4.1 (Confidential Information).

“Regulating Reserve” or “Regulating Reserve Grid Service” – Shall have the meaning set forth in Exhibit A-2 (Regulating Reserve Grid Service Description and Requirements).

“Replacement Reserve” or “Replacement Reserve Grid Service” – Shall have the meaning set forth in Exhibit A-4 (Replacement Reserve Grid Service Description and Requirements).

“Residential Customer” – A member of the Customer Class that receives electric service under Schedule R (Residential Service) as set forth in Exhibit K (Settlement).

“Resource” – An asset at a Participant’s location enabled by a Supplier under a Participant Service Agreement to provide one or more Grid Services to Company.

“Security” – Shall have the meaning set forth in Section 21.1 (Security for the Performance of Supplier’s Obligations).

“Security Agreement” – The Security Agreement to be executed by Supplier in the form of Exhibit Q (Security Agreement) in favor of Company in accordance with Section 21.2 (Security Agreement).

“Settlement Month” – Shall have the meaning set forth in Exhibit K (Settlement).

“Small and Medium Business Customer” or “SMB Customer” – A member of the Customer Class that receives electric service under Schedule G (General Service Non-Demand) as set forth in Exhibit K (Settlement).

“Source Code” –The human readable source code of the GSDS that consists of narrated documentation related to the compilation, linking, packaging and platform requirements of the GSDS and any other materials or software sufficient to enable a reasonably skilled programmer to build, modify and use the code within a commercially reasonable period of time for the purpose of establishing, operating, and/or maintaining the GSDS and that can reasonably be compiled by a computer for execution.

“Source Code Authorized Use” – Shall have the meaning set forth in Section 5.1(b)(1)(E) (Authorized Use).

“Source Code Escrow” – The escrow established with the Source Code Escrow Agent under the terms of the Source Code Escrow Agreement under which Source Code shall be confidentially deposited by a Source Code Owner for safekeeping and, upon the satisfaction of certain conditions, released to the Company.

“Source Code Escrow Agent” – Iron Mountain Intellectual Property Management, Inc. or other similar escrow agent approved by Company.

“Source Code Escrow Agreement” – A multi-party escrow agreement between Company, Source Code Escrow Agent and any and all Source Code Owners depositing Source Code into the Source Code Escrow which, among other matters, names Company as beneficiary thereunder, and is otherwise acceptable in form and substance to Company.

“Source Code Owner” –The developer and/or owner of the Source Code authorized to deposit the Source Code with the Source Code Escrow Agent upon the terms of the Source Code Escrow Agreement.

“Supervisory Control And Data Acquisition” or “SCADA” – The system that provides remote control and monitoring of Company’s transmission and sub-transmission systems and enables Company to perform real-time control of equipment in the field and to monitor the conditions and status of the Company System.

“Supplier” – The person or entity identified the first paragraph of this Agreement.

“Supplier Agents” – Contractors, consultants, and other third parties retained by Supplier to assist Supplier to perform under this Agreement.

“Supplier Data” – Shall have the meaning set forth in Section 3.1(a) (Other Data).

“System Integration” – The satisfaction of the following conditions: (i) the Conditions Precedent have been met to the satisfaction of Company, (ii) Supplier has provided Company with written notice that Supplier is ready to declare the System Integration Date, (iii) Supplier has passed the GSDS Integration Test described in Exhibit G (Data, Integration, and Testing Requirements) as demonstrated by a written notice (electronic or paper) from Company, and (iv) Supplier’s GSDS is eligible to enroll Participants and to enable and deliver the Grid Services identified in this Agreement as demonstrated by a written notice (electronic or paper) from Company.

“System Integration Date” – The date on which Supplier has achieved System Integration.

“System Integration Date Deadline” – The date that is ninety (90) Days after the PUC Approval Date.

“Tariff” – The tariff applicable to Electric Service of Hawaiian Electric Company, Inc.

“Term” – Shall have the meaning set forth in Section 22.1(a) (Term).

“Termination Assistance Period” – Shall mean a period of time designated by Company, commencing on the date a determination is made that there will be an expiration or termination of this Agreement and continuing for up to ninety (90) days after the effective date of the termination of this Agreement, during which Supplier shall provide the Termination Assistance Services.

“Termination Assistance Services” – Shall mean (1) Supplier's cooperation with Company or any other operator designated by Company in the transition of the GSDS to Company or the other operator designated by Company and (2) any other service requested by Company in order to facilitate the transfer of the GSDS to Company or any other operator designated by Company. Termination Assistance Services might include, by way of example only, training of staff of Company or other operator regarding equipment operation and maintenance, assisting to integrate a Resource to communicate directly with DERMS rather than through Supplier's head end system, assisting to integrate a Resource to communicate with the other operator’s head end system, and assisting with development of Company's new head end system (using Supplier's Source Code) that would communicate with a Resource.

ARTICLE 2 TERMS AND CONDITIONS

2.1 General Purpose of the Agreement

- (a) Overview. Supplier will design, permit, deploy, operate and maintain the Grid Services Delivery System to deliver Grid Services to Company in compliance with all applicable Laws and the terms and conditions of this Agreement. Grid Services from Supplier will be sold to Company under Dispatch for use in the Company System in accordance with the terms of this Agreement. Supplier will carry out its obligations under this Agreement in all respects in a manner that gives full recognition to the fact that, in order for Company to provide service to its customers, Supplier must design, permit, deploy, operate, and maintain the GSDS in order to achieve the System Integration Date by the System Integration Date Deadline and thereafter be available to provide Grid Services accordance with the terms of this Agreement.
- (b) Provision of Grid Services. Company agrees to allow Supplier to operate the GSDS to provide the Grid Services to Company; provided, however, that such operation shall not: (i) adversely affect Company's property or the operations of its customers and customers' property; (ii) present safety hazards to the Company System, Company's property or employees; or Company's customers or the customers' property or employees; (iii) fail to comply with any Laws, the Tariff, Government Approvals or Company's interconnection requirements; or (iv) otherwise fail to comply with this Agreement. Such parallel operation shall be contingent upon the satisfactory completion, as determined solely by Company, of the testing and other requirements set forth in Exhibit G (Data, Integration, and Testing Requirements).

2.2 Conditions Precedent to Company's Obligations. Company's obligation to purchase the Grid Services from Supplier and any and all obligations of Company that are ancillary to that purchase are contingent upon the occurrence of the Conditions Precedent set forth below prior to the System Integration Date or by such earlier date as might be specified. The Company's extension of or failure to enforce the time to meet a Condition Precedent shall not be construed as a waiver of that or any other Condition Precedent or the waiver of any other time to meet a Condition Precedent.

- (a) By the Execution Date, execute the Trademark License Agreement.
- (b) By the Execution Date, execute the Security Agreement.
- (c) By the Execution Date, deliver the Letter of Credit to Company.

- (d) No later than thirty (30) days prior to the System Integration Date Deadline, provide to Company all marketing materials as described in Section 19.2(a)(1) (Marketing Material).
- (e) No later than thirty (30) days prior to the System Integration Date Deadline, provide to Company the form(s) of the Participant Service Agreement(s).
- (f) No later than thirty (30) days prior to the System Integration Date Deadline, provide to Company a successful demonstration of Supplier's portal for engagement with Participants as described in Section 19.2(a)(2) (Participant Engagement Portal).
- (g) No later than thirty (30) days prior to the System Integration Date Deadline, submit to Company copies of any and all required insurance policies (or binders as appropriate) procured by Supplier in accordance with Article 13 (Insurance) to be in effect no later than the System Integration Date or any entry upon the property of Company or any potential Participant related to the GSDS, whichever occurs earlier.
- (h) No later than thirty (30) days prior to the System Integration Date Deadline, deliver all Business Continuity Plans to Company.
- (i) No later than thirty (30) days prior to the System Integration Date Deadline, establish a Source Code Escrow.
- (j) Satisfy all requirements set forth in Exhibit A-1 (Fast Frequency Response Grid Service Description and Requirements), Exhibit A-2 (Regulating Reserve Grid Service Description and Requirements), Exhibit A-3 (Capacity Grid Service Description and Requirements) and Exhibit A-4 (Replacement Reserve Grid Service Description and Requirements) relevant to each of the Grid Services being provided.
- (k) Satisfy the requirements of Exhibit E (Advanced Metering).
- (l) Complete and obtain Company's approval of Exhibit F (Operational Forecast).
- (m) Satisfy the requirements of Exhibit G (Data, Integration, and Testing Requirements).

2.3 Failure to Meet System Integration Date Deadline

- (a) System Integration Date Deadline and Grace Periods. Time is of the essence of this Agreement, and Supplier shall achieve the System Integration Date no later than the System Integration Date Deadline. If Supplier fails to achieve the System Integration Date by the System Integration Date Deadline, Supplier shall

have the following grace periods within which to achieve the System Integration Date:

- (1) Force Majeure. If the failure to achieve the System Integration Date by the System Integration Date Deadline is the result of Force Majeure, Supplier shall be entitled to a grace period following the System Integration Date Deadline equal to the lesser of ninety (90) days or the duration of the Force Majeure.
 - (2) Untimely Performance by Company. If the failure to achieve the System Integration Date by the System Integration Date Deadline is the result of any failure by Company in the timely performance of its obligations under this Agreement, Supplier shall be entitled to a grace period following the System Integration Date Deadline equal to the duration of the period of delay directly caused by such failure in Company's timely performance. Such grace period shall be Supplier's sole recourse for any such failure by Company. For purposes of this Section 2.3(a)(2) (Untimely Performance by Company), Company's performance will be deemed to be timely if it is accomplished within the time period specified in this Agreement with respect to such performance or, if no time period is specified, within a reasonable period of time. The determination of what period of time is reasonable for a particular activity will take into account Company's past practices in similar activities.
- (b) No extension of Term. Notwithstanding anything that might be construed to the contrary, any grace period allowed pursuant to Section 2.3(a)(2) (Untimely Performance by Company) shall not operate to extend the Term as established under Section 22.1(a) (Term).
 - (c) Reporting. At Company's request, Supplier shall provide written reports regarding its progress towards satisfying the Conditions Precedent set forth in Section 2.2 (Conditions Precedent to Company's Obligations) above. Company may prescribe a form for such report.

ARTICLE 3 OWNERSHIP OF DATA AND MATERIALS

- 3.1 Ownership of Company Data. As between Company and Supplier, all Company pricing and incentives under this Agreement, all data prepared by Supplier for delivery to Company, and all data provided by Company to Supplier pursuant to this Agreement, including but not limited to all names, addresses, and rate schedules of Company's customers ("Company Data") is, will be, and shall remain the property of Company. Unless approved by Company, which approval may be withheld in Company's sole discretion, the Company Data shall not (i) be used by Supplier other than in connection

with its performance under this Agreement, (ii) be disclosed, sold, assigned, leased or otherwise provided to third parties by Supplier, or (iii) be commercially exploited by or on behalf of Supplier. The availability of financial compensation to Company shall not preclude injunctive relief to prevent disclosure of Company Data. This provision shall not apply to data acquired independently by Supplier.

(a) Other Data. All data provided by Supplier to Company pursuant to this Agreement and not otherwise owned by Company as provided in Section 3.1 (Ownership of Company Data) (“Supplier Data”) may be used by Company for any Company business purpose, including, without limitation, any business purpose in connection with this Agreement. Supplier hereby grants to Company and its affiliates (and their third party service providers) a non-exclusive, perpetual, royalty-free, irrevocable worldwide right and license to use and access, modify, maintain, enhance and create derivative works based upon the Supplier Data accordingly.

3.2 Ownership of Materials. Except as otherwise provided, any and all drawings, specifications, technical information, reports, studies, documents, materials and business information of any type whatsoever (the “Materials”) provided to Supplier by Company, or prepared or developed by Supplier for or on behalf of Company in the performance of this Agreement (except as provided below), are Company's exclusive property. Any restrictions or claims to ownership or rights included on or within the Materials delivered by Supplier to Company that conflict or are inconsistent with this Section 3.2 (Ownership of Materials) are null and void.

ARTICLE 4 CONFIDENTIALITY

4.1 Confidential Information. Each Party may have a proprietary interest or other need for confidentiality in certain information that may be furnished to the other pursuant to this Agreement or any work performed hereunder. For purposes of this Agreement, Confidential Information means all information regarding Company’s customers, customer lists, any of the data and testing results produced under this Agreement, and information identified by either Party as confidential. The party disclosing such information shall be referred to in this section as the Disclosing Party, and the party receiving such information shall be referred to as the Receiving Party.

4.2 Non-Disclosure. The Receiving Party will hold in confidence and, without the consent of the Disclosing Party, will not use, reproduce, distribute, transmit, or disclose, directly or indirectly, the Confidential Information of the Disclosing Party except as permitted herein. The Receiving Party may only disclose the Confidential Information to its officers, directors, employees, professional advisors and independent contractors and consultants with a direct need to know the information for the implementation or exercise

of rights and/or performance of obligations under or arising from this Agreement, provided that such persons/entities are bound by written confidentiality agreements with terms and conditions that are no less restrictive than those contained in this section.

Without limiting the foregoing, the Receiving Party agrees that it will exercise at least the same standard of care in protecting the confidentiality of the Disclosing Party's Confidential Information as it does with its own Confidential Information of a similar nature, but in any event, no less than reasonable care.

- 4.3 Exceptions. Confidential Information for purposes of this Agreement shall not include information if and only to the extent that the Receiving Party establishes that the information: (i) is or becomes a part of the public domain through no act or omission of the Receiving Party; (ii) was in the Receiving Party's lawful possession prior to the disclosure and had not been obtained by the Receiving Party either directly or indirectly from the Disclosing Party; or (iii) is lawfully disclosed to the Receiving Party by a third party without restriction on disclosure. Confidential Information may also be disclosed by the Receiving Party pursuant to a requirement of a governmental agency, regulatory body or by operation of law, provided that the recipient shall disclose only that part of the Confidential Information that it is required to disclose and shall notify the Disclosing Party prior to such disclosure in a timely fashion in order to permit the Disclosing Party to lawfully attempt to prevent or restrict such disclosure should it so elect, and shall take all other reasonable and lawful measures to ensure the continued confidential treatment of the same by the party to which the Confidential Information is disclosed.
- 4.4 Return or Destruction of Confidential Information. At any time during or after the Term, at the Disclosing Party's written request, the Receiving Party will return to the Disclosing Party within ten (10) Business Days, all copies of Confidential Information in tangible form received from the Disclosing Party in the Receiving Party's or its representatives' possession or certify within such period that it has destroyed such Confidential Information; provided, however, that the Receiving Party's sole obligation with respect to the disposition of any documentation prepared for or by the Receiving Party or its representatives that contains, is based on, or otherwise reflects or is derived from, in whole or in part, any Confidential Information shall be to redact or otherwise expunge all such Confidential Information from such documentation and certify to the Disclosing Party that it has so redacted or expunged the Confidential Information.
- 4.5 Company's Disclosure. Any provision herein to the contrary notwithstanding, Company may disclose Confidential Information, as necessary and appropriate, to the Public Utilities Commission and/or the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawai'i ("Consumer Advocate") (including their respective staffs) provided that such disclosure is made under a protective order entered in the docket or proceeding with respect to which the disclosure will be made or any general protective order entered by the PUC.

- 4.6 Prohibited Activities. Supplier acknowledges that it will derive significant value from Company's provision of Confidential Information that will enable Supplier to optimize the performance of its contractual duties to Company pursuant to this Agreement. Supplier shall not use Company's Confidential Information other than for Company's exclusive benefit.

ARTICLE 5 SOURCE CODE

5.1 Source Code.

- (a) Supplier's Obligation to Provide Source Code. No later than thirty (30) days prior to the System Integration Date Deadline, Supplier shall provide the Source Code in a form reasonably satisfactory to Company. Supplier shall provide updates of any Source Code within thirty (30) Days of being notified that the Source Code has been modified, updated or superseded by the Source Code Owner.
- (b) Escrow Establishment. If Supplier is unable to provide the Source Code directly to Company, due to its agreement with the Source Code Owner or otherwise, Supplier shall arrange for and ensure that the Source Code is deposited into the Source Code Escrow as set forth in Section 5.1(b)(1) (Source Code Escrow) no later than the time periods set forth in Section 5.1(a) (Supplier's Obligation to Provide Source Code). Supplier shall be responsible for all costs associated with establishing and maintaining the Source Code Escrow.
- (1) Source Code Escrow.
- (A) Establishment of Source Code Escrow. Supplier shall arrange for and ensure the deposit of a copy of the current version of the Source Code and any updates to the deposited Source Code with the Source Code Escrow Agent under the terms and conditions of the Source Code Escrow Agreement.
- (B) Release Conditions. Company shall have the right to obtain promptly from the Source Code Escrow Agent one copy of the escrowed Source Code, and any updates, under the following conditions:
- i. A receiver, trustee, or similar officer is appointed, pursuant to federal, state or applicable foreign law, for the Source Code Owner;
 - ii. Any voluntary or involuntary petition or proceeding is instituted, under (x) U.S. bankruptcy laws or (y) any other

bankruptcy, insolvency or similar proceeding outside of the United States, by or against the Source Code Owner; or

iii. Failure of the Source Code Owner to function as an ongoing concern or operate in the ordinary course.

(C) Remedies. If Company has the right to obtain from the Source Code Escrow Agent the escrowed Source Code, and Company finds that Supplier failed to arrange for and/or ensure the update of the Source Code Escrow with the modified and/or updated Source Code as provided in Section 5.1(b)(1)(A) (Establishment of Source Code Escrow) or that the Source Code is incomplete or otherwise unusable, Supplier shall be liable to Company for liquidated damages in the amount of FIVE HUNDRED DOLLARS (\$500) per day for each day Supplier fails to provide such Source Code to Company or such update to the Source Code to Company from the date such Source Code or update was first required to be made to Company. Failure to provide the updated Source Code within thirty (30) Days' notice from Company of a breach of Section 5.1(b)(1)(A) (Establishment of Source Code Escrow) shall constitute an Event of Default pursuant to Section 6.1(a) (Default by Supplier) under this Agreement.

(D) Certification. The Source Code Escrow Agent shall release the Source Code to Company upon receipt of a signed statement by a representative of Company that reads substantially as follows:

The undersigned hereby certifies that (i) I am duly authorized to execute this document on behalf of Hawaiian Electric Company, Inc. ("Hawaiian Electric"), and (ii) Hawaiian Electric is entitled to a copy of the Source Code of the GSDS Pursuant to Section 5.1(b)(1)(B) (Release Conditions) of the Grid Services Purchase Agreement dated _____, between _____ and Hawaiian Electric.

(E) Authorized Use. If Company becomes entitled to a release of the Source Code from escrow, Company may thereafter correct, modify, update and enhance the GSDS for the sole purpose of providing itself the support and maintenance it otherwise would have been entitled to if Supplier had performed under Section 5.1(a) (Supplier's Obligation to Provide Source Code) ("Source Code Authorized Use").

(F) Confidentiality Obligations. Company shall keep the Source Code confidential pursuant to the confidentiality obligations of this Agreement. Company shall restrict access to the Source Code to those employees, independent contractors and consultants of Company who have agreed in writing to be bound by confidentiality and use obligations consistent with those specified in this Agreement, and who have a need to access the Source Code on behalf of Company to carry out their duties for the Source Code Authorized Use. Promptly upon Supplier's request, Company shall provide Supplier with the names and contact information of all individuals who have accessed the Source Code and shall take all reasonable actions required to recover any such Source Code in the event of loss or misappropriation or to otherwise prevent its unauthorized disclosure or use.

(2) Monetary Escrow.

(A) Establishment of Monetary Escrow. If the Source Code is not provided to the Company as set forth in Section 5.1(a) (Supplier's Obligation to Provide Source Code) or Section 5.1(b)(1) (Source Code Escrow) then, no later than the time periods set forth in Section 5.1(a) (Supplier's Obligation to Provide Source Code) for delivery of the Source Code, Supplier shall provide an irrevocable standby letter of credit ("Source Code Recreation Letter of Credit") with no documentation requirement in the amount of \$ _____ substantially in the form attached to this Agreement as Exhibit R (Form of Letter of Credit) from a bank or other financial institution located in the United States with a credit rating of "A-" or better. Such Source Code Recreation Letter of Credit shall be issued for a minimum term of one (1) year. Furthermore, at the end of each year the Source Code Recreation Letter of Credit shall be renewed for an additional one (1) year term so that at the time of such renewal, the remaining term of any such Source Code Recreation Letter of Credit shall not be less than one (1) year. The Source Code Recreation Letter of Credit shall include a provision for at least thirty (30) Days advance notice to Company of any expiration or earlier termination of the Source Code Recreation Letter of Credit so as to allow Company sufficient time to exercise its rights under said Source Code Recreation Letter of Credit if Supplier fails to extend or replace the Source Code Recreation Letter of Credit. In all cases, the

reasonable costs and expenses of establishing, renewing, substituting, canceling, increasing, reducing, or otherwise administering the Source Code Recreation Letter of Credit shall be borne by Supplier.

- (B) Release Conditions. Company shall have the right to draw on the Source Code Recreation Letter of Credit the funds necessary to develop and recreate the GSDS or such part thereof as deemed necessary by Company upon Company's request if Supplier fails to provide the Company the Source Code or updates within the time periods set forth in Section 5.1(a) (Supplier's Obligation to Provide Source Code), Company gives written notice of such failure to Supplier, and Supplier fails to remedy such breach within five (5) Days following receipt of such notice.
- (C) Extend Letter of Credit. If the Source Code Recreation Letter of Credit is not renewed or extended no later than thirty (30) Days prior to its expiration or earlier termination, Company shall have the right to draw immediately upon the full amount of the Source Code Recreation Letter of Credit and to place the proceeds of such draw ("Proceeds"), at Supplier's cost, in an escrow account in accordance with Section 5.2(b)(2) (Monetary Escrow), until and unless Supplier provides a substitute form of letter of credit meeting the requirements of Section 5.1(b)(2) (Monetary Escrow).
- (D) Proceeds Escrow. If Company draws on the Source Code Recreation Letter of Credit pursuant to Section 5.1(b)(2)(C) (Extend Letter of Credit), Company shall, in order to avoid commingling the Proceeds, have the right but not the obligation to place the Proceeds in an escrow account as provided in this Section 5.1(b)(2)(D) (Proceeds Escrow) with a reputable escrow agent acceptable to Company ("Escrow Agent"). Without limitation to the generality of the foregoing, a federally-insured bank shall be deemed to be a "reputable escrow agent." Company shall have the right to apply the Proceeds as necessary to recover amounts Company is owed pursuant to this Section 5.1 (Source Code). To that end, the documentation governing such escrow account shall be in form and content satisfactory to Company and shall give Company the sole authority to draw from the account. Supplier shall not be a party to such documentation and shall have no rights to the Proceeds. Upon full satisfaction of Supplier's obligations under Section 5.1 (Source Code), Company shall instruct the

Escrow Agent to remit to the bank that issued the Source Code Recreation Letter of Credit that was the source of the Proceeds the remaining balance (if any) of the Proceeds. If there is more than one escrow account with Proceeds, Company may, in its sole discretion, draw on such accounts in any sequence Company may select. Any failure to draw upon the Proceeds for any damages or other amounts due Company shall not prejudice Company's rights to recover such damages or amounts in any other manner.

(E) Supplier's Obligation. If the Source Code Recreation Letter of Credit is not sufficient to cover Company's associated consultant fees and other costs and expenses to develop and recreate the Source Code, Supplier shall pay to Company the difference within ten (10) Days of Company's written notice to Supplier.

(F) Model Verification. Supplier shall work with the Company to validate the new Source Code developed by or on behalf of Company within sixty (60) Days of receiving such new Source Code. Supplier shall also arrange for and ensure that Company may obtain new Source Code directly from the Source Code Owner in the event that Supplier ceases to operate as a going concern or is subject to voluntary or involuntary bankruptcy and is unable or unwilling to obtain the new Source Code from the Source Code Owner.

(G) Certification. The terms of the Source Code Recreation Letter of Credit shall provide for a release of the funds, or in the event the funds have been placed into a Proceeds Escrow, the Escrow Agent shall release the necessary funds to Company upon receipt of a signed statement by a representative of Company that reads substantially as follows:

The undersigned hereby certifies that (i) I am duly authorized to execute this document on behalf of Hawaiian Electric Company, Inc. ("Hawaiian Electric"), and (ii) Hawaiian Electric is entitled to \$ _____, pursuant to Section 5.1(b)(2)(B) (Release Conditions) of the Grid Services Purchase Agreement dated _____, between _____, and Hawaiian Electric.

(H) Authorized Use. If Company becomes entitled to a release of funds from escrow, Company may thereafter use such funds to develop, recreate, correct, modify, update and enhance the Source Code for the sole purpose of providing itself the support and

maintenance it otherwise would have been entitled to if it had been provided the Source Code by Supplier under Section 5.1(a) (Supplier's Obligation to Provide Source Code) ("Monetary Authorized Use").

- (I) Supplementary Agreement. The parties stipulate and agree that the escrow provisions in this Section 5.1 (Source Code), and the Source Code Escrow Agreement and Monetary Escrow Agreement are "supplementary agreements" as contemplated in Section 365(n)(1)(B) of the United States Bankruptcy Code ("Code"). In any voluntary or involuntary bankruptcy proceeding involving Supplier, failure by Company to assert its rights to "retain its rights" to the intellectual property encompassed by the Source Code or the funds in the monetary escrow, pursuant to Section 365(n)(1)(B) of the Code, under an executory contract rejected in a bankruptcy proceeding, shall not be construed as an election to terminate the contract by Company under Section 365(n)(1)(A) of the Code.

ARTICLE 6 EVENTS OF DEFAULT

6.1 Events of Default.

- (a) Default by Supplier. The occurrence of any of the following events at any time during the Term shall constitute an Event of Default by Supplier:
- (1) Supplier shall fail to pay Company any amount as and when due under this Agreement (less any amounts disputed in good faith pursuant to Article 12 (Governing Law; Dispute Resolution)) and Supplier does not remedy such non-payment within thirty (30) Days after written demand therefor by Company served upon Supplier;
 - (2) Supplier shall fail to operate, maintain or repair the GSDS in accordance with the terms of this Agreement such that a condition exists in relation to the GSDS that has an adverse physical impact on the Company System or the equipment of Company's customers or other suppliers or which Company reasonably determines presents an immediate danger to such personnel or equipment, and Supplier shall fail to initiate and diligently pursue reasonable action to cure such failure within seven (7) Days after actual receipt by Supplier of demand therefor by Company, provided, that Company may, after providing written notice to Supplier, access the GSDS and any of Supplier's equipment related to the GSDS or Supplier's provision of Grid Services to Company, and undertake such reasonable

action on behalf of Supplier, until either such adverse effect or danger is eliminated or Company is reasonably satisfied that Supplier has, within the aforesaid seven (7) Day period, initiated and is diligently pursuing such reasonable action. Supplier shall bear or reimburse Company, as the case may be, for all reasonable, documented, out-of-pocket costs incurred by Company in connection with such reasonable actions taken by Company on behalf of Supplier as provided herein, and shall cooperate in good faith with Company in providing access to the GSDS and any of Supplier's equipment related to the GSDS or Supplier's provision of Grid Services to Company, in the event Company elects to undertake such action as provided herein;

- (3) Supplier shall (i) abandon the GSDS prior to the date sixty (60) days after System Integration Date Deadline or (ii) fail to maintain continuous service to the extent required by this Agreement for a period of seven (7) or more consecutive Days, the last twenty-four (24) hours of which shall be after notice by Company to Supplier that it is not in compliance with this provision, unless such abandonment or failure is caused by Force Majeure or an Event of Default by Company. For purposes of this Section 6.1(a) (Default by Supplier), abandonment of the GSDS prior to the System Integration Date shall mean the failure by Supplier to proceed with or prosecute in a diligent manner the planning, design, engineering, permitting, deployment (including, without limitation, purchasing, accounting, training and administration) and start-up of the GSDS for a consecutive period of thirty (30) Days, the last ten (10) Days of which shall be after notice from Company to Supplier that it is not in compliance with this provision;
- (4) Supplier shall fail to meet the warranties and guarantees of performance specified in this Agreement, including but not limited to the agreements set forth in Exhibit I (GSDS Service Level Agreement), taking into account any time allowed in Exhibit I (GSDS Service Level Agreement) for cure;
- (5) Without the prior written consent of Company, such consent not to be unreasonably withheld, [*NAME OF ENTITY OPERATING GSDS*] ("Operator") having been previously approved by Company as the operator of the GSDS, is no longer the operator of the GSDS; provided, however, that to the extent that the grant of consent by Company is dependent upon qualifications to carry out the role of operator, Company's consent shall be granted if Company is reasonably satisfied that the substitute operator (i) has the qualifications or has contracted with an

entity having the qualifications to operate the GSDS in a manner consistent with the terms and conditions of this Agreement and (ii) has provided Company with evidence satisfactory to Company of its creditworthiness and ability to perform its financial obligations hereunder (including such guarantees as Company deems appropriate) in a manner consistent with the terms and conditions of this Agreement.

- (6) Supplier shall (i) be dissolved, be liquidated, be adjudicated as bankrupt, or become subject to an order for relief under any federal bankruptcy law; (ii) fail to pay, or admit in writing its inability to pay, its debts generally as they become due; (iii) make a general assignment of substantially all its assets for the benefit of creditors; (iv) apply for, seek, consent to, or acquiesce in the appointment of a receiver, custodian, trustee, examiner, liquidator or similar official for itself or any substantial part of its property; (v) institute any proceedings seeking an order for relief or to adjudicate it as bankrupt or insolvent, or seeking dissolution, winding up, liquidation, reorganization, arrangement, adjustment or composition of it or its debts under any law relating to bankruptcy, insolvency, reorganization or relief of debtors; or (vi) take any action to authorize or effect any of the foregoing actions;
- (7) Without the application, approval or consent of Supplier, a receiver, trustee, examiner, liquidator or similar official shall be appointed for Supplier, or any part of its property, or a proceeding described in Section 6.1(a)(6) (Default by Supplier) shall be instituted against Supplier and such appointment shall continue undischarged or such proceeding shall continue undismissed or unstayed for a period of sixty (60) consecutive Days or Supplier shall fail to file in a timely manner, an answer or other pleading denying the material allegations filed against it in any such proceeding;
- (8) Without the prior written consent of Company, Supplier shall transfer, convey, lose or relinquish its right to own the GSDS to any person;
- (9) The Security provided by Supplier pursuant to the Security Agreement described in Section 21.2 (Security Agreement) becomes substantially impaired and Supplier fails to cure such impairment promptly upon becoming aware of its existence;
- (10) Supplier shall fail to maintain in full force and effect throughout the Term a Letter of Credit in accordance with the provisions of Section 21.3 (Letter of Credit) and such failure continues for forty-five (45) Days after written

notice of noncompliance with this Section 6.1(a) (Default by Supplier) by Company;

- (11) Supplier shall fail to perform a material obligation of this Agreement not otherwise specifically referred to in this Section 6.1(a) (Default by Supplier), which failure has or may reasonably be anticipated to have a material adverse effect on Supplier's delivery of Grid Services to Company in accordance with the terms of this Agreement and which failure shall continue for forty-five (45) Days after written demand by Company for performance thereof;
 - (12) Supplier makes any representation or warranty to Company required by, or relating to Supplier's performance of, this Agreement that is false and misleading in any material respect when made; or
 - (13) Supplier modifies its GSDS control schema in a manner that adversely affects its obligations to Company under this Agreement.
- (b) Default by Company. The occurrence of any of the following at any time during the Term of this Agreement shall constitute an Event of Default by Company:
- (1) Company shall fail to pay Supplier any amount as and when due under this Agreement (less any amounts disputed in good faith pursuant to Article 12 (Governing Law; Dispute Resolution)) and shall fail to remedy such non-payment within forty-five (45) Days after demand therefor from Supplier;
 - (2) Company shall (i) be dissolved, be adjudicated as bankrupt, or become subject to an order for relief under any federal bankruptcy law; (ii) fail to pay, or admit in writing its inability to pay, its debts generally as they become due; (iii) make a general assignment of substantially all its assets for the benefit of creditors; (iv) apply for, seek, consent to, or acquiesce in the appointment of a receiver, custodian, trustee, examiner, liquidator or similar official for itself or any substantial part of its property; (v) institute any proceedings seeking an order for relief or to adjudicate it as bankrupt or insolvent, or seeking dissolution, winding up, liquidation, reorganization, arrangement, adjustment or composition of it or its debts under any law relating to bankruptcy, insolvency, reorganization, or relief of debtors; or (vi) take any action to authorize or effect any of the foregoing actions;
 - (3) Without the application, approval or consent of Company, a receiver, trustee, examiner, liquidator or similar official shall be appointed for

Company or any part of its respective property, or a proceeding described in Section 6.1(b)(2) (Default by Company) shall be instituted against Company and such appointment shall continue undischarged or such proceeding shall continue undismissed or unstayed for a period of sixty (60) consecutive Days or Company shall fail to file timely an answer or other pleading denying the material allegations filed against it in any such proceeding;

- (4) Company shall fail to perform a material obligation of this Agreement not otherwise specifically referred to in this Section 6.1(b) (Default by Company), which failure shall have a material adverse effect on its ability to accept and pay for, or Supplier's ability to deliver, Grid Services in accordance with the terms of this Agreement and which failure shall continue for forty-five (45) Days after written demand by Supplier for performance thereof; or
- (5) Company makes any representation or warranty to Supplier required by, or relating to Company's performance of, this Agreement that is false and misleading in any material respect when made.

6.2 Notice of Default. Upon the occurrence of an Event of Default specified in Section 6.1 (Events of Default), the non-defaulting Party shall deliver to the defaulting Party a written notice that (i) declares that an Event of Default has occurred under Section 6.1 (Events of Default); and (ii) identifies the specific provision or provisions of such Section under which such Event of Default shall have occurred.

6.3 Equitable Remedies. Supplier acknowledges that Company is a public utility and is relying upon Supplier's performance of its obligations under this Agreement, and that Company and/or its customers may suffer irreparable injury as a result of the failure of Supplier to perform any of such obligations, whether or not such failure constitutes an Event of Default or otherwise gives rise to one or more of the remedies set forth in Section 6.2 (Rights and Obligations of the Parties Upon Default). Accordingly, the remedies set forth in Section 6.2 (Rights and Obligations of the Parties Upon Default) shall not limit or otherwise affect Company's right to seek specific performance, injunctions or other available equitable remedies for Supplier's failure to perform any of its obligations under this Agreement, irrespective of whether such failure constitutes an Event of Default.

6.4 Forward Contract. The Parties agree that, under U.S.C. § 362(b)(6), this Agreement is a "forward contract" and Company is a "forward contract merchant" such that upon the occurrence of an event of default by Supplier under Section 6.1(a) (Default by Supplier),

this Agreement may be terminated by Company as provided in this Agreement notwithstanding any bankruptcy petition affecting Supplier.

- 6.5 No Waiver. Notwithstanding any provision herein to the contrary, Company's failure to declare an Event of Default within the time periods provided in this Agreement shall not constitute a waiver of the right to declare such Event of Default if such failure is the direct or indirect result of Supplier's misstatement of a material fact or Supplier's omission of a material fact that is necessary to make any representation, warranty, certification, guarantee or statement made (or notice delivered) by Supplier to Company in connection with this Agreement (whether in writing or otherwise) not misleading.

ARTICLE 7 LIQUIDATED DAMAGES; OTHER REMEDIES

- 7.1 Liquidated Damages Generally. Supplier acknowledges that the Grid Services delivered by Supplier are needed by Company to meet the requirements of Company's customers and thus are critical to the business and operations of Company. Supplier also acknowledges that the damages Company would incur in the event of a failure of Supplier to meet the performance standards under this Agreement would be extremely difficult to quantify. Accordingly, the Parties agree that the Liquidated Damages prescribed in this Agreement (i) constitute a reasonable and good faith estimate of the anticipated or actual loss or damage that would be incurred by Company as a result of such failure, (ii) are not intended as a penalty, (iii) may be invoked by Company to ensure that the GSDS meets the performance standards established under this Agreement, and (iv) constitute Company's sole and exclusive monetary remedy with respect to the matters for which they are assessed, except as otherwise expressly stated; provided, however, that the Company's invoking Liquidated Damages shall not limit or otherwise affect Company's right to seek (aa) monetary damages when Liquidated Damages are not applicable under the terms of this Agreement, and (bb) specific performance or injunctive relief when monetary damages will not provide adequate relief.
- 7.2 When Payment is Due. Payment of any Liquidated Damages described in this Article 7 (Liquidated Damages; Other Remedies) will be due within thirty (30) days of the notice of the assessment of the Liquidated Damages.
- 7.3 Failure to Meet Contract Capability. At the ends of Contract Year 1 (beginning of month 13) and Contract Year 2 (beginning of month 25), Company will evaluate Supplier's compliance with Contract Capability for the Contract Year. If Supplier falls short of the stated Contract Capability for the Contract Year, Supplier will have ninety (90) days to achieve the requisite Contract Capability. If at the end of the ninety (90) days, Supplier has not met its Contract Capability for the applicable Contract Year, Company will be entitled to the following:

- (1) Company will have the right to rescind the purchase of the unmet Contract Capability of each Grid Service for which the Contract Capability standard is not met, resulting in a permanent reduction in Contract Capability for the remainder of the Term; and
- (2) Company, at its sole discretion, may require Supplier to pay Liquidated Damages equal to the shortfall in Contract Capability for the Contract Year at the amount per kW shown on the table below.

O‘ahu				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$58	\$58	\$31	\$4

Maui				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$163	\$163	\$80	\$3

Hawai‘i Island				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$229	\$229	\$29	\$3

- (a) Conditional Contract Capability. The remedies available to Company under Section 7.3 (Failure to Meet Contract Capability) shall not apply to the extent that Supplier is unable to realize the Conditional Contract Capability as identified in Exhibit H (Contract Capability) and so notifies Company within ninety (90) Days following the date of the PUC Approval Order.

7.4 Termination Damages. If this Agreement is terminated by Company in accordance with its terms where Supplier is the defaulting Party, Supplier shall be liable for Liquidated Damages equal to the total Contract Capability at the amount per kW shown on the table below. Payment of any Liquidated Damages described in this Article 7 (Liquidated Damages; Other Remedies) will be due within thirty (30) days of the notice of the assessment of the Liquidated Damages.

O‘ahu				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$58	\$58	\$31	\$4

Maui				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$163	\$163	\$80	\$3

Hawai‘i Island				
GS	Fast Frequency Response	Regulating Reserve	Capacity	Replacement Reserve
Amount per kW	\$229	\$229	\$29	\$3

7.5 Failure to Meet Service Level Agreement. If Supplier fails to meet the Service Level Agreement set forth in Exhibit I (GSDS Service Level Agreement), then Supplier shall be liable for Liquidated Damages as stated in said Exhibit I (GSDS Service Level Agreement).

ARTICLE 8 CONSEQUENTIAL DAMAGES

8.1 Consequential Damages. Except to the extent such damages are included in any Liquidated Damages provided in Article 7 (Liquidated Damages; Other Remedies), indemnification as provided in Article 11 (Indemnification), or are a result of a Party’s gross negligence or willful and intentional misconduct, damages from claims arising from

or related to gross negligence or willful misconduct of a Party or other specified measure of damages expressly provided for herein, neither Party shall be liable to the other Party for special, punitive, indirect, exemplary or consequential damages, whether such damages are allowed or provided by contract, tort (including negligence), strict liability, statute or otherwise. Nothing in this section prevents, or is intended to prevent, Company from proceeding against or exercising its rights with respect to any secured interests in Collateral as provided in this Agreement, including, but not limited to, Company's rights as provided in Article 21 (Security) and Exhibit Q (Security Agreement).

ARTICLE 9 TERMINATION RIGHTS

9.1 Right to Terminate.

- (a) Notice of Termination. If an Event of Default under Section 6.1 (Events of Default) shall have occurred, the non-defaulting Party shall have the right to terminate this Agreement by delivering a written notice of termination, which shall be effective thirty (30) Days from the date such notice is delivered, provided that if such notice of termination is not given within ninety (90) Days of the date such right to terminate is triggered, such termination shall not be effective.

9.2 Termination by Company for an Event of Default by Supplier.

- (a) Company's Assumption of Supplier's Interest. If an Event of Default by Supplier occurs under Section 6.1(a) (Default by Supplier), and if Company delivers to Supplier the notice required under Section 6.2(b)(1) (Notice of Termination) stating that Company has elected to exercise its rights hereunder, Company may elect to assume all right, title and interest of Supplier in the GSDS and this Agreement to the extent it is legally capable of doing so, take over the deployment or operation of the GSDS forthwith and deploy or operate the GSDS during the period in which the foregoing assumption is being perfected, and complete the deployment of and/or operate the same. Upon such assumption, Company shall have no obligation to remedy or cause to be remedied the events that gave rise to the Event of Default under Section 6.1(a) (Default by Supplier) or to pay any delinquent principal, interest, penalties, or other amounts which, but for such Event of Default would not have become due. Despite such assumption of rights by Company, Supplier shall continue to be liable to Company for all obligations to Company arising from events that occurred through the date of Company's assumption; provided, however, that such obligations shall be reduced for this purpose by an amount equal to the net present value of this Agreement. Supplier shall take all action and provide all information necessary to facilitate Company's decision whether to exercise its rights under this Section 9.2(a)

(Company's Assumption of Supplier's Interest) and to implement the exercise of those rights if Company so chooses.

- (b) Supplier's Obligations Upon Termination. If Company elects to exercise its rights under this Section 9.2 (Termination by Company for an Event of Default by Supplier), Supplier shall take all actions as may be necessary, at no cost to Company, (i) to convey to Company free and clear of all liens and encumbrances (other than those of Company) all of Supplier's right, title and interest in and to the GSDS and any and all materials, equipment, design materials and supplies relating to the GSDS and (ii) to migrate or transfer the Participants under contract with Supplier to Company or to another operator designated by Company.

- 9.3 Termination Assistance Services. Upon Company's request and without limiting Supplier's obligations under Section 9.2(a) (Company's Assumption of Supplier's Interest) and Section 9.2(b) (Supplier's Obligations Upon Termination), which shall be performed without cost to Company, Supplier shall, for a period of ninety (90) days after the effective date of the termination, provide Termination Assistance Services to Company at a rate mutually agreed upon between Company and Supplier. The quality and level of performance of the Termination Assistance Services shall be commensurate and in accordance with all of the applicable standards of service required of Supplier during the Term and shall not be degraded during the Termination Assistance Period. After Termination Assistance Period, Supplier shall (i) answer questions from Company regarding the GSDS and the Grid Services performed by Supplier pursuant to this Agreement on an "as needed" basis at Supplier's then-standard billing rates and (ii) promptly deliver to Company all Participant Data not previously delivered to Company and any remaining Company-owned documentation still in Supplier's possession.

ARTICLE 10 REPRESENTATIONS, WARRANTIES, AND COVENANTS

- 10.1 By Supplier. Supplier represents, warrants and covenants (as applicable), as of the Execution Date and for extent of the Term, as follows:
 - (a) Compliance with Laws. Supplier covenants to comply with all applicable Laws, including but not limited to the Grid Service Tariff and decisions and orders of the PUC, in its performance pursuant to this Agreement.
 - (b) Duly Organized. Supplier represents and warrants that it is a [] duly organized, validly existing and in good standing under the laws of the State of []. Supplier has full power, authority and legal right to execute and deliver and perform its obligations under this Agreement. This Agreement has been duly executed and delivered by Supplier and constitutes a legal, valid and binding obligation of Supplier, enforceable in accordance with its terms, except to the extent that such

enforcement may be limited by any bankruptcy, reorganization, insolvency, moratorium or similar laws affecting generally the enforcement of creditors' rights from time to time in effect.

- (c) No Conflict. Supplier represents and warrants that the execution and delivery of, and performance by Supplier of its obligations under this Agreement will not result in a violation of, or be in conflict with, any provision of its articles of incorporation, bylaws, and/or other organizational documents, or result in a violation of, or be in conflict with, or constitute a default or an event which would, with notice or lapse of time, or both, become a default under, any mortgage, indenture, contract, agreement or other instrument to which Supplier is a party or by which it or its property is bound, where such violation, conflict, default or potential default would materially adversely affect Supplier's ability to perform its obligations under this Agreement, or result in a violation of any statute, rule, order of any court or administrative agency, or regulation applicable to Supplier or its property or by which it or its property may be bound, or result in a violation of, or be in conflict with, or result in a breach of, any term or provision of any judgment, order, decree or award of any court, arbitrator or governmental or public instrumentality binding upon Supplier or its property, where such violation, conflict, or breach would have a material adverse effect on Supplier's ability to perform its obligations under this Agreement.
- (d) No Default. Supplier represents and warrants that it is not in default, and no condition exists which, with notice or lapse of time, or both, would constitute a default by Supplier under any mortgage, loan agreement, deed of trust, indenture or other agreement with respect thereto, evidence of indebtedness or other instrument of a material nature, to which it is party or by which it is bound, or in violation of, or in default under, any rule, regulation, order, writ, judgment, injunction or decree of any court, arbitrator or federal, state, municipal or other governmental authority, commission, board, bureau, agency, or instrumentality, domestic or foreign, where such default, condition or violation would have a material adverse effect on Supplier's ability to perform its obligations under this Agreement.
- (e) No Litigation. Supplier represents and warrants that there is no action, suit, proceeding, inquiry or investigation, at law or in equity, or before or by any court, public board or body, pending against such Supplier, or of which Supplier has otherwise received official notice, or which to the knowledge of Supplier is threatened against Supplier, wherein an adverse decision, ruling or finding would have a material adverse effect on Supplier's ability to perform its obligations under this Agreement.

- (f) Experience, Qualifications and Resources. Supplier represents that it has entered into this Agreement in connection with the conduct of its business and it has the experience, qualifications and financial resources necessary to operate and maintain the GSDS in accordance with the terms and conditions of this Agreement.
- (g) No Other Use. On the Execution Date, Supplier represents and warrants to Company that Supplier has not used, granted, pledged, assigned, or otherwise committed any of the Grid Services to be supplied to Company under this Agreement to any entity other than Company.
- (h) Supplier Covenants. Supplier covenants that throughout the term of this Agreement:
 - (i) Supplier will deliver the Grid Services to Company free and clear of all liens, security interests, claims and encumbrances or any interest therein or thereto by any person;
 - (ii) Supplier has been authorized by each Participant, to act as an aggregator on behalf of such Participant and its contracted Resource(s);
 - (iii) Supplier will not use, grant, pledge, assign or otherwise commit any Grid Service or portion thereof to any entity other than Company during the term of this Agreement, except that Supplier may pledge or assign its interest in this Agreement and the assets used in the GSDS to a lender providing financing for the GSDS, provided that Company consents to such financing under terms that provide protection to Company, which consent shall not be unreasonably withheld.
- (i) Continuing Obligation. Supplier's representations, warranties and covenants as set forth in this Article 10 (Representations, Warranties and Covenants) are continuous for the extent of the term of this Agreement. Supplier shall provide notice to Company of the occurrence or nonoccurrence of any event that compromises its representations, warranties and covenants made herein within five (5) Business Days of Supplier's knowledge thereof.

10.2 By Company. Company represents, warrants, and covenants (as applicable) as of the Execution Date and for the extent of the Term, as follows:

- (a) Duly Organized. Company represents and warrants that it is a corporation duly organized, validly existing and in good standing under the laws of the State of Hawai'i. Company has full power, authority and legal right to execute and deliver and perform its obligations under this Agreement. This Agreement has been duly authorized, executed and delivered by Company and constitutes a legal,

valid and binding obligation of Company, enforceable in accordance with its terms, except to the extent that such enforcement may be limited by any bankruptcy, reorganization, insolvency, moratorium or similar laws affecting generally the enforcement of creditors' rights from time to time in effect.

- (b) No Conflict. Company represents and warrants that the execution and delivery of, and performance by Company of its obligations under this Agreement will not result in a violation of, or be in conflict with, any provision of the articles of incorporation or bylaws of Company, or result in a violation of, or be in conflict with, or constitute a default or an event which would, with notice or lapse of time, or both, become a default under, any mortgage, indenture, contract, agreement or other instrument to which Company is a party or by which it or its property is bound, where such violation, conflict, default or potential default would materially adversely affect Company's ability to perform its obligations under this Agreement, or result in a violation of any statute, rule, order of any court or administrative agency, or regulation applicable to Company or its property or by which it or its property may be bound, or result in a violation of, or be in conflict with, or result in a breach of, any term or provision of any judgment, order, decree or award of any court, arbitrator or governmental or public instrumentality binding upon Company or its property, where such violation, conflict, or breach would have a material adverse effect on Company's ability to perform its obligations under this Agreement.
- (c) No Default. Company represents and warrants that it is not in default, and no condition exists which, with notice or lapse of time, or both, would constitute a default by Company under any mortgage, loan agreement, deed of trust, indenture or other agreement with respect thereto, evidence of indebtedness or other instrument of a material nature, to which it is party or by which it is bound, or in violation of, or in default under, any rule, regulation, order, writ, judgment, injunction or decree of any court, arbitrator or federal, state, municipal or other governmental authority, commission, board, bureau, agency, or instrumentality, domestic or foreign, where such default, condition or violation would have a material adverse effect on Company's ability to perform its obligations under this Agreement.
- (d) No Litigation. Company represents and warrants that there is no action, suit, proceeding, inquiry or investigation, at law or in equity, or before or by any court, public board or body, pending against such Company, or of which Company has otherwise received official notice, or which to the knowledge of Company is threatened against Company, wherein an adverse decision, ruling or finding would have a material adverse effect on Company's ability to perform its obligations under this Agreement.

- (e) Continuing Obligation. Company's representations, warranties and covenants as set forth in this Article 10 (Representations, Warranties and Covenants) are continuous for the extent of the term of this Agreement. Company shall provide notice to Supplier of the occurrence or nonoccurrence of any event that compromises its representations, warranties and covenants made herein within five (5) Business Days of Company's knowledge thereof.
- 10.3 Limitations. Nothing in this Agreement shall limit Company's ability to exercise its rights as specified in the Tariff as filed with the PUC, or as specified in General Order No. 7 of the PUC's Standards for Electric Utility Service in the State of Hawai'i, as either may be amended from time to time.

ARTICLE 11 INDEMNIFICATION

11.1 Indemnification of Company.

- (a) Indemnification Against Third Party Claims. In addition to any other indemnification obligations Supplier may have elsewhere in this Agreement, which are hereby incorporated in this Section 11.1(a) (Indemnification Against Third Party Claims), Supplier shall indemnify, defend, and hold harmless Company, its successors, permitted assigns, affiliates, controlling persons, directors, officers, employees, servants and agents, including but not limited to contractors, subcontractors and the employees of any of them (collectively, "Indemnified Company Party"), from and against any Losses suffered, incurred or sustained by any Indemnified Company Party or to which any Indemnified Company Party becomes subject, resulting from any Claim (whether or not well founded, meritorious or unmeritorious) by a third party not controlled by, or under common ownership and/or control with, Company relating to (i) Supplier's development, permitting, deployment, ownership, operation and/or maintenance of the GSDS; (ii) any breach made by Supplier of its representations, warranties and covenants in Article 10 (Representations, Warranties and Covenants); (iii) Supplier's obligation to its Participant(s) pursuant to any Participant Service Agreement entered into by and between Supplier and its Participant(s); or (iv) any actual or alleged personal injury or death or damage to property, in any way arising out of, incident to, or resulting directly or indirectly from the acts or omissions of any Indemnified Supplier Party or its agents or subcontractors, except as and to the extent that any of the foregoing such Loss is attributable to the gross negligence or willful misconduct of an Indemnified Company Party.
- (b) Indemnification for Failure to Comply with Laws. Any Losses incurred by an Indemnified Supplier Party for noncompliance by Supplier or an Indemnified Supplier Party with applicable Laws shall not be reimbursed by Company but

shall be the sole responsibility of Supplier. Supplier shall indemnify, defend and hold harmless each Indemnified Company Party from and against any and all Losses in any way arising out of, incident to, or resulting directly or indirectly from the failure of Supplier to comply with any Laws.

- (c) Indemnification Against Joint Employer Claims. Supplier shall indemnify, defend, and hold harmless the Indemnified Company Parties, from and against all Claims that any personnel supplied by Supplier, its affiliates and/or their subcontractors pursuant to this Agreement is an employee or agent of Company, to the extent such Claims arise from the acts or omissions of Supplier, including, but not limited to; (i) the cost of any additional compensation or employee benefits Company is required to provide to or pay for on behalf of any personnel supplied by Supplier, its affiliates and/or their subcontractors; and (ii) any Claim brought by any personnel supplied by Supplier, its affiliates and/or subcontractors against Company based upon the employer-employee relationship, to the extent such Claims arise from the acts or omissions of Supplier, and except for any such Claims and related Losses that arise out of or result from any acts or omissions of the Company.
- (d) Notice. If Supplier shall obtain knowledge of any Claim subject to Section 11.1(a) (Indemnification Against Third Party Claims), Section 11.1(b) (Indemnification Against Third Party Claims Compliance with Laws) or otherwise under this Agreement, Supplier shall give prompt notice thereof to Company, and if Company shall obtain any such knowledge, Company shall give prompt notice thereof to Supplier.
- (e) Indemnification Procedures.
- (1) Notice. In case any Claim subject to Section 11.1(a) (Indemnification Against Third Party Claims) or Section 11.1(b) (Indemnification Against Third Party Claims Compliance with Laws) or otherwise under this Agreement, shall be brought against an Indemnified Company Party, Company shall notify Supplier of the commencement thereof and, provided that Supplier has acknowledged in writing to Company its obligation to an Indemnified Company Party under this Section 11.1(e)(1) (Indemnification of Company), Supplier shall be entitled, at its own expense, acting through counsel acceptable to Company, to participate in and, to the extent that Supplier desires, to assume and control the defense thereof; provided, however, that Supplier shall not compromise or settle a Claim against an Indemnified Company Party without the prior written consent of Company which consent shall not be unreasonably withheld.

- (2) No Right to Assume. Supplier shall not be entitled to assume and control the defense of any such Claim subject to Section 11.1(a) (Indemnification Against Third Party Claims), Section 11.1(b) (Indemnification Against Third Party Claims Compliance with Laws) or otherwise under this Agreement, if and to the extent that, in the opinion of Company, such Claim involves the potential imposition of criminal liability on an Indemnified Company Party or a conflict of interest between an Indemnified Company Party and Supplier, in which case Company shall be entitled, at its own expense, acting through counsel acceptable to Supplier to participate in any Claim, the defense of which has been assumed by Supplier. Company shall supply Supplier with such information and documents requested by Supplier as are necessary or advisable for Supplier to possess in connection with its participation in any Claim to the extent permitted by this Section 11.1(e)(2) (No Right to Assume). An Indemnified Company Party shall not enter into any settlement or other compromise with respect to any Claim without the prior written consent of Supplier, which consent shall not be unreasonably withheld or delayed.
- (3) Subrogation. Upon payment of any Losses by Supplier pursuant to Section 11.1 (Indemnification of Company) or other similar indemnity provisions contained herein to or on behalf of Company, Supplier, without any further action, shall be subrogated to any and all claims that an Indemnified Company Party may have relating thereto.
- (4) Cooperation. Company shall fully cooperate and cause all Company Indemnified Parties to fully cooperate, in the defense of or response to any Claim subject to Section 11.1 (Indemnification of Company).

11.2 Indemnification of Supplier.

- (a) Indemnification Against Third Party Claims. Company shall indemnify, defend, and hold harmless Supplier, its successors, permitted assigns, affiliates, controlling persons, directors, officers, employees, servants and agents, including but not limited to contractors, subcontractors and their employees of any of them (collectively, "Indemnified Supplier Party"), from and against any Losses suffered, incurred or sustained by any Indemnified Supplier Party or to which any Indemnified Supplier Party becomes subject, resulting from, arising out of, or relating to any Claim by a third party not controlled by or under common ownership and/or control with Supplier (whether or not well founded, meritorious or unmeritorious) relating to any actual or alleged personal injury or death or damage to property, in any way arising out of, incident to, or resulting directly or

indirectly from the acts or omissions of Company, except to the extent that any such Loss is attributable to the gross negligence or willful misconduct of an Indemnified Supplier Party.

(1) Indemnity by Company. To the full extent allowed by applicable law, Company will indemnify and hold harmless the Indemnified Supplier Parties, on demand, from and against any and all Losses incurred by any of them as a result of the following third-party claims, and shall defend the Indemnified Supplier Parties against the following claims:

(A) all claims that any item, information, system, deliverable, software or service provided or used in relation to the Grid Services provided by Company (or any Company affiliate, agent, contractor, subcontractor or representative) to Supplier pursuant to this Agreement, or Supplier's use thereof (or access or other rights thereto) authorized by Company in any circumstance, infringes or misappropriates a United States patent, trademark or copyright of a third party provided however, Company shall have no liability or obligation to any of the Indemnified Supplier Parties under this Section 11.2(a)(1)(A) (Indemnity by Company) to the extent the claim of infringement or misappropriation is caused by such Indemnified Supplier Party's unauthorized use or modification of such item or such Indemnified Supplier Party's use of such item in combination with any product or equipment not owned, developed, contemplated or authorized by Company or with respect to any item provided by Company. If any deliverable or item provided by Supplier hereunder is held to constitute, or in Company's reasonable judgment is likely to constitute, an infringement or misappropriation, Company will in addition to its indemnity obligations, at its expense and option, and after consultation with Supplier regarding Supplier's preference in such event, either procure the right for Indemnified Supplier Parties to continue using such deliverable or item, replace such deliverable or item with a non-infringing equivalent, provided that such replacement does not result in a degradation of the functionality, performance or quality of the deliverable or item, modify such deliverable or item, or have such deliverable or item modified, to make it non-infringing, provided that such modification does not result in a degradation of the functionality, performance or quality of the deliverable or item, or create a feasible workaround that would not have any adverse impact on the Company. THIS IS THE EXCLUSIVE REMEDY

AVAILABLE TO SUPPLIER AS WELL AS COMPANY'S
ENTIRE OBLIGATION AND LIABILITY IN CASE OF AN
INFRINGEMENT OR MISAPPROPRIATION CLAIM.

- (b) Knowledge of Claim. If Company shall obtain knowledge of any Claim subject to Section 11.2(a) (Indemnification Against Third Party Claims) or otherwise under this Agreement, Company shall give prompt notice thereof to Supplier, and if Supplier shall obtain any such knowledge, Supplier shall give prompt notice thereof to Company.
- (c) Indemnification Procedures.
- (1) Notice. In case any action, suit or proceeding subject to Section 11.2(a) (Indemnification Against Third Party Claims), or otherwise under this Agreement, shall be brought against an Indemnified Supplier Party, Supplier shall notify Company of the commencement thereof and, provided that Company has acknowledged in writing to Supplier its obligation to an Indemnified Supplier Party under Section 11.2 (Indemnification of Supplier), Company shall be entitled, at its own expense, acting through counsel acceptable to Supplier, to participate in and, to the extent that Company desires, to assume and control the defense thereof, provided, however, Company shall not compromise or settle a Claim against an Indemnified Supplier Party without the prior written consent of Supplier which consent shall not be unreasonably withheld.
- (2) Assumption and Control of Defense. Company shall not be entitled to assume and control the defense of any such Claim subject to Section 11.2 (Indemnification Against Third Party Claims), or otherwise under this Agreement, if and to the extent that, in the opinion of Supplier, such Claim involves the potential imposition of criminal liability on an Indemnified Supplier Party or a conflict of interest between an Indemnified Supplier Party and Company, in which case Supplier shall be entitled, at its own expense, acting through counsel acceptable to Company, to participate in any Claim the defense of which has been assumed by Company. An Indemnified Supplier Party shall supply Company with such information and documents requested by Company as are necessary or advisable for Company to possess in connection with its participation in any Claim, to the extent permitted by this Section 11.2(c)(2) (Assumption and Control of Defense). An Indemnified Supplier Party shall not enter into any settlement or other compromise with respect to any Claim without the prior written consent of Company, which consent shall not be unreasonably withheld or delayed.

- (3) Subrogation. Upon payment of any Losses by Company pursuant to Section 11.2 (Indemnification of Supplier) or other similar indemnity provisions contained herein to or on behalf of Supplier, Company, without any further action, shall be subrogated to any and all claims that an Indemnified Supplier Party may have relating thereto.
- (4) Cooperation. Supplier shall fully cooperate and cause all Supplier Indemnified Parties to fully cooperate, in the defense of or response to any Claim subject to Section 11.2 (Indemnification of Supplier).

ARTICLE 12 GOVERNING LAW; DISPUTE RESOLUTION

- 12.1 Governing Law, Jurisdiction, and Venue. Interpretation and performance of this Agreement shall be in accordance with, and shall be controlled by, the laws of the State of Hawai‘i, other than the laws thereof that would require reference to the laws of any other jurisdiction. By entering into this Agreement, Supplier submits itself to the personal jurisdiction of the courts of the State of Hawai‘i and agrees that the proper venue for any civil action arising out of or relating to this Agreement shall be Honolulu, Hawai‘i.
- 12.2 Good Faith Negotiations. Except as otherwise expressly set forth in this Agreement, before submitting any claims, controversies or disputes (“Dispute(s)”) under this Agreement to the Dispute Resolution Procedures set forth in Section 12.4 (Dispute Resolution Procedures), the presidents, vice presidents, or authorized delegates from both Supplier and Company having full authority to settle the Dispute(s), shall personally meet in Hawai‘i and attempt in good faith to resolve the Dispute(s) (“Management Meeting”), within thirty (30) days after a request by either Party.
- 12.3 Continuity of Service. Supplier acknowledges that the timely and complete performance of its obligations pursuant to this Agreement is critical to the business and operations of Company. Accordingly, in the event of a Dispute between Company and Supplier, Supplier shall continue to perform its obligations under this Agreement in good faith during the resolution of such Dispute unless and until this Agreement is terminated in accordance with the provisions hereof.
- 12.4 Dispute Resolution Procedures.
 - (a) Mediation. Except as otherwise expressly set forth in this Agreement and subject to Section 12.2 (Good Faith Negotiations), any and all Dispute(s) arising out of or relating to this Agreement, (i) which remain unresolved for a period of twenty (20) Days after the Management Meeting takes place or (ii) for which the Parties fail to hold a Management Meeting within sixty (60) Days of the date that a Management Meeting was requested by a Party, may upon the agreement of the

Parties, first be submitted to confidential mediation in Honolulu, Hawai‘i pursuant to the administration by, and in accordance with the Mediation Rules, Procedures and Protocols of, Dispute Prevention & Resolution, Inc. (or its successor) or, in their absence, the American Arbitration Association (“DPR”) then in effect. If the Parties agree to submit the dispute to confidential mediation, the Parties shall each pay fifty (50) percent of the cost of the mediation (i.e., the fees and expenses charged by the mediator (“Mediator” and DPR) and shall otherwise each bear their own costs and attorney’s fees. If settlement of the Dispute(s) is not reached within sixty (60) Days after commencement of the mediation, either Party may initiate formal action.

- (b) Procedures for Appointing a Mediator. The Parties hereby agree that the choice of Mediator, process and procedure for the mediation and any desired outcome from the mediation shall be as the Parties agree in conjunction with their agreement to enter into the mediation. If the Parties cannot agree upon such matters within sixty (60) Days (or as the Parties may subsequently agree), either Party may withdraw from the mediation process and proceed to initiate formal action.

ARTICLE 13 INSURANCE

13.1 Workers’ Compensation.

- (a) Supplier and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times during the term of this Agreement, Workers’ Compensation and other similar insurance required by state or federal laws. In the event that Supplier fails to maintain such insurance as required by law, Supplier acknowledges and agrees that it will not seek or and that it is not entitled to any coverage under Company’s insurance. Permissible self-insurance will be acceptable subject to submission of a copy of appropriate governmental authorization and qualification by Supplier.
- (b) In addition, if Workers’ Compensation is required, Supplier and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times during the term of this Agreement, Employers Liability insurance with minimum limits for bodily injury from accident of ONE MILLION DOLLARS (\$1,000,000) - each accident; for bodily injury from disease of ONE MILLION DOLLARS (\$1,000,000) - each employee; and for bodily injury from disease of ONE MILLION DOLLARS (\$1,000,000) - each policy limit.
- (c) If there is an exposure for injury to Supplier’s employees under the U.S. Longshoremen’s and Harbor Workers’ Compensation Act, the Jones Act or other

laws, regulations or statutes applicable to maritime employees, coverage shall be included for such injuries or claims.

- 13.2 Commercial General Liability Insurance. Supplier and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times during the term of this Agreement, Commercial General Liability insurance with a bodily injury and property damage combined single limit of liability of at least FIVE MILLION DOLLARS (\$5,000,000) for any occurrence. Such insurance will include coverage in like amount for products/completed operations, contractual liability, and personal and advertising injury. “Claims made” policies are not acceptable under this Section unless coverage is continued for three (3) years after completion of the contract.
- 13.3 Automobile Liability Insurance. Supplier and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full effect at all times during the term of this Agreement, Automobile Liability insurance with a bodily injury and property damage combined single limit of at least ONE MILLION DOLLARS (\$1,000,000) per accident.
- 13.4 Cyber/Network Security/Privacy Liability Insurance. Provider and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times during the term of this Agreement Cyber/Network Security/Privacy Liability insurance, with minimum limits of FIVE MILLION DOLLARS (\$5,000,000) per occurrence and per policy aggregate. Such insurance shall include, but not be limited to cyber and network risks such as security breaches, data theft or loss, unauthorized access/use, negligent transmission of a computer virus, identity theft, and any invasion, violation, breach or infringement of any right to privacy resulting from both electronic and non-electronic events with respect to any confidential or non-public personal information. The retroactive coverage date of the insurance policy shall be no later than the Effective Date of this Agreement. Such insurance shall remain in effect after termination of this Agreement in order to respond to any claims or losses subsequently made. Insurance required by this subsection shall be maintained in full effect at all times during the term of this Agreement and for three (3) years thereafter.
- 13.5 Builders’ Risk Insurance. Supplier may be required to provide Builders’ Risk Insurance during the course of construction of this Agreement. This insurance will cover the interests of Company and Supplier and its subcontractors. If Builders’ Risk Insurance is required, the terms of such coverage shall be acceptable to Company.
- 13.6 Excess and/or Umbrella Insurance. The limits for the above coverages may be satisfied through the use of umbrella and/or excess liability insurance sufficient to meet these requirements.

- 13.7 Waiver of Subrogation. Supplier and anyone acting under its direction will cause its insurers to waive all rights of subrogation which Supplier or its insurers may have against Company, Company's agents, or Company's employees.
- 13.8 Company as Additional Insured. Insurance policies (except Workers' Compensation) providing the insurance coverage required in this Agreement will name Company, Company's agents, and/or Company's employees as an additional insured, as appropriate. Coverage must be primary in respect to the additional insured. Any other insurance carried by the Company will be excess only and not contribute with this insurance.
- 13.9 Subcontractors. Supplier shall ensure that each subcontractor shall either be covered by the insurance procured by Supplier, or by insurance procured by the subcontractor. Should a subcontractor be responsible for procuring its own insurance, Supplier shall ensure that each such subcontractor shall, commensurate with the work performed by such subcontractor, procure and maintain insurance required of Supplier, except that, as between Supplier and Company, Supplier shall have the sole responsibility for determining the limits of coverage to require such subcontractors to obtain in accordance with reasonably prudent business practices. All such insurance shall be provided for at the sole cost of Supplier or its subcontractors.
- 13.10 Certificates of Insurance. Concurrent with the execution of this Agreement or as agreed upon by Company, Supplier shall provide Company with a certificate of insurance ("COI") certifying that each of the foregoing insurance coverages is in force. If the COI is not affixed to this Agreement, then Supplier shall provide a copy of the COI (and any subsequent updates during the term of this Agreement or as required by Company) to Company's Legal Department (at: PO Box 2750, Honolulu HI 96840-001). The COI MUST reference this Agreement contract number and the date of this Agreement and it shall reference Supplier by name. Supplier will immediately provide written notice to the Company should any of the insurance policies required herein be cancelled, limited in scope, or not renewed upon expiration. Receipt of any certificate showing less coverage than requested is not a waiver of the Supplier's obligation to fulfill the requirements.
- 13.11 Revisions to Insurance Coverages. Company reserves the right to add or modify these requirements, including limits, based on the nature of the risk, prior experience, insurer, coverage, or other circumstances. In which event, Supplier shall obtain such required insurance.

ARTICLE 14 FORCE MAJEURE

- 14.1 Definition of Force Majeure. The term "Force Majeure" as used in this Agreement means any occurrence that:

- (a) In whole or in part delays or prevents a Party's performance under this Agreement;
- (b) Is not the direct or indirect result of the fault or negligence of that Party;
- (c) Is not within the control of that Party notwithstanding such Party having taken all reasonable precautions and measures in order to prevent or avoid such event; and
- (d) The Party has been unable to overcome by the exercise of due diligence.

14.2 Events That Could Qualify as Force Majeure. Subject to the foregoing, events that could qualify as Force Majeure include, but are not limited to, the following:

- (a) acts of God, flooding, lightning, landslide, earthquake, fire, drought, explosion, epidemic, quarantine, storm, hurricane, tornado, volcano, other natural disaster or unusual or extreme adverse weather related events;
- (b) war (declared or undeclared), riot or similar civil disturbance, acts of the public enemy (including acts of terrorism), sabotage, blockade, insurrection, revolution, expropriation or confiscation; or
- (c) except as set forth in Section 14.3 (Exclusions from Force Majeure), strikes, work stoppage or other labor disputes (in which case the affected Party shall have no obligation to settle the strike or labor dispute on terms it deems unreasonable).

14.3 Exclusions From Force Majeure. Force Majeure, however, does not include any of the following:

- (a) A strike, work stoppage, or labor dispute limited only to any of the Indemnified Supplier Parties or any other third party employed by Supplier to work on the Project;
- (b) any acts or omissions of any third party, including, without limitation, any vendor, materialman, customer, or supplier of Supplier, unless such acts or omissions are themselves caused by an event of Force Majeure as herein defined;
- (c) any full or partial reduction in the Supplier's provision of Grid Services that is caused by or arises from a mechanical or equipment breakdown or other conditions attributable to normal wear and tear;
- (d) changes in market conditions that affect the cost of the Supplier's supplies, or that otherwise render this Agreement uneconomic or unprofitable for the Supplier;

- (e) Supplier's inability to obtain Government Approvals or approvals of any type for the development, deployment, ownership, operation, or maintenance of the GSDS, or Supplier's loss of any such Governmental Approvals once obtained;
- (f) the lack of wind, sun or any other resource of an inherently intermittent nature;
- (g) Supplier's inability to obtain sufficient power or materials to operate the GSDS, except if Supplier's inability to obtain sufficient power or materials is caused by an event of Force Majeure as herein defined;
- (h) Supplier's failure to obtain additional funds, including funds authorized by a state or the federal government or agencies thereof, to supplement the payments made by Company pursuant to this Agreement;
- (i) a forced outage except where such forced outage is caused by an event of Force Majeure as herein defined;
- (j) litigation or administrative or judicial action pertaining to Supplier's interest in this Agreement, the GSDS, Supplier's relationship to its Participants, any Government Approvals, or the design, development, deployment, ownership, maintenance or operation of the GSDS; or
- (k) any full or partial reduction in either the ability of the GSDS to deliver the Grid Services or in the ability of Company to accept the Grid Services which is caused by any action or inaction of a third party, including but not limited to any vendor or supplier of the Supplier or Company, except to the extent such action or inaction is caused by an event of Force Majeure as herein defined.

14.4 Consequences of Force Majeure.

- (a) Satisfaction of Certain Conditions. Section 14.5 (Effect of Force Majeure on Events of Default) and Section 14.6 (Effect of Force Majeure) defer or limit certain liabilities of a Party for delay and/or failure in performance to the extent such delay or failure is the result of conditions or events of Force Majeure; provided, however, that a Non-performing Party is only entitled to such limitations or deferrals of liabilities as and to the extent the following conditions are satisfied:
 - (i) The non-performing Party gives the other Party, within forty-eight (48) hours after the Force Majeure condition or event begins, written notice stating that such non-performing Party considers such condition or event to constitute a Force Majeure and describing the particulars of such Force Majeure condition or event;

- (ii) The non-performing Party gives the other Party, within fourteen (14) Days after the Force Majeure condition or event begins, a written explanation of the Force Majeure condition or event and its effect on the non-performing Party's performance, which explanation shall include evidence reasonably sufficient to establish that the occurrence constitutes Force Majeure;
 - (iii) The suspension of performance is of no greater scope and of no longer duration than is required by Force Majeure;
 - (iv) The non-performing Party proceeds with due diligence to remedy its inability to perform and provides weekly progress reports to the other Party describing actions taken to end or minimize the effects of the Force Majeure and the anticipated duration of the Force Majeure; and
 - (v) When the non-performing Party is able to resume performance of its obligations under this Agreement, such Party shall give the other Party written notice to that effect.
- (b) Duty to Mitigate. The Party so excused shall make all reasonable efforts, to cure, mitigate or remedy such Force Majeure event. Any payments due as compensation for the obligation so excused shall also be excused for so long as the obligation is not performed due to Force Majeure. The burden of proof shall be on the Party claiming Force Majeure pursuant to this Article 14 (Force Majeure).
- (c) Limited Relief. Other than as provided in Section 14.5 (Effect of Force Majeure on Events of Default), neither Party shall be responsible or liable for any delays or failures in its performance under this Agreement as and to the extent such delays or failures are substantially caused by conditions or events of Force Majeure.
- 14.5 Effect of Force Majeure on Events of Default. If an occurrence of Force Majeure results in what would otherwise be deemed an Event of Default under Section 6.1 (Events of Default), no Event of Default shall be deemed to have occurred if and for so long as the conditions set forth in Section 14.4(a) (Satisfaction of Certain Conditions) are satisfied, as long as the condition or event that would otherwise be an Event of Default is cured within the lesser of (i) the duration of the Force Majeure plus any additional time reasonably necessary to remedy the effects of the Force Majeure or (ii) three hundred sixty-five (365) Days from the occurrence or inception of the Force Majeure, as noticed pursuant to Section 14.4 (Consequences of Force Majeure).
- 14.6 Effect of Force Majeure. Other than as provided in Section 14.5 (Effect of Force Majeure on Events of Default), neither Party shall be responsible or liable for any delays or failures in its performance under this Agreement as and to the extent (i) such delays or

failures are substantially caused by conditions or events of Force Majeure, and (ii) the conditions of Section 14.4(a) (Satisfaction of Certain Conditions) are satisfied.

- 14.7 Obligations Remaining After Event of Force Majeure. No monetary obligations of either Party which arose before the occurrence of an event of Force Majeure causing the suspension of performance shall be excused as a result of such occurrence. In the event of a Force Majeure which reduces or limits Supplier's capability to deliver Grid Services and subject to the provisions of this Agreement, Company shall be obligated to pay for Grid Services only to the extent it accepts such Grid Services as made available by Supplier. Except as otherwise expressly provided for in this Agreement, the existence of a condition or event of Force Majeure shall not relieve the Parties of their obligations under this Agreement (including, but not limited to, payment obligations, except as limited above) to the extent that performance of such obligations is not precluded by the condition or event of Force Majeure.
- 14.8 Effect on Term. A Party experiencing an event of Force Majeure and not otherwise in default under this Agreement may elect to extend this Agreement equivalent to the duration of such event of Force Majeure; provided, however that under no circumstance shall such extension exceed one hundred eighty (180) Days from the conclusion of the original Term.

ARTICLE 15 EQUAL EMPLOYMENT OPPORTUNITY

- 15.1 Equal Employment Opportunity. (Applicable to all contracts of \$10,000 or more in the whole or aggregate (41 CFR 60-1.4 and 41 CFR 60-741.5)). Supplier is aware of and is fully informed of Supplier's responsibilities under Executive Order 11246 (reference to which include amendments and orders superseding in whole or in part) and shall be bound by and agrees to the provisions as contained in Section 202 of said Executive Order and the Equal Opportunity Clause as set forth in 41 CFR 60-1.4 and 41 CFR 60-741.5(a), which clauses are hereby incorporated by reference.
- 15.2 Equal Opportunity For Disabled Veterans, Recently Separated Veterans, Other Protected Veterans and Armed Forces Service Medal Veterans. (Applicable to (i) contracts of \$25,000 or more entered into before December 31, 2003 (41 CFR 60-250.4) or (ii) each federal government contract of \$100,000 or more, entered into or modified on or after December 31, 2003 (41 CFR 60 300.4) for the purchase, sale or use of personal property or nonpersonal services (including construction)). If applicable to Supplier under this Agreement, Supplier agrees that it is, and shall remain, in compliance with the rules and regulations promulgated under The Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended by the Jobs for Veterans Act of 2002, including the requirements of 41 CFC 60-250.5(a) (for orders/contracts entered into before December 31, 2003) and 41

CFR 60-300.5(a) (for orders/contracts entered into or modified on or after December 31, 2003) which are incorporated into this Agreement by reference.

ARTICLE 16 REGULATORY APPROVALS

- 16.1 PUC Approval for Use of Model Contract. At the time of execution of this Agreement, Company intends to apply to the PUC for an order (i) approving the form of this Agreement as a model contract for all Grid Services Purchase Agreements and (ii) confirming that no approval need be sought from the PUC for each ensuing new Grid Services Purchase Agreement so long as the new agreement is substantially in the form of this Agreement (“PUC Model Order”).
- (a) If (v) Company decides in its sole discretion not to apply for the PUC Model Order, or (x) the PUC declines to issue the PUC Model Order, or (y) the PUC Model Order is not issued for any reason or within such reasonable time as Company shall decide in its sole, but nonarbitrary, discretion, or (z) the PUC issues the PUC Model Order but the said order contains terms and conditions deemed to be unacceptable to Company and is in a form deemed to be reasonable by Company, in its sole, but nonarbitrary, discretion, then the terms of Appendix 1 (PUC Approval of Grid Services Purchase Agreement) attached to this Agreement are incorporated into the Agreement as if fully set forth herein, and the issuance of a Non-Appealable PUC Approval Order (as described in Appendix 1) shall be a Condition Precedent. In addition, this Agreement shall not become effective until the PUC Approval Date (as described in Appendix 1), and the System Integration Date Deadline shall be adjusted as determined by Company to accommodate the addition of the new Condition Precedent.
- (b) If the PUC Model Order is issued, then Appendix 1 is of no further force or effect.

ARTICLE 17 ASSIGNMENT

- 17.1 Assignment. Neither Party shall assign this Agreement or its rights hereunder without the prior written consent of the other Party, which consent may be withheld in the exercise of its sole discretion; provided, however, either Party may, without the consent of the other Party (and without relieving itself from liability hereunder), (i) transfer, sell, pledge, encumber or assign this Agreement or the accounts, revenues or proceeds hereof in connection with any financing or other financial arrangements, (ii) transfer or assign this Agreement to an affiliate of such Party which affiliate’s creditworthiness is equal to or higher than that of such Party, or (iii) transfer or assign this Agreement to any person or entity succeeding to all or substantially all of the assets whose creditworthiness is equal to or higher than that of such Party; provided, however, that in each such case, any such assignee shall agree in writing to be bound by the terms and conditions hereof and so

long as the transferring Party delivers such tax and enforceability assurance as the non-transferring Party may reasonably request.

ARTICLE 18 NOTICES

18.1 Notices.

- (a) Method of Delivery. Any written notice provided under this Agreement shall be delivered personally, sent by electronic mail (Email) (provided receipt thereof is confirmed via Email or in writing by the recipient) or sent by registered or certified first class mail, with postage prepaid, to the other Party as follows (or to such other addresses or Email addresses as a Party may designate by notice to the other Party):

TO COMPANY	
By Mail:	Hawaiian Electric Company, Inc. [or HELCO or MECO as appropriate] P.O. Box 2750 Honolulu, Hawai'i 96840 Attn: Director, Demand Response Program
Delivered By Hand or Overnight Delivery:	Hawaiian Electric Company, Inc. [or HELCO or MECO as appropriate] American Savings Bank Tower 1001 Bishop Street, Suite 1050 Honolulu, Hawai'i 96813 Attn: Director, Demand Response Programs
By Email to:	
With a copy to:	
By Mail:	Hawaiian Electric Company, Inc. Legal Department

	P.O. Box 2750 Honolulu, Hawai'i 96840
By Email to:	Legalnotices@hawaiianelectric.com
TO SUPPLIER	
By Mail:	
Delivered By Hand or Overnight Delivery:	
By Email to:	

- (b) Date of Delivery. Notice sent by mail shall be deemed to have been given on the date of actual delivery or at the expiration of the fifth (5th) Day after the date of mailing, whichever is earlier. Any Party hereto may change its address for written notice by giving written notice of such change to the other Party hereto.
- (c) Email Notice. Any notice delivered by Email shall request a receipt thereof confirmed by Email or in writing by the recipient and followed by personal or mail delivery of such correspondence and any attachments as may be requested by the recipient, and the effective date of such notice shall be the date of receipt, provided such receipt has been confirmed by the recipient.

- (d) Additional Means. The Parties may agree in writing upon additional means of providing notices, consents and waivers under this Agreement in order to adapt to changing technology and commercial practices.

COMMERCIAL

ARTICLE 19 RIGHTS AND OBLIGATIONS

19.1 Rights and Obligations of Both Parties.

- (a) Sale and Purchase of Grid Services. During the Term of this Agreement, Supplier shall aggregate, sell, and deliver to Company and Company shall take from and pay Supplier for the Grid Services subject to and in accordance with terms and conditions of this Agreement.
- (1) Rejected Export of Contract Capability. In the event that Supplier's export of its Contract Capability is rejected by Company as a result of Company's supplemental screening and review of a Resource as provided in Exhibit A-1 (Fast Frequency Response Grid Service Description and Requirements), Exhibit A-2 (Regulating Reserve Grid Service Description and Requirements), Exhibit A-3 (Capacity Grid Service Description and Requirements), and Exhibit A-4 (Replacement Reserve Grid Service Description and Requirements) Supplier may reduce its Contract Capability for the remainder of the Term but only to the extent and in the amount that such Contract Capability is drawn from the Resource rejected under Company's supplemental screening and review. A reduction of Supplier's Contract Capability pursuant to this Section 19.1(a)(1) (Rejected Export of Contract Capability) shall not be considered a failure by Supplier to meet its Contract Capability for the purpose of Section 7.3 (Failure to Meet Contract Capability).
- (2) Addition of Capability. No later than five (5) Days following the first day of each of Contract Year 2 and Contract Year 3 as established pursuant to this Agreement or such longer period of time as may be agreed upon by the Parties, Supplier may propose to provide to Company additional Capability of up to twenty (20) percent of Supplier's total Contract Capability as of the date that such proposal is made. Company, at its sole discretion, may accept or reject Supplier's proposal by providing written notice to Supplier within thirty (30) Days of Company's receipt of Supplier's proposal.

19.2 Rights and Obligations of Supplier.

- (a) Co-Branding; Use of Company’s Trademarks. In connection with the activities set forth in Section 19.2(a)(1) (Marketing Material), and Section 19.2(a)(2) (Participant Engagement Portal) and subject to the terms and conditions related to Supplier’s use of Company’s name(s), trademarks, and logos (“Company Trademarks”) set forth in Exhibit O (Trademark License Agreement), Supplier shall co-brand certain media with Company.
- (1) Marketing Material. All marketing material of any form created by Supplier in relation to this Agreement and any agreement between Supplier and its Participants shall be co-branded with Company Trademarks as approved by Company.
- (2) Participant Engagement Portal. The online participant engagement portal developed by Supplier in relation to this Agreement or any agreement between Supplier and its Participants shall be co-branded with Company Trademarks as approved by Company.
- (3) No use of Company Trademarks or co-branding is allowed other than as described in Section 19.2(a) (Co-Branding; Use of Company’s Trademarks). Without limiting the generality of the foregoing sentence, none of Supplier’s employee uniforms, equipment, or vehicles shall use Company Trademarks.
- (b) Participant Installation Protection and Control Equipment. Supplier shall, at no cost to Company, ensure that all equipment related to the GSDS, including but not limited to protective and control equipment, internal breakers, relays, switches, and synchronizing equipment installed by or for each Participant is properly installed, constructed, configured, secured, operated, and maintained to ensure the standard of reliability, quality, and safety as required by this Agreement, all applicable Laws and Government Approvals, and in compliance with Rule 14.H (Interconnection of Distributed Generating Facilities Operating in Parallel with the Company’s Distribution System) of the Tariff and all other applicable rules thereof. No part of the equipment related to the GSDS shall be allowed to limit the operation of said Rule 14.H. Supplier shall respond promptly to all requests by Participants, whether communicated directly to Supplier or whether communicated to Company, for repairs and maintenance.
- (1) Company’s Right to Review Participant Installation. Company shall have the right, but not the obligation, to inspect and approve the installation, construction, and setting of all Participant protective and control equipment at any time during the progress of installation, construction, setting, and testing. Company may elect to inform Supplier of any

problem Company observes and any recommendations it has for correcting such problems with the Participant equipment, and Supplier shall address such problems to the reasonable satisfaction of Company.

- (2) No Endorsement, Warranty or Waiver. Neither Company's inspection and/or approval of Participants' equipment and settings nor Company's reporting and recommendations to Supplier regarding its inspections shall be construed as endorsing the design thereof, as any warranty of the safety, durability, or reliability of said equipment and settings, or as a waiver of any of Company's rights. In no event shall any failure by Company to exercise its rights under Section 19.2(b)(1) (Company's Right to Review Participant Installation) constitute a waiver by Company of, or otherwise release Supplier from, any provision of this Agreement.
 - (3) Cooperation. Supplier and Company shall cooperate with each other in good faith in agreeing upon design standards for any equipment or settings referred to in Section 19.2(b) (Participant Installation Protection and Control Equipment).
 - (4) Timing for Implementation of Company Proposals. Within a reasonable time after receipt of Company's comments referred to in Section 19.2(b) (Participant Installation Protection and Control Equipment) or notification by Company of problems related to Supplier's obligations under Section 19.2(b) (Participant Installation Protection and Control Equipment), but no later than ninety (90) Days after such notification (unless such condition is causing a safety hazard or damage to the Company System or the facilities of any of Company's customers, in which event the correction must be made promptly by Supplier), Supplier shall implement Company's proposals. If Supplier disagrees with Company's proposals, the Parties shall proceed to the dispute resolution procedures described in Article 12 (Governing Law; Dispute Resolution).
- (c) Reporting. Supplier shall comply with the requirements set forth in Exhibit J (Reporting). Unless a different time is provided, all reports must be delivered no later than five (5) Business Days after the last Day of the month.
 - (d) Operational Forecast. Supplier shall provide the Operational Forecast to Company in compliance with Exhibit F (Operational Forecast).
 - (e) Compliance with Law. Supplier shall take all appropriate action against a Participant, including disenrollment of a Participant and termination of the applicable Participant Service Agreement, in the event that such Participant is in violation of any applicable Law.

- (f) Meter Data. Supplier shall provide to Company all data regarding Participant Resources (“Grid Services Data”) required pursuant to this Agreement. Supplier shall require each of its Participants to expressly authorize Supplier to provide the Grid Services Data to Company.
- (g) GSDS Testing.
 - (1) Data, Integration, and Testing. Supplier shall perform all testing and comply with all requirements set forth in Exhibit G (Data, Integration, and Testing Requirements).
 - (2) Compensation. Unless otherwise stated in Exhibit G (Data, Integration, and Testing Requirements), Company shall compensate Supplier as provided in Article 20 (Invoicing and Payment) for any Grid Service provided during testing as if it were a GS Event. However, minimum incentives and additional incentives shall not be paid for Grid Services provided as a result of testing.

19.3 Standards of Conduct for Supplier.

- (a) Compliance with Company’s Corporate Code of Conduct. Supplier has implemented and will maintain and require its employees and Supplier Agents to comply with standards that are no less stringent than those that are set forth in Company’s Corporate Code of Conduct in all aspects relevant to Supplier’s performance under this Agreement (“Supplier Policies”). Company’s Corporate Code of Conduct is available at https://www.hawaiianelectric.com/Prebuilt/contractors/code_of_conduct.pdf.
 - (1) If a Participant’s Resource is managed by a third party not retained by Supplier, Supplier shall have no responsibility for said third party’s compliance with the Supplier Policies in its management of the Resource.
- (b) Acknowledgment of Supplier Policies. Supplier agrees to cooperate with and provide assistance to Company in the investigation of any security breach that relates to this Agreement and may involve Supplier, Supplier’s employees, or Supplier Agents. In the event that Company notifies Supplier that a particular employee of Supplier or a Supplier Agent is not conducting himself or herself in accordance with any of the Supplier Policies, Supplier shall promptly investigate the matter and take appropriate action, which may include (i) removing the applicable individual from any work associated with this Agreement, providing Company with prompt notice of such removal, and replacing such individual with a similarly qualified individual, or (ii) taking other appropriate disciplinary action to prevent a recurrence.

- 19.4 Customer Service. Supplier shall provide customer service to its Participants in accordance with Exhibit M (Customer Service Requirements).
- 19.5 Project Manager and Participant Contact. Supplier shall appoint a project manager with suitable training and skills to manage and oversee Supplier's performance under this Agreement and serve as Supplier's primary representative under this Agreement. The project manager shall be authorized to act for and on behalf of Supplier with respect to all matters relating to this Agreement and shall be available twenty four (24) hours per day or shall make arrangements for back-up outside of normal working hours. Supplier shall provide Company with any changes in contact information for the project manager as soon as reasonably possible. Supplier shall notify Company as soon as possible after the project manager position is vacated for any reason, and Supplier shall, as soon as reasonably practicable, fill the position in accordance with this Section 19.5 (Project Manager and Participant Contact). Supplier shall promptly replace any project manager to whom Company raises a reasonable objection. Supplier shall provide all Participants with 24 hour contact information to which Participants may direct questions, complaints, and emergencies.
- 19.6 Obligations of Participants.
- (a) Dual Participation Restriction. All Resources connected to the same meter shall only be enrolled with Supplier and no other supplier of a GSDS or any other Company demand response program. In connection with entering into a Participant Service Agreement with any party, Supplier shall ensure that such party has not enrolled its Resource in a participant service agreement with another supplier of Grid Services to the Company or enrolled the Resources in any other Company demand response program.
- (b) Participant Service Agreement. Supplier shall ensure that any Participant Service Agreement executed by Supplier with a Participant includes all of the requirements set forth in Exhibit N (Participant Service Agreement Requirements). Company, at its sole discretion, reserves the right, but has no obligation, to review and approve Supplier's forms of Participant Service Agreement to ensure Supplier's conformance with the requirements of Exhibit N (Participant Service Agreement Requirements) and any other terms of this Agreement. If Company finds that Supplier's forms of Participant Service Agreement do not conform with the requirements of Exhibit N (Participant Service Agreement Requirements), Company may elect to inform Supplier thereof and Supplier shall address such nonconformity to the reasonable satisfaction of Company. Company further reserves the right to review any executed Participant Service Agreement. Notwithstanding the foregoing, Company's approval of the Supplier forms of Participant Service Agreement and

review of any executed Participant Service Agreement shall not be construed as approval or endorsement thereof and Supplier shall advise Participants of the foregoing limitation.

- (c) Participant Survey. Company may, but is not required to, conduct surveys of Participants regarding engagement, use, or satisfaction with the GSDS during or after the Term. Company is not obligated to share any information about the surveys or results or analysis of the surveys with Supplier. Supplier shall inform Company of any survey of Participants that it conducts, including the terms and content of each survey, distribution information, and complete survey results together with any analysis thereof.

19.7 Rights and Obligations of Company.

- (a) Dispatch of Grid Services.

- (1) Company shall have the right to dispatch the Grid Services delivered by Supplier to the Company System as it deems appropriate in its reasonable discretion, subject to and consistent with this Agreement.
- (2) Company Dispatch will be by either Supplier's manual control under the direction of the Company System Operator or by computerized control by the EMS or AGC, in each case at Company's reasonable discretion.

- (b) Company Right to Defer the System Integration Date.

- (1) Deferral Right. At any time up until the System Integration Date, Company may choose once to defer the System Integration Date by up to six (6) months beyond the then-current System Integration Date Deadline by giving Supplier written notice of its decision to defer and the extent of the deferral period.
- (2) Deferral Costs. Subject to Supplier's obligation to minimize the cost resulting from such deferral as provided below, Company shall bear all reasonable, actual, verifiable, approved costs incurred by Supplier with respect to the GSDS that directly result from a deferral ("Deferral Costs"). Supplier shall provide Company monthly with an accounting of all Deferral Costs. Company shall pay to Supplier the Deferral Costs within thirty (30) Days of each such accounting. If Company decides not to approve any requested Deferral Costs and Supplier disagrees with that decision, the Parties shall proceed to the dispute resolution procedures described in Article 12 (Governing Law; Dispute Resolution).

- (A) Duty To Minimize Deferral Costs. Upon the commencement of the deferral period, Supplier shall take such steps as may be reasonably necessary to minimize Deferral Costs, including negotiated deferral fees, penalties or similar charges to be owed by Supplier to Supplier Agents, excluding from such obligation to minimize, however, deferral fees, penalties or similar charges by such parties that have been approved by Company or, if applicable, included in any Pre-Deferral Estimate. Prior to entering into agreements with Supplier Agents, Supplier shall use commercially reasonable efforts to minimize deferral fees, penalties or charges to be paid by Supplier. Company shall not be obligated to pay any costs that Supplier is not obligated to pay arising out of such deferral by Company.
- (B) Reasonable Steps. Consistent with Supplier's obligation to minimize Deferral Costs, Supplier shall take such steps as it reasonably deems necessary during the deferral period to assure the timely occurrence of the System Integration Date (as so deferred), including attainment or renewal of applicable Government Approvals, contracts or rights, and Company shall cooperate with Supplier in such effort.
- (C) Pre-Deferral Estimate. Upon the written request (and at the expense) of Company given not more often than once in any six (6) month period and before a deferral notice under Section 19.7(b)(1) (Company Right to Defer the System Integration Date) has been given, Supplier shall within thirty (30) Days after the date of such notice provide an estimate ("Pre-Deferral Estimate") of the anticipated costs (to the extent then known by Supplier) to be submitted to Company as Deferral Costs under Section 19.7(b)(2) (Deferral Costs) if a deferral notice were given at or about the time of such request.
- (c) Company Right to Terminate for Convenience. At any time up until the System Integration Date, if Company determines that it no longer needs the Grid Services to be provided by Supplier, Company may choose to cancel this Agreement by giving Supplier written notice of its decision to cancel. No cause need be cited or demonstrated by Company.
- (1) Termination after commencement of development. If Company exercises its right to terminate this Agreement pursuant to this Section 19.7(c) (Company Right to Terminate for Convenience) after Supplier has

commenced development activity on the GSDS for this Agreement, immediately upon receipt of such termination notice, Supplier shall cease all development activity and proceed to take such steps as may be necessary to mitigate the losses due to such termination. Supplier shall use commercially reasonable efforts to salvage the value of any equipment or materials purchased or contracts signed for the GSDS. All such mitigation efforts shall be made in consultation with Company. After the completion of all such mitigation efforts, Contractor will be paid its actually incurred costs of performance under this Agreement, including administrative and general overhead costs and demobilization costs, determined in accordance with generally accepted accounting principles consistently applied, plus an amount equal to eight (8) percent of those costs to account for profit, plus the costs incurred as a direct result of the termination, less the value of any salvaged materials or equipment retained by Supplier, all subject to approval by Company. Payment will be made by Company within thirty (30) days after such approval. If Company does not approve all amounts requested by Supplier as compensation for the termination, and Supplier disagrees with that decision, the Parties shall proceed to the dispute resolution procedures described in Article 12 (Governing Law; Dispute Resolution).

- (2) Termination before commencement of development. If Company exercises its right to terminate this Agreement pursuant to this Section 19.7(c) (Company Right to Terminate for Convenience) before Supplier has commenced development activity on the GSDS for this Agreement, Supplier shall not be paid any amount.

ARTICLE 20 PAYMENT AND INVOICING

- 20.1 Pricing; Incentives. Subject to the provisions of this Agreement, commencing on the System Integration Date, for each Settlement Month, Company shall pay Supplier for Grid Services provided by Supplier and accepted by Company. The price to be paid by Company to Supplier and the incentives to be paid by Supplier to Participants (through credit on Participant's electricity bill from Company) for each type of Grid Service is set forth in Exhibit K (Settlement).
- 20.2 Monthly Invoice. As soon as practicable, but not later than the fifth (5th) Business Day of each Calendar Month, Supplier shall provide Company with the Monthly Invoice Report (MIR) as described in Exhibit J (Reporting) and any other data required under Exhibit K (Settlement) to compute the payment due as set forth in said Exhibit K (Settlement).

20.3 Taxes.

- (a) Hawai'i General Excise Tax. Company shall not be liable for payment of the applicable Hawai'i General Excise Tax levied and assessed against Supplier as a result of this Agreement. The rates and charges in this Article 20 (Invoicing and Payment) shall not be adjusted by reason of any subsequent increase or reduction of the applicable Hawai'i General Excise Tax.
- (1) Payment of Taxes. Supplier shall, when making payments to Company under this Agreement, pay such additional amount as may be necessary to reimburse Company for the Hawai'i general excise tax on gross income and all other similar taxes imposed on Company by any Governmental Authority with respect to payments in the nature of gross receipts tax, sales tax, privilege tax or the like (including receipt of any payment made under Section 20.3 (Taxes)), but excluding federal or state net income taxes. By way of example and not limitation, as of the Execution Date, all payments subject to the 4.5% Hawai'i general excise tax on O'ahu would be set at a rate of 4.712% so that the underlying payment will be net of such tax liability.
- (b) Other Taxes or Fees. Company shall not be liable for payment of nor reimbursement of any Supplier payment of any new or modified tax or fee imposed by any Government Authority.

20.4 Payment.

- (a) Date Due. No later than thirty (30) days after the receipt of the MIR and all information necessary to perform the settlement as described in Exhibit K (Settlement), Company shall pay, in immediately available funds, the payment owed computed as set forth in said Exhibit K (Settlement) or provide to Supplier an itemized statement of its objections to all or any portion of the MIR and pay any undisputed amount. If any payments are made after the date due as described in the foregoing sentence, Company shall also include interest on such payments, which shall be computed at the average Prime Rate for the period between the date due and the date of payment. Notwithstanding the foregoing, the time in which Company must make payment to Supplier shall be increased on a Business Day-for-Business Day basis for each Business Day that Supplier is delinquent in providing to Company the MIR or any information necessary to perform the settlement.
- (b) Offset. Company at any time may offset against any and all amounts that may be due and owed to Supplier under this Agreement, any and all undisputed amounts, including damages, insurance premiums, and other payments, that are owed by

Supplier to Company pursuant to this Agreement or are past due under other accounts Supplier has with Company for other services. Undisputed and non-offset portions of amounts invoiced under this Agreement shall be paid on or before the relevant due date.

- (c) Set-off. Company shall have the right to set off any payment due and owing by Supplier, including but not limited to any payment under this Agreement and any payment due under any award made under Article 12 (Governing Law; Dispute Resolution), against Company's payments of monthly invoices as necessary.
 - (d) Other Payments. Any amounts due from either Party under this Agreement other than monthly Grid Services charges shall be paid or objected to within thirty (30) Days following receipt from either Party of an itemized invoice from the other Party setting forth, in reasonable detail, the basis for such invoice.
- 20.5 Invoice Disputes. Either Party may dispute invoiced amounts, but shall pay to the other Party at least the undisputed portion of invoiced amounts on or before the invoice due date. To resolve any invoice dispute, the Parties shall use the procedures set forth in Article 12 (Governing Law; Dispute Resolution). When the invoice dispute is resolved, the Party owing shall pay the amount owed within thirty (30) Days of the date of such resolution, with interest from the date that such disputed amount was payable until the date that the amount owed is paid at the average Prime Rate for the period.
- 20.6 Adjustments Due to Inaccuracies in Settlement. In the event adjustments are required to correct inaccuracies in settlement under Exhibit K (Settlement), whether as a result of inaccuracies in the settlement process or inaccuracies in the data used in the settlement process, the Party requesting adjustment shall determine the correct measurements or processes and shall recompute the amounts due during the period of such inaccuracies. The difference between the amount paid and that recomputed for the invoice shall either be (i) paid to Supplier or set-off by Company, as appropriate, in the next invoice payment to Supplier, or (ii) objected to by the Party responsible for such payment within thirty (30) Days following its receipt of such request. If the Party responsible for such payment objects to the request, then the Parties shall work together in good faith to resolve the objection. If the Parties are unable to resolve the objection, the matter shall be resolved pursuant to Article 12 (Governing Law; Dispute Resolution). All claims for adjustments shall be waived for any deliveries of Grid Services made more than thirty-six (36) months preceding the date of any such request.

ARTICLE 21 SECURITY

- 21.1 Security for the Performance of Supplier's Obligations. To secure the performance of Supplier's obligations under this Agreement, Supplier shall provide financial security to

Company (“Security”). The Security shall be in the form of the Security Agreement described below and the Letter of Credit described below.

- 21.2 Security Agreement. As required in Section 2.2(b) (Conditions Precedent to Company’s Obligations), Supplier shall execute and deliver to Company a Security Agreement substantially in the form of Exhibit Q (Security Agreement) attached hereto. The Security Agreement shall grant Company a lien on and security interest in, all of Supplier’s right, title and interest in and to all accounts established pursuant to this Agreement, and any agreements between Supplier and Participants, all insurance proceeds in respect of the GSDS, and all proceeds of the foregoing, as the same may be modified or amended from time to time in accordance with the terms thereof. The Security Agreement shall be subordinate only to the mortgage and security interest of Supplier’s primary financier (if any) and only in an amount and to the extent that such security interest and mortgage secure such amounts financed by Supplier’s lender to Supplier and shall be required to finance the actual development price of Supplier’s GSDS. Notwithstanding the immediately preceding sentence, Company’s right to receive or set off any un subordinate claims against payments it otherwise is obligated to make under this Agreement shall in no respect be subordinate to the interest of Supplier’s financier (if any) under its Financing Documents (if any). No part of this section shall be construed to require Company to assume the obligations of Supplier under any agreement or account related to the GSDS.
- 21.3 Letter of Credit. No less than sixty (60) Days prior to the System Integration Date Deadline, Supplier shall deliver to Company an irrevocable standby letter of credit in the amount of the lesser of (a) __ () percent of the total value of this Agreement as calculated at the rate set by Company for the Contract Capability amounts set forth in Exhibit H (Contract Capability), or [INSERT AMOUNT] \$ _____, substantially in the form of Exhibit R (Form of Letter of Credit) attached hereto from a bank or other financial institution located in the United States with a credit rating of “A-” or better (“Letter of Credit”). If the rating (as measured by Standard & Poors) of the bank or financial institution issuing the Letter of Credit falls below A-, Supplier shall, upon request by Company, replace such Letter of Credit with an irrevocable standby letter of credit from another bank or financial institution located in the United States with a credit rating of “A-” or better. The Letter of Credit must be issued for a minimum term of one (1) year and must be renewed prior to the end of each term so that at the time of such renewal, the remaining term shall not be less than one (1) year. The Letter of Credit shall include a provision for at least thirty (30) Days advance notice to Company of any expiration or earlier termination of the Letter of Credit so as to allow Company sufficient time to exercise its rights under said Letter of Credit if Supplier fails to extend or replace the Letter of Credit. In all cases, the costs and expenses of establishing, renewing,

substituting, canceling, increasing, reducing, or otherwise administering the Letter of Credit shall be borne by Supplier.

- 21.4 Maintain and Replenish the Letter of Credit. Supplier shall replenish the Letter of Credit within fifteen (15) Business Days after any draw on the Letter of Credit by Company or any reduction in the value of the Letter of Credit below the required level for any other reason.
- 21.5 Company's Right to Draw From Letter of Credit or Enforce Security Agreement. In addition to any other remedy available to it, Company may, before or after termination of this Agreement, in its sole discretion, exercise any right or remedy under the Security Agreement and/or draw from the Letter of Credit pursuant to this Article 21 (Security), and from all such forms, and in any sequence Company may select for payment; such amounts as are necessary to recover amounts Company is owed pursuant to this Agreement, including, without limitation, any damages due Company and any amounts for which Company is entitled to indemnification under this Agreement. Any failure to enforce the Security Agreement or draw upon the Letter of Credit for any damages or other amounts due Company shall not prejudice Company's rights to recover such damages or amounts in any other manner.
- 21.6 Release of Security Funds. Promptly following the end of the Term and the complete performance of all of Supplier's obligations under this Agreement, including, but not limited to, the obligation to pay any and all damages owed by Supplier to Company, under this Agreement, Company shall release its interest in the Security.

ARTICLE 22 TERM

- 22.1 Term and Effectiveness of Certain Obligations. Promptly following the end of the Term and the complete performance of all of Supplier's obligations under this Agreement, including, but not limited to, the obligation to pay any and all damages owed by Supplier to Company, under this Agreement, Company shall release its interest in the Security.
- (a) Term. The initial term of this Agreement shall commence upon the Execution Date and shall remain in effect for sixty (60) months from the System Integration Date Deadline ("Initial Term"), unless terminated earlier as provided herein. The Initial Term and any extensions thereof constitute the Term. If the Agreement is terminated prior to the end of the Initial Term, as provided herein, then the period from the System Integration Date to the effective date of such termination constitutes the Term. Upon expiration of the Term, the Parties hereto shall no longer be bound by the terms and conditions of this Agreement, except as set forth in Section 28.14 (Survival of Obligations).

- (b) Effectiveness of Certain Obligations. Prior to the System Integration Date: (i) in no event shall Supplier be obligated to provide Grid Services to Company, or have any other obligations to Company other than those set forth in this Section 21.1(b) (Term and Effectiveness of Certain Obligations), Section 2.2 (Conditions Precedent to Company's Obligations), Article 11 (Indemnification), Article 12 (Governing Law; Dispute Resolution), Article 13 (Insurance), Article 14 (Force Majeure), and Article 29 (Miscellaneous), and (ii) in no event shall Company be obligated to make any payments provided for herein to Supplier or have any other obligations to Supplier other than those set forth in this Section 21.1(b) (Term and Effectiveness of Certain Obligations), Article 11 (Indemnification), Article 12 (Governing Law; Dispute Resolution), Article 14 (Force Majeure), and Article 29 (Miscellaneous).

OPERATIONAL

ARTICLE 23 AUDIT

- 23.1 Rights of Company. Without limitation of other audit rights described in this Agreement, Company shall have the right throughout the Term and for a period of three (3) years following the end of the Term, as extended, upon reasonable prior notice, to audit the books and records of Supplier to the limited extent necessary to verify the basis for any claim by Supplier for payments from Company or to determine Supplier's compliance with the terms of this Agreement. Company shall not have the right to audit other financial records of Supplier. Supplier shall make such records available at its offices in _____, State of Hawai'i during normal business hours. Company shall pay Supplier's reasonable actual, verifiable costs for such audits, including allocated overhead.
- 23.2 Rights of Supplier. Supplier shall have the right throughout the Term and for a period of three (3) years following the end of the Term, as extended, upon reasonable prior notice, to audit the books and related records of Company to the limited extent necessary to verify the basis for charges invoiced by Company to Supplier under this Agreement. Supplier shall not have the right to audit other records of Company. Company shall make such information available during normal business hours at its offices in _____, State of Hawai'i. Supplier shall pay Company's reasonable actual, verifiable costs for such audits, including allocated overheads.

ARTICLE 24 PROVISION OF GRID SERVICES

- 24.1 Compliance With Grid Services Description and Requirements. Supplier shall provide the Grid Services in compliance with the specifications set forth in Exhibit A-1 (Fast Frequency Response Grid Service Description and Requirements), Exhibit A-2

(Regulating Reserve Grid Service Description and Requirements), Exhibit A-3 (Capacity Grid Service Description and Requirements), and Exhibit A-4 (Replacement Reserve Grid Service Description and Requirements) relevant to each of the Grid Services being provided throughout the Term.

24.2 Telemetry Requirements.

- (a) Metering and Communications Equipment. Supplier shall comply with the requirements set forth in Exhibit E (Advanced Metering) for each Resource. Notwithstanding Company's obligation to install meters as stated in said Exhibit E (Advanced Metering), Supplier shall ensure that each Participant shall have an installed and operational meter compliant with Exhibit E (Advanced Metering) with appropriate meter communication equipment prior to the Resource being included in the Grid Services. Supplier shall provide Company with any telemetry data for a Resource that is required by Exhibit E (Advanced Metering) that Company's meter does not provide.
- (b) Meter Requirements for C&I Customer. In addition to the requirements in Section 24.2(a) (Metering and Communications Equipment), each C&I Customer shall be required to have a Company-approved meter that is capable of recording usage in 5-minute intervals and being read remotely by a remote meter reading system approved by Company. If a C&I Customer does not have a meter that meets such requirements, Supplier shall supply and install such meter at Supplier's or Participant's expense.
- (c) Additional Company Meter. Supplier may request that Company install an additional Company-owned meter at a Participant's Resource. Supplier's request shall be supported by a detailed explanation regarding the need for an additional Company-owned meter. If Company, in its sole discretion, approves Supplier's request for additional Company-owned meter, Supplier shall be responsible for all costs and expenses related supply and installation of the meter.
- (d) Company Access to Participant Meters. Supplier shall ensure that Participants grant to Company in the Participant Service Agreement the right physically to access the telemetry equipment connected to any Resource to retrieve Grid Service Data.

ARTICLE 25 TESTING

- 25.1 Data, Integration, and Testing. Supplier shall perform all testing and comply with all requirements set forth in Exhibit G (Data, Integration, and Testing Requirements) and Exhibit I (GSDS Service Level Agreement). Supplier and Company shall coordinate all GSDS testing.

25.2 Compensation for Testing. Unless otherwise stated in Exhibit G (Data, Integration, and Testing Requirements), Company shall compensate Supplier as provided in Article 20 (Invoicing and Payment) for any Grid Service provided during testing as if it were a GS Event. However, minimum incentives and additional incentives shall not be paid by Company for Grid Services provided as a result of testing.

ARTICLE 26 INFORMATION SECURITY

26.1 Information Security Requirements.

- (a) Safety and Security Procedures. Supplier shall maintain and enforce safety and security procedures to safeguard Company Data, Participant Data and Company Confidential Information in Supplier's possession, including any Company Data, Participant Data or Company Confidential Information that Supplier provides to any Supplier Agents in the course of Supplier's performance pursuant to this Agreement. Supplier warrants that it shall (i) use NIST industry best practices for physical and systems security measures to prevent destruction, loss, alteration or unauthorized access to, use of, or tampering with, the Grid Services, GSDS, software, Company Data, Participant Data and Company's Confidential Information, including to protect the confidentiality and integrity of any of Company's Confidential Information, operation of Company's systems, and to prevent viruses and similar destructive code from being placed in any software provided to Company, on Supplier's or Company's website, or in Supplier's or Company's programming; and (ii) use NIST industry best practices physical security and precautionary measures to prevent unauthorized access or damage to a facility under its control or that of its subcontractors, including to protect the confidentiality and integrity of any of Company's Confidential Information as well as the operation of Company's systems. Supplier shall, at a minimum, protect Company's Confidential Information and provide the standard of care required by NIST cybersecurity requirements, and the same measures it uses to protect its own Confidential Information.
- (b) Security Reporting. Commencing no less than thirty (30) Days prior to the System Integration Date, and thereafter annually during the Term of this Agreement, Supplier shall deliver to Company evidence of Supplier's information security safeguards, including but not limited to current ISO27001 reports, SSAE 16 SOC2 Type 2 reports and annual third-party penetration tests, within thirty (30) days of each such report's completion, and any and all such other similar reports, as completed. Supplier shall, at no cost to Company, mitigate all critical and high-risk findings within ten (10) Days of receiving such findings and provide Company with evidence of such mitigation to the reasonable satisfaction of Company.

- (c) Malware. Supplier will (consistent with the following sentence) ensure that no Malware or malicious software, or similar items are coded or introduced into any aspect of the Grid Services, the GSDS, the DERMS, and the Supplier information systems and operating environments and processes used or relied upon by Supplier to provide the Grid Services, including the information, data and other materials delivered by or on behalf of Supplier to Company, the customers of Company, Participants and/or third party providers (collectively, Environment). Supplier will continue to implement improvements to and upgrades of its Malware prevention and correction programs and processes consistent with the then-current NIST technology industry's standards and, in any case, no less robust than the programs and processes implemented by Supplier with respect to its own information systems and, on a regular basis as requested by Company, Supplier shall provide Company with sufficient evidence of the same. Supplier shall furthermore ensure that all Supplier Agents comply with the obligations of Supplier as set forth in this Section 27.1 (c) (Malware). If Malware is found to have been introduced into the Environment, Supplier will promptly notify Company, and Supplier shall take immediate action to eliminate and remediate the effects of the Malware at Supplier's expense. Supplier shall not modify or otherwise take corrective action with respect to the Company Systems except at Company's request. Supplier will promptly report to Company the nature and status of all security incidents, Malware detection, elimination and remediation efforts. On a regular basis as requested by the Company, Supplier shall provide Company with sufficient evidence of its efforts at continuous monitoring to evaluate the effectiveness of Supplier's information security safeguards.
- (d) Media. Supplier shall remove all Company Confidential Information from any media taken out of service and shall destroy or securely erase such media in accordance with Company's security requirements and otherwise in a manner designed to protect against unauthorized access to or use of any Company Confidential Information. Prior to the System Integration Date, Supplier shall develop and provide to Company its plan detailing how it will accomplish such removal, destructions, and erasure.
- (e) Security Breach. In the event that Supplier discovers or is notified of a breach or potential breach of security related to Company Data, Participant Data or Company's Confidential Information, Supplier shall immediately (i) notify Company of such potential, suspected or actual security breach, whether or not such breach has compromised any of Company's Confidential Information, (ii) investigate and promptly remediate the effects of the breach, whether or not the breach was caused by Supplier, (iii) cooperate with Company with respect to any such breach or unauthorized access or use; (iv) comply with all applicable privacy

and data protection laws governing Company's or any other individual's or entity's data; and (v) to the extent such breach was caused by Supplier, provide Company with reasonable assurances satisfactory to Company that such breach or potential breach shall not reoccur. Supplier shall preserve and provide to Company any forensic evidence obtained as a result of its investigation and remediation of such breach. Any remediation of any such breach will be at Supplier's sole expense. If any Personally Identifiable Information is breached, notification of individuals affected will be at Company discretion and at the sole expense of Supplier. Supplier shall pay for two (2) years of credit monitoring services for each individual whose Personally Identifiable Information was breached and, if approved or requested by Company, provide other remedies that become commercially available or required by law.

- (f) Data Destruction. Except as otherwise provided in this Agreement, within ten (10) Business Days after any request by Company during the Term and upon termination of this Agreement, Supplier shall destroy, delete, and erase all Company Data and Participant Data in its possession by using industry standard data elimination methods used to prevent unauthorized disclosure of information, and for Personally Identifiable Information, such methods shall be consistent with Hawaii Revised Statutes, Chapter 487-R. A duly authorized representative of Supplier shall certify in writing that all Company Data and Participant Data has been destroyed, deleted, and erased upon completion of such data elimination and immediately forward such certification to Company for its records. Prior to the System Integration Date, Supplier shall develop and provide to Company a detailed plan of how it intends to accomplish any such destruction, deletion, and erasure. Notwithstanding the foregoing, Supplier may retain system-wide historical archived backups for disaster recovery/business continuity purposes. Any Company Data and Participant Data in the disaster recovery backups shall be deleted from the disaster recovery backup upon expiration of the retention period for such backup.
- (g) Business Continuity Plan. Supplier agrees to implement and maintain during the Term of this Agreement, a business continuity plan, a disaster recovery plan, and an incident response plan (collectively the "Business Continuity Plans") consistent with the level of risk associated with the work under this Agreement. The Business Continuity Plans shall be provided to Company on or before the System Integration Date. Supplier shall update the Business Continuity Plans during the Term to reflect lessons learned from real recovery events and as required due to significant changes in risk or business or regulatory environment. The Company shall have the right to review the Business Continuity Plans at any

time during the Term and Supplier shall make such Business Continuity Plans available to Company immediately upon request.

- (h) Compliance with Laws. Supplier shall cause its employees and Supplier Agents to comply, at no cost to Company, with all applicable Laws related to the obligations assumed by Supplier under this Agreement, including those related to data privacy, data security, and the transmission of technical or personal data.

ARTICLE 27 IMPLEMENTATION OF GSDS

27.1 Design and Deployment of GSDS.

- (a) General. Supplier shall furnish all financial resources, labor, tools, materials, equipment, transportation, supervision, and other goods and services necessary to completely design, develop, deploy, maintain and operate the GSDS to fulfill the requirements of this Agreement. The design, development, deployment, maintenance, and operation of the GSDS shall be certified to meet applicable Underwriters Laboratory applicable standards and shall meet the information technology and information assurance standards, based on the NIST Cybersecurity Framework and 800-53 standards, set forth in Section 26.1 (Information Security Requirements) and the service level agreement as more fully described in Exhibit I (GSDS Service Level Agreement). The GSDS shall have an operational life equal to at least the Term of this Agreement. Supplier agrees that no modifications to the GSDS shall be made after the System Integration Date without prior written approval by the Company, unless such modifications could not reasonably be expected to have a material effect on the assumptions used in performing the tests described in Exhibit G (Data, Integration, and Testing Requirements). In no event will Supplier make any modifications to the GSDS that cause the GSDS to fall below the information technology and information assurance standards set forth in Section 26.1 (Information Security Requirements).
- (b) System Integration Requirements. The GSDS shall comply with the network and communication requirements set forth in Exhibit E (Advanced Metering) and Exhibit G (Data, Integration, and Testing Requirements). The GSDS shall be capable of sending telemetry data to the Company System, receiving load dispatch signals from the Company System, and responding with appropriate Grid Services within the response requirements set forth in Exhibit A-1 (Fast Frequency Response Grid Service Description and Requirements), Exhibit A-2 (Regulating Reserve Grid Service Description and Requirements), Exhibit A-3 (Capacity Grid Service Description and Requirements), Exhibit A-4

(Replacement Reserve Grid Service Description and Requirements) and Exhibit G (Data, Integration, and Testing Requirements).

- (c) Status Meeting. At least once every year during the Term, or on request following at least thirty (30) days' notice from Company, Supplier shall meet with representatives of Company to review the status of the GSDS program, including but not limited to Participant satisfaction and Supplier's compliance with the service level agreements set forth in Exhibit I (GSDS Service Level Agreement). Supplier may also be required to explain the operations of the GSDS and to provide such training and documentation as Company may require for Company to understand and operate the Company System efficiently and safely with the GSDS.

MISCELLANEOUS

ARTICLE 28 MISCELLANEOUS

- 28.1 Entire Agreement. This Agreement, including all Exhibits, (together with any confidentiality or non-disclosure agreements entered into by the Parties during the process of negotiating this Agreement and/or discussing the specifications of the GSDS) constitutes the entire agreement between the Parties relating to the subject matter hereof, superseding all prior agreements, understandings or undertakings, oral or written. Each of the Parties confirms that in entering into this Agreement, it has not relied on any statement, warranty or other representation (other than those set out in this Agreement) made or information supplied, by or on behalf of the other Party.
- 28.2 Binding Effect. This Agreement shall be binding upon and inure to the benefit of the Parties hereto and their respective successors, legal representatives, and permitted assigns.
- 28.3 Relationship of the Parties. Nothing in this Agreement shall be deemed to constitute either Party hereto as partner, agent or representative of the other Party or to create any fiduciary relationship between the Parties. Supplier does not hereby dedicate any part of GSDS to serve Company, Company's customers or the public.
- 28.4 Further Assurances. If either Party determines in its reasonable discretion that any further instruments, assurances or other things are necessary or desirable to carry out the terms of this Agreement, the other Party will execute and deliver all such instruments and assurances and do all things reasonably necessary or desirable to carry out the terms of this Agreement.
- 28.5 Severability. If any term or provision of this Agreement or the application thereof to any person, entity or circumstance shall to any extent be invalid or unenforceable, the

remainder of this Agreement, or the application of such term or provision to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law, and the Parties will take all commercially reasonable steps, including modification of the Agreement, to preserve the economic “benefit of the bargain” to both Parties notwithstanding any such aforesaid invalidity or unenforceability.

- 28.6 Modification or Amendment. No modification, amendment or waiver of all or any part of this Agreement shall be valid unless it is reduced to a writing on paper and signed via manual signature by both Parties.
- 28.7 Electronic Transmittal and Counterparts. The Parties agree that this Agreement and any subsequent writings, including amendments, may be executed and delivered by exchange of executed copies via Email or other acceptable electronic means, and in electronic formats such as Adobe PDF or other formats mutually agreeable between the Parties which preserve the final terms of this Agreement or such writing. A Party’s signature transmitted by facsimile, email or other acceptable electronic means shall be considered an “original” signature which is binding and effective for all purposes of this Agreement. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which shall together constitute one and the same instrument binding all Parties notwithstanding that all of the Parties are not signatories to the same counterparts. For all purposes, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.
- 28.8 Computation of Time. In computing any period of time prescribed or allowed under this Agreement, the Day of the act, event or default from which the designated period of time begins to run shall not be included. If the last Day of the period so computed is not a Business Day, then the period shall run until the end of the next Day which is a Business Day.
- 28.9 Headings. The paragraph headings of the various sections and exhibits have been inserted in this Agreement as a matter of convenience for reference only and shall not modify, define or limit any of the terms or provisions hereof and shall not be used in the interpretation of any term or provision of this Agreement.
- 28.10 Definitions. Capitalized terms used in this Agreement not otherwise defined in the context in which they first appear are defined in Article 1 (Definitions)
- 28.11 No Third Party Beneficiaries. Nothing expressed or referred to in this Agreement will be construed to give any person or entity other than the Parties any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this

Agreement. This Agreement and all of its provisions and conditions are for the sole and exclusive benefit of the Parties and their successors and permitted assigns.

- 28.12 Proprietary Rights. Supplier agrees that in fulfilling its responsibilities under this Agreement, it will not use any process, program, design, device or material that infringes on any United States patent, trademark, copyright or trade secret (“Proprietary Rights”). Supplier agrees to indemnify, defend and hold harmless Company from and against all losses, damages, claims, fees and costs, including but not limited to reasonable attorneys’ fees and costs, arising from or incidental to any suit or proceeding brought against Company for infringement of third party Proprietary Rights arising out of Supplier’s performance under this Agreement, including but not limited to patent infringement due to the use of technical features of the GSDS to perform under this Agreement.
- 28.13 Exhibits. Each exhibit to this Agreement (collectively, “Exhibits”) constitutes an essential and necessary part of this Agreement.
- 28.14 Survival of Obligations. The rights and obligations that are intended to survive a termination of this Agreement are all of those rights and obligations that this Agreement expressly provides shall survive any such termination and those that arise from Supplier’s or Company’s covenants, agreements, representations, and warranties applicable to, or to be performed, at or during any time prior to or as a result of the termination of this Agreement, including, without limitation:
- (a) Supplier’s obligations under Section 9.2(b) (Termination by Company);
 - (b) The requirements of Article 23 (Audit);
 - (c) The indemnity obligations to the extent provided in Article 11 (Indemnification), Section 28.12 (Proprietary Rights) and Exhibit N (Participant Service Agreement Requirements);
 - (d) The requirements of Article 12 (Governing Law; Dispute Resolution); and
 - (e) The limitation of damages under Article 8 (Consequential Damages).
- 28.15 Negotiated Terms. The Parties agree that the terms and conditions of this Agreement are the result of negotiations between the Parties and that this Agreement shall not be construed in favor of or against any Party by reason of the extent to which any Party or its professional advisors participated in the preparation of this Agreement.
- 28.16 Change in Standard, System or Organization.
- (a) Consistent With Original Intent. If, during the Term of this Agreement, any standard, system or organization referenced in this Agreement should be modified or replaced in the normal course of events, such modification or replacement shall

from that point in time be used in this Agreement in place of the original standard, system or organization, but only to the extent such modification or replacement is mutually agreed by the Parties and generally consistent with the original spirit and intent of this Agreement.

- (b) Eliminated or Inconsistent With Original Intent. If, during the Term of this Agreement, any standard, system or organization referenced in this Agreement should be eliminated or cease to exist, or is modified or replaced and such modification or replacement is inconsistent with the original spirit and intent of this Agreement, then in such event the Parties will negotiate in good faith to amend this Agreement to a standard, system or organization that is mutually agreeable to the Parties and would be consistent with the original spirit and intent of this Agreement.

28.17 Certain Rules of Construction. For purposes of this Agreement:

- (a) The phrase “breach of a representation” includes a misrepresentation and the failure of a representation to be accurate.
- (b) “Including” and any other words or phrases of inclusion will not be construed as terms of limitation, so that references to “included” matters will be regarded as non-exclusive, non-characterizing illustrations.
- (c) “Copy” or “copies” means that the copy or copies of the material to which it relates are true, correct and complete.
- (d) When “Article,” “Section” or “Exhibit” is capitalized in this Agreement, it refers to an article, section or exhibit to this Agreement.
- (e) “Will” has the same meaning as “shall” and, thus, connotes an obligation and an imperative and not a futurity.
- (f) Titles and captions of or in this Agreement, the cover sheet and language in parenthesis following section references are inserted only as a matter of convenience and in no way define, limit, extend or describe the scope of this Agreement or the intent of any of its provisions.
- (g) Whenever the context requires, the singular includes the plural and plural includes the singular, and the gender of any pronoun includes the other genders.
- (h) Each Exhibit to this Agreement is hereby incorporated by reference into this Agreement and is made a part of this Agreement as if set out in full in the first place that reference is made to it.

- (i) Any reference to any statutory provision includes each successor provision and all applicable law as to that provision.
- (j) Acknowledging that the Parties have participated jointly in the negotiation and drafting of this Agreement, if an ambiguity or question or intent or interpretation arises as to any aspect of this Agreement, then it will be construed as if drafted jointly by the Parties and no presumption or burden of proof will arise favoring or disfavoring any Party by virtue of the authorship of any provision of this Agreement.

28.18 Electric Services by Company. This Agreement does not provide for any electric services by Company to Supplier. If Supplier requires any electric services from Company, Company shall provide such service on a non-discriminatory basis in accordance with Company's applicable Tariff schedule, as of the Execution Date, as amended or revised from time to time by Company or successors thereof.

IN WITNESS WHEREOF, Company and Supplier have caused this Agreement to be executed by their respective duly authorized officers as of the date first above written.

Company:

Supplier:

By: _____

By: _____

Name: _____

Name: _____

Its: _____

Its: _____

By: _____

By: _____

Name: _____

Name: _____

Its: _____

Its: _____

APPENDIX 1

PUC APPROVAL OF GRID SERVICES PURCHASE AGREEMENT

- (a) PUC Approval Order. The Parties acknowledge and agree that this Agreement is subject to approval by the PUC and the Parties' respective obligations hereunder are conditioned upon receipt of such approval, except as specifically provided otherwise herein. Upon execution of this Agreement, the Parties shall use good faith efforts to obtain, as soon as practicable, an order from the PUC ("PUC Approval Order") that does not contain terms and conditions deemed to be unacceptable to Company, and is in a form deemed to be reasonable by Company, in its sole, but nonarbitrary, discretion, ordering that:
- (i) This Agreement is approved; and order (i) approving the form of this Agreement as a template for all Grid Services Purchase Agreements and (ii) confirming that no approval need be sought from the PUC for each ensuing new Grid Service Purchase Agreement so long as the new agreement is substantially in the form of this Agreement.
 - (ii) The purchased cost of Grid Services to be incurred by Company as a result of this Agreement are reasonable;
 - (iii) Company's purchased Grid Services under this Agreement are prudent and in the public interest;
 - (iv) Company may include the Grid Services purchase costs incurred by Company pursuant to this Agreement, in Company's revenue requirements for ratemaking purposes and for the purposes of determining the reasonableness of Company's rates during the Term of this Agreement.
- (b) Non-appealable PUC Approval Order. The term "Non-appealable PUC Approval Order" means a PUC Approval Order that is not subject to appeal to any Circuit Court of the State of Hawai'i, Intermediate Court of Appeals of the State of Hawai'i, or the Supreme Court of the State of Hawai'i, because the period permitted for such an appeal ("Appeal Period") has passed without the filing of notice of such an appeal, or that was affirmed on appeal to any Circuit Court of the State of Hawai'i, Intermediate Court of Appeals of the State of Hawai'i, or the Supreme Court of the State of Hawai'i, or was affirmed upon further appeal or appellate process, and that is not subject to further appeal, because the jurisdictional time permitted for such an appeal and/or further appellate process such as a motion for reconsideration or an application for writ of certiorari has

passed without the filing of notice of such an appeal or the filing for further appellate process.

- (c) Company's Written Statement. Not later than thirty (30) Days after the issuance of a PUC Approval Order, Company shall provide Supplier with a copy of such PUC Approval Order together with a written statement as to whether the conditions set forth in Section (a) (PUC Approval Order) and Section (b) (Non-appealable PUC Approval Order) have been satisfied.
- (d) PUC Approval Date. As used in this Agreement, the term "PUC Approval Date" shall be defined as follows:
- (i) If Company provides the written statement referred to in Section (c) (Company's Written Statement) to the effect that the conditions referred to in Section (a) (PUC Approval Order) and Section (b) (Non-appealable PUC Approval Order) have been satisfied, the PUC Approval Date shall be the date of the issuance of the PUC Approval Order; or
 - (ii) If Company provides the written statement referred to in Section (c) (Company's Written Statement) to the effect that only the conditions referred to in Section (a) (PUC Approval Order) have been satisfied, the PUC Approval Date shall be as follows:
 - (A) If a PUC Approval Order is issued and is not made subject to a motion for reconsideration filed with the PUC or an appeal, the PUC Approval Date shall be the date one Day after the expiration of Appeal Period following the issuance of the PUC Approval Order;
 - (B) If the PUC Approval Order became subject to a motion for reconsideration, and the motion for reconsideration is denied or the PUC Approval Order is affirmed after reconsideration, and such order is not made subject to an appeal, the PUC Approval Date shall be deemed to be the date one Day after the expiration of the Appeal Period following the order denying reconsideration of or affirming the PUC Approval Order; or
 - (C) If the PUC Approval Order, or an order denying reconsideration of the PUC Approval Order or affirming approval of the PUC Approval Order after reconsideration, becomes subject to an appeal, then the PUC Approval Date shall be the date upon which the PUC Approval Order becomes a non-appealable order within

the meaning of the definition of a Non-Appealable PUC Approval Order in Section (b) (Non-appealable PUC Approval Order).

- (e) Unfavorable PUC Order. The term “Unfavorable PUC Order” means an order from the PUC concerning this Agreement that: (i) dismisses Company’s application; (ii) denies Company’s application; or (iii) approves Company’s application but contains terms and conditions deemed unacceptable by Company in its sole discretion and therefore does not meet the definition of a PUC Approval Order as set forth in Section (a) (PUC Approval Order). If Company receives an Unfavorable PUC Order, Company may, but is not required to, file a motion for reconsideration and/or an appeal. If Company files a motion for reconsideration or an appeal, the Parties’ respective obligations remain conditioned upon the receipt of the items enumerated in Section (a) (PUC Approval Order) and Section (b) (Non-applicable PUC Approval Order). If, after receipt of an Unfavorable PUC Order, Company files neither a motion for reconsideration nor an appeal, this Agreement is null and void, and neither Party owes any further obligation to each other.

End of Appendix 1

GSPA Exhibits

Exhibit A	Grid Service (GS)
	A-1 Fast Frequency Response
	A-2 (Excluded)
	A-3 Capacity
	A-4 (Excluded)
Exhibit B	(Excluded)
Exhibit C	(Excluded)
Exhibit D	(Excluded)
Exhibit E	Advanced Metering
Exhibit F	Operational Forecast
Exhibit G	Data, Integration, and Testing Requirements
Exhibit H	Contract Capability
Exhibit I	Service Level Agreements
Exhibit J	Reporting
Exhibit K	Settlement
Exhibit L	(Excluded)
Exhibit M	Customer Service Requirements
Exhibit N	Participant Service Agreement Requirements
Exhibit O	Form of Trademark License Agreement
Exhibit P	(Excluded)
Exhibit Q	Security Agreement
Exhibit R	Form of Letter of Credit

Exhibit A
Grid Services

Description and Requirements

1. Aligned to the tariffs proposed in the Integrated Demand Response Portfolio Plan (“IDRPP”) are the Grid Services Description defined below. As additional grid services are defined or refined, this section will be updated.
 - A. Fast Frequency Response (“FFR”) is a local discrete response at a specified frequency trigger. FFR acts to limit the frequency drop resulting from a frequency disturbance, such as loss of a generator. It assists in arresting the decline in frequency as a result of a contingency event. Updates to this Grid Service may be informed by any future updates to the Power Supply Improvement Plan or other appropriate Company filings.
 - B. Regulating Reserves (also known as Regulation Reserves, Secondary Frequency Response, or Regulation) is an ancillary service that is maintained to respond to supply and demand imbalances over short time frames, e.g. seconds to minutes. Resources that provide Regulating Reserves adjust their generation or load levels in response to an Automatic Generation Control “AGC” signal provided by the system operator. Updates to this Grid Service may be informed by any future updates to the Power Supply Improvement Plan or other appropriate Company filings.
 - C. Capacity Resources can be derived from generation resources, energy storage, or controlled load. Capacity for dispatchable generation is defined as the power (MW) rating of the unit. Capacity for variable generation is defined as the amount of capacity (MW) that can be assured in the next four (4) hours of the resource. Capacity of controlled load is defined as the minimum of load under control during the dispatch time window for Reduction Capacity, and maximum of load control during the dispatch time window for Build Capacity.
 - D. Replacement Reserves is resources that are available to serve load, or Load Resources removable from the system within a defined period.
2. Service Requirements.
 - A. Sections below further define the grid services and its delivery requirements.
 - (1) A-1 Fast Frequency Response Grid Service
 - (2) A-2 omitted
 - (3) A-3 Capacity Grid Service
 - (4) A-4 omitted

Exhibit A-1
Fast Frequency Response Grid Service

Fast Frequency Response – 2 (“FFR-2”) for island of Oahu

1. Additional Definitions.
 - A. Non-Event Days – Any day in which load is not manipulated by a GS Event.
2. Grid Service Description.
 - A. FFR-2 is a local discrete response at a specified frequency trigger. FFR-2 acts to limit the frequency drop resulting from a frequency disturbance, such as loss of a generator. It assists in arresting the decline in frequency as a result of a contingency event. Updates to this Grid Service may be informed by any future updates to the Power Supply Improvement Plan or other appropriate Company filings.
3. Service Requirements.
 - A. Resource. The Resource offering FFR-2 must have the following operating characteristics and technical capabilities:
 - (1) The Resource must be capable of the full range of the amount of FFR-2 capability offered without manual resource operator intervention of any kind.
 - (2) Supplier must ensure that its control and monitoring or related SCADA (Supervisory Control and Data Acquisition) equipment for its enrolled Resources are operational throughout the time period during which FFR-2 is required to be provided. Polling rate of monitored equipment must occur at a more frequent periodicity than the poll rate specified in Section 8.A. Communications and Control, below.
 - B. The Resource must return to its normal operating state at a rate not to exceed ten percent (10%) of Supplier’s total forecasted FFR-2 capability per minute until an aggregate of 50 MW or more is enrolled in the FFR-2 grid service across all Supplier Resources. When 50 MW or more of FFR-2 is available, the Companies will assign a ramp rate to a Supplier’s resource such that the maximum ramp rate across all Supplier Resources does not exceed five (5) MW per minute.
 - C. Response Timing and Accuracy. When the measured frequency is less than or equal to the frequency trigger (as specified in Section H), the Supplier’s Resource must be fully deployed within 12 cycles, including operating time of any devices. A deviation of +/- 0.02 Hz of the frequency trigger as specified in Section H will be permitted.
 - D. Availability requirement. FFR-2 grid service is subject to event Trigger 24 hours per day, as specified in Section H. See Grid Service Value Ratio in Exhibit K (Settlement), for 24 hour availability valuation of FFR-2 grid service.
 - E. Periods of No Availability. If Supplier is temporarily unable to provide FFR-2 service, Supplier shall update its Operational Forecast to identify the period(s) during which FFR-2 service will be unavailable.
 - F. Non-export provision. Supplier shall not be allowed to export energy into the Company System (i.e., no backfeed capability), unless otherwise permitted under an interconnection agreement, permitted under DER participant on requirements, or supplemental screening and review for each specific Resource.

G. Operational Requirements.

- (1) Return to normal operation. Supplier shall ensure that no snap back, i.e. a demand peak because of holding off participant load, occurs upon return to normal operation. The return ramp rate of the Resource shall adhere to Section B, Resource Return Ramp Rate.

H. Trigger. Supplier shall provide FFR-2 service when the system reaches the trip frequency trigger

- (1) Trigger set point shall be configurable remotely by Supplier.
- (2) This setting may be changed upon Company's written request as necessary for grid response coordination, up to twice annually.
- (3) Trip frequency requirement set point shall be 59.7 Hz.

I. Event Duration. Supplier must commence normal operation in accordance with Section G. Operational Requirements specified above.

- (1) Supplier shall provide service for a total of thirty (30) minutes after detection of the FFR-2 trigger described above or (at the Company's discretion) after detecting frequency holding between 59.95 and 60 Hz for one (1) minute. Event Duration Operational Requirements must be implemented consistently across Supplier's entire Resource.

4. Dispatch/Control Requirements. Supplier must demonstrate, or (at the Company's discretion) certify, to the Company Resource compliance with Section C. Response Timing and Accuracy.

5. Forecasting Requirements. Reserved.

- A. Refer to Exhibit F (Operational Forecast) for information regarding forecasting requirements.

6. Baseline. Not Applicable.

7. Performance Factor (PF) Calculations.

- A. The Performance Factor for each event will be the percentage of delivered capability compared to the forecasted capability, not to exceed 100%.

B. Performance Factor Calculation:

$$PF_e = \left[1 - \left| 1 - \frac{D_e}{F_e} \right| \right]^2$$

$$D_e = M_{interval_p} - \left(\frac{\sum_{i=1}^n M_{interval_i}}{n} \right)$$

- PF_e = Event Performance Factor
- D_e = Delivered capability (kW) during event e
- $M_{interval_p}$ = Meter reading in interval prior to deployment of FFR-2 service as specified in Section H. Trigger
- $M_{interval_i}$ = Meter reading(s) in interval(s) following deployment of FFR-2 service as specified in Section H. Trigger. Intervals which contain FFR-2 event trigger and Resource return to normal operation will not be counted for the purposes of Performance Factor Calculation (subject to specifications of Exhibit E (Advanced Metering)).
- n = Number of metering (telemetry) intervals in event
- F_e = Forecasted capability (kW) for time of event e

8. Communications and Control. Reserved.
 - A. Protocol/Specification. Supplier GSDS shall use OpenADR 2.0b to communicate with the DERMS. One OpenADR 2.0b certified Virtual End Node (VEN) will be required for FFR-2 communications and control.
 - B. Data. Capability in kW shall be made available for polling by the DERMS every one (1) minute using the OpenADR 2.0b Data Reports TELEMETRY_USAGE. Company may also require the TELEMETRY_STATUS report. During a GS Event, TELEMETRY_USAGE shall reflect Capability
9. Testing.
 - A. Manual Dispatch Test. The Resource must be able to be triggered by the Company manually. This manual trigger will serve as the Resource test. Specific OpenADR signal level will depend on the finalization of the design and implementation of the DERMS.
 - B. Annual Testing. Refer to Exhibit I (GSDS Service Level Agreement) for information regarding testing requirements.
10. Maximum Events Called Per Year: Not Applicable

Fast Frequency Response – 1 (“FFR-1”) for island of Oahu

1. FFR-1 Grid Service Description

Seller shall provide FFR-1 to rapidly inject or absorb energy in the event of a sudden and rapid system frequency disturbance.

- A. The aggregate fast frequency response control shall adjust, without intentional delay and without regard to any ramp rate limits, the Seller's net real power import or export based on the rate of change of frequency setting(s) and deadband specified by the Company.
- B. The aggregate fast frequency response shall be proportional to (or discrete but dynamically adjusted to the severity of) the disturbance.
- C. The aggregate output as adjusted by the aggregate fast frequency response control as measured at the aggregate Point of Interconnections (“POI(s)”) shall reach the control’s full commanded response in 200 milliseconds or less (12 cycles or less) from the initiation of the disturbance.
- D. The rate of change of frequency is proportional to the per unit generation/load mismatch and inversely proportional to the system inertial time constant. The aggregate shall be capable of receiving a periodically updated signal from the Company’s Demand Response Management System (“DRMS”) to assist in scaling the aggregate fast frequency response. If the DRMS signal becomes unavailable, the aggregate shall be capable using a local look up table as a substitute.
- E. The aggregate fast frequency response control shall be in continuous operation when the aggregate is online and connected to the Company unless directed otherwise by the Company.
- F. The aggregate fast frequency response design shall be approved in writing by the Company and implemented by the aggregate prior to conducting the System Integration Test.

Fast Frequency Response – 1 (“FFR-1”) for islands of Hawai‘i and Maui

1. FFR-1 Grid Service Description

The Seller shall provide FFR-1 with a frequency droop characteristic reacting to system frequency in aggregate in both the over-frequency and under-frequency directions. This response must be timely and sustained for the required period. To achieve the necessary response, frequency will be calculated over a period of time (e.g., three to six cycles, or other period as specified by Company), and filtered to take control action on the fundamental frequency component of the calculated signal. Calculated frequency may not be susceptible to spikes caused by phase jumps on the Company system.

The FFR control system, and overall response of the FFR resources, must meet the following performance aspects (see Figure 1 below):

The FFR control system shall have an adjustable proportional droop characteristic with a default value of 1%. The droop setting shall permit a setting from 0.1% to 4%. This setting shall be changed upon Company’s written request as necessary for fast frequency response coordination. The droop shall be a permanent value based on P_{max} (maximum nominal active power output of the FFR resource) and P_{min} (typically 0 for an inverter or load based resource). This keeps the proportional droop constant across the full range of operation. The droop response must include the capability to respond in both the upward (under-frequency) and downward (over-frequency) directions. Frequency droop will be based on the difference between maximum nameplate active power output (P_{max}) and zero output (P_{min}) such that the 1% droop line is always constant for a resource.

The active power-frequency control system shall have an adjustable frequency deadband with a default value of 0.3 Hz. The deadband setting shall permit a setting from 0.1 Hz to 1 Hz. This setting shall be changed upon Company’s written request as necessary for fast frequency response coordination. The deadband setting shall be tunable and may be specified during commissioning. It shall be a nonstep deadband such that the change in active power output starts from zero deviation on either side of the deadband. (Frequency deadband is the range of frequencies in which the unit does not change active power output.)

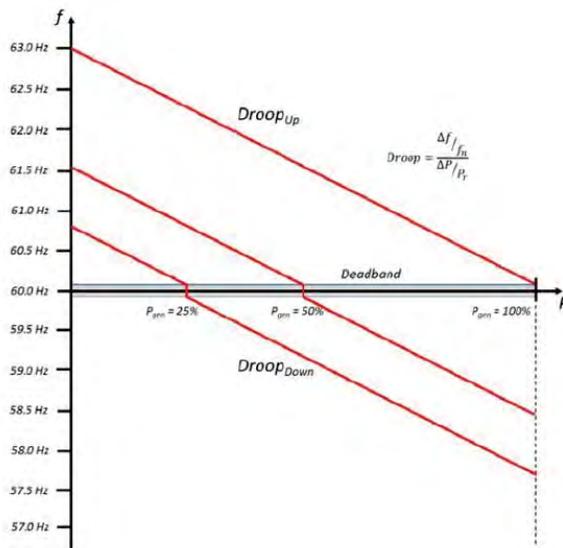


Figure 1: Active Power - Frequency Control Characteristic

The closed-loop dynamic response of the FFR control system of the overall FFR resources, as measured at the Point of Interconnection (“POI”) must have the capability to meet or exceed the performance specified in below. Seller shall ensure that the models and parameters for the resources and control equipment are consistent with those provided during the interconnection approval process and the necessary supplemental review that any updates have been provided to the Company reflecting currently implemented settings and configuration.

2. FFR-1 Performance Requirements

Dynamic Active Power-Frequency Performance. For a step change in frequency at the point of measure of the FFR resource:

Reaction time: The time between a step change in frequency and the time when the resource active power output begins responding to the change shall be less than 50 milliseconds (less than 3 cycles), or as otherwise specified by Company.^[1]

Rise time: The time when the resource has reached 90% of the new steady-state (target) active power output shall be less than 133 milliseconds (less than 8 cycles), or as otherwise specified by Company.^[2]

Settling Time: Time in which the resource has entered into, and remains within, the settling band of the new steady-state active power (target) output shall be less than 500 milliseconds, or as otherwise specified by Company.

Overshoot: Percentage of the rated active power output that the resource can exceed while reaching the settling band shall be less than 5% or as otherwise specified by Company.^[3]

^[1] Time between step change in frequency and the time to 10 percent of new steady-state value can be used as a proxy for determining this time.

^[2] Percentage based on final (expected) settling value.

Settling Band: Percentage of rated active power output that the resource should settle to within the settling time shall be less than 2.5%.

The aggregate and individual site's frequency response control shall adjust, without intentional delay and without regard to the ramp rate limits, the Sellers's net real power export based on frequency deadband and frequency droop settings specified by the Company.

The aggregate frequency response control shall increase the net real power export above the Power Reference Setpoint) or further decrease the net real power export from the Power Reference Limit in its operations in accordance with the frequency response settings. The response shall be sustained for 30 minutes. The Facility frequency response control shall be in continuous operation.

3. FFR-1 Performance Metric.

A. Fast Frequency Response Criteria. Following the Commercial Operations Date, the Seller shall respond appropriately to frequency disturbances in the Company System by operating in a manner consistent with standards and parameters established for FFR-1. With respect to such frequency disturbances in the Company System, the Seller shall be required to meet all of the following minimum frequency performance criteria (collectively, the “**FFR-1 Performance Metric**”):

- (1) The time between a step change in frequency and the response is no more than 1.3 times the target response time;
- (2) The resource achieves at least 63% of the new steady state active power output within the rise time;
- (3) The resource achieves at least 70% of the new steady state active power target within the settling time; and
- (4) Overshoot does not exceed 5% of the final steady state active power.
- (5) The new steady-state active power output is within the setting band.

Company will review historical operational data to determine the Seller's frequency response following disturbances and satisfaction of the Fast Frequency Response Performance Metric. Seller shall provide high resolution data from the individual sites requested by Company to assist in the review. To the extent the historical operational data is insufficient or otherwise lacking for purposes of determining the Seller's satisfaction of the FFR-1 Performance Metric, Company shall review Facility's performance under structured test conditions no less than once per Contract Year.

^[3] Percentage based on final (expected) settling value.

Exhibit A-3

Capacity Grid Service

Description and Requirements

1. Additional Definitions.
 - A. Non-Event Days – Any day in which Participant Facility demand is not manipulated by a Grid Service Event.
 - B. Similar Usage Days – Days that have the same usage characteristics, i.e., weekdays with other weekdays, non-holidays with other non-holidays, and Non-Event Days with other Non-Event Days.
2. Grid Service Description: Capacity Resources can be derived from generation resources, energy storage, or controlled load. Capacity for dispatchable generation is defined as the power (MW) rating of the unit. Capacity for variable generation is defined as the amount of capacity (MW) that can be assured in the next four (4) hours of the resource. Capacity of controlled load is defined as the minimum of load under control during the dispatch time window for Reduction Capacity, and maximum of load control during the dispatch time window for Build Capacity.
3. Service Requirements.
 - A. Resource. A Resource enrolled by Supplier offering Capacity Service must have the following operating characteristics and technical capabilities:
 - (1) Build: Provide Build service for a four (4) hour block during the system mid-day renewable generation peak, as specified under Section E. Availability Requirement, below.
 - (2) Reduction: Provide Reduction service for a four (4) hour block during evening peaking periods, as specified under Section E. Availability Requirement, below.
 - (3) Supplier must ensure that its control and monitoring or related SCADA equipment for its enrolled Resources are operational throughout the time period during which Capacity service is required to be provided. The polling rate of monitored equipment may not exceed the rate specified in Section 8.A. Communications and Control, below.
 - (4) Hawai'i Electric Light Company Specific Requirements
 1. Build: All resources must have the capability to increase load or reduce export for a minimum of 30 minutes to a maximum of 1 hour typically during transition periods surrounding day and evening peaks, may also occur at day minimum.
 2. Reduction: The Company requires that all resources must have the capability to reduce load or increase export typically during morning and evening ramping and peaking periods.

B. Resource Ramp Rate. Preceding a Capacity event, Supplier's enrolled Resource must ramp to its forecasted capability at the ramp rate (increase and decrease in MW/minute) specified below. Immediately following a Capacity event, the Supplier's Resource must return to its normal operating state at the ramp rate specified below.

(1) Hawaiian Electric Company Requirement:

1. The Resource must ramp to its forecasted Capability at a rate not to exceed ten percent (10%) of Supplier's total forecasted capability per minute until an aggregate of 50 MW or more is enrolled in the Capacity grid service across all Supplier Resources. When 50 MW of Capacity is available, the Companies will assign a ramp rate to a Supplier's resource such that the maximum ramp rate across all Supplier Resources does not exceed five (5) MW per minute.
2. The Resource must return to its normal operating state at a rate not to exceed ten percent (10%) of Supplier's total forecasted capability per minute until an aggregate of 50 MW or more is enrolled in the Capacity grid service across all Supplier Resources. When 50 MW or more of Capacity is available, Company will assign a ramp rate to Supplier's resource such that the maximum ramp rate across all Supplier Resources does not exceed five (5) MW per minute.

(2) Maui Electric Company Requirement:

1. The Resource must ramp to its forecasted Capability at a rate not to exceed ten percent (10%) of Supplier's total forecasted capability per minute until an aggregate of 20 MW or more is enrolled in the Capacity grid service across all Supplier Resources. When 20 MW or more of Capacity is available, Company will assign a ramp rate to Supplier's resource such that the maximum ramp rate across all Supplier Resources does not exceed two (2) MW per minute.
2. The Resource must return to its normal operating state at a rate not to exceed ten percent (10%) of Supplier's forecasted capability per minute until an aggregate of 20 MW or more is enrolled in the Capacity grid service across all Supplier Resources. When 20 MW or more of Capacity is available, Company will assign a ramp rate to Supplier's resource such that the maximum ramp rate across all Supplier Resources does not exceed two (2) MW per minute.

(3) Hawai'i Electric Light Company Requirement:

1. Preceding and immediately following a Capacity event, the Supplier's resource must meet its forecasted capability and return to its original state at a Ramp Rate (increase and decrease in MW/minute) of 2MW/minute.

C. Response Timeline: Supplier's enrolled Resources must take action in response to a dispatch command sent by Company as specified below.

(1) Build: Company will dispatch a build command at least eight (8) hours, but no longer than 24 hours prior to the build event. Supplier's Resource

portfolio shall ramp up to its Forecasted Build Capability in the thirty (30) minutes preceding the event at the Ramp Rate specified in Section 3.B Resource Ramp Rate, and must achieve the Capacity Capability provided in the Operational Forecast by the start of the build event. Following the Event, Supplier may return to its normal operating state in the thirty (30) minutes after the end of the build event at the Ramp Rate specified in Section 3.B Resource Ramp Rate, or after receiving a command from Company's system operations department at the Ramp Rate specified in Section 3.B Resource Ramp Rate.

- (2) Reduction: Company will dispatch a Reduction command at least ten (10) minutes but no longer than 24 hours prior to the Reduction event. Supplier's Resource portfolio must meet its Forecasted Reduction Capability within two (2) minutes from the event start time. Following the Event, Supplier may return to its normal operating state in the thirty (30) minutes after the end of the build event at the Ramp Rate specified in Section 3.B Resource Ramp Rate, or after receiving a command from Company's system operations department at the Ramp Rate specified in Section 3.B Resource Ramp Rate.
- (3) Hawai'i Electric Light Company Specific Requirements
 1. Supplier Resources must respond to a dispatch command immediately upon receipt of the dispatch command sent by the Company.

D. Event Duration.

- (1) Build: Supplier shall provide service for four (4) hours during specified timeframes.
- (2) Reduction: Supplier shall provide service for up to four (4) hours for Reduction during specified timeframes. Event duration will be at the discretion of Company's system operations department at the time of event trigger.
- (3) Hawai'i Electric Light Company Specific Requirements
 1. Build: All resources must have the capability to increase load or reduce export for a minimum of 30 minutes to a maximum of 1 hour.
 2. Reduction: All resources must have the capability to reduce load or increase export for a minimum of 30 minutes to a maximum of 1 hour.

E. Availability Requirement: Supplier's Resource portfolio must be available to provide Capacity service for specified build and reduction periods. These periods should be reflected in the Supplier's operational forecast.

- (1) Build: 10:00AM – 2:00PM
- (2) Reduction: 5:00PM – 9:00PM
- (3) Hawai'i Electric Light Company Specific Requirements
 1. Build: 12:00AM – 4:00AM & 8:00AM – 5:00PM
 2. Reduction: 6:00AM – 9:00AM & 4:00PM – 8:00PM

- F. Periods of no Availability: If Supplier is temporarily unable to provide Capacity service, Supplier shall update its Operational Forecast to identify the period(s) during which Capacity service will be unavailable.
 - G. Non-export provision: Supplier shall not be allowed to export energy into the Company System (i.e., no backfeed capability), unless otherwise permitted under an interconnection agreement, permitted under DER participation requirement, or supplemental screening and review for each specific Resource.
 - H. Operational Requirements: If there is an interruption due to a system contingency event, for up to one (1) hour duration of interruption, Supplier's Resources will be allowed to provide Capacity (Load Build and Load Reduction) service after the contingency event for the same amount of time as the interruption event beyond the Build period specified in 3.E Availability Requirement.
4. Dispatch/Control Requirements.
 - A. Trigger. Supplier shall receive a signal from the DERMS
 5. Forecasting Requirements. Reserved.
 - A. A separate forecast file will be required for Capacity Build and Capacity Reduction.
 - B. Refer to Exhibit F (Operational Forecast), for information regarding forecasting requirements.
 6. Baseline.
 - A. Estimated Baseline Calculation. The Estimated Baseline calculation shall take the average demand of the ten (10) previous Similar Usage Days, using five (5) minute interval data for the same period as the Event. This establishes the average normal demand for the Participating Facility during the Event period based on the corresponding interval points from the previous ten (10) Similar Usage Days.
 7. Performance Factor Calculation.
 - A. The Performance Factor for each event will be the percentage of delivered capability compared to the forecasted capability.
 - B. The data used for delivered capability and forecasted capability for the purpose of establishing the performance factor will be averaged over one hour.
 - C. The ramp-in and ramp-out periods of any event will not affect the Performance Factor calculation of the event.
 - D. Performance Factor Calculation:
$$PF_e = \frac{\sum_{i=1}^n \left(1 - \left| 1 - \frac{D_{interval_i}}{F_{interval_i}} \right| \right)^2}{n}$$
 - PF_e = Performance Factor during Build/Reduction period
 - $D_{interval_i}$ = Delivered capability (kW) during interval i
 - $F_{interval_i}$ = Forecasted capability (kW) for time of interval i
 - i = 1 hour interval
 - n = number of 1 hour intervals in an event
 8. Communications and Control.

- A. Protocol/Specification. Supplier GSDS shall use OpenADR 2.0b to communicate with the DERMS. One OpenADR 2.0b certified Virtual End Node (VEN) will be required for Capacity Build communications and control and Capacity Reduction communications and control. Data and Signal requirements apply to each VEN.
- B. Data. Capability in kW shall be made available for polling by the DERMS every five (5) minutes using the OpenADR 2.0b Data Reports TELEMETRY_USAGE. Company may require the TELEMETRY_STATUS report. During a GS Event, TELEMETRY_USAGE shall reflect Capability
- C. Signal. Signal may be a direct control signal activating Capacity Grid Services or may be a request to reserve Capacity Grid Services. Specific OpenADR signal level will depend on the finalization of the design and implementation of the DERMS.

9. Testing.

- A. Annual Testing. Refer to Exhibit I (GSDS Service Level Agreement), for information regarding testing requirements.

10. Maximum events called per year:

	2018	2019	2020	2021	2022	2023
Oahu						
- Build	52	80	104	104	104	104
- Reduction	52	80	104	104	104	104
Maui						
- Build	104	124	144	144	144	144
- Reduction	104	124	144	144	144	144
Hawaii						
- Build	104	124	144	144	144	144
- Reduction	104	124	144	144	144	144

In the event that Supplier’s Contract Start Date does not allow participation for a full calendar year, the maximum events called per year for affected year(s) may be prorated based on Contract Start Date, at the discretion of Company.

Exhibit E

Advanced Metering

1. Purpose

The purpose of this Exhibit E (Advanced Metering) is to establish metering requirements for Suppliers who offer Grid Services to Company using Customer resources. Any metering equipment placed into service or returned to service shall meet the provisions as set forth in this Exhibit.

2. Metering Requirements

2.1 Data interval requirement

Supplier shall monitor, collect, and report monthly 5-minute interval demand and generation data. This may be accomplished in one of two ways:

1. Supplier can install a monitoring device on each enrolled and enabled device, or
2. Supplier can install a whole house/whole building monitoring device for each participating customer.

2.2 Applicability

These requirements apply to all residential customers and any commercial customers who do not have interval meters already installed.

For commercial customers with interval data: if a commercial customer has a 15-minute interval meter installed, Company shall upgrade it to a 5-minute interval meter.

Supplier must conform to applicable Laws (including tariff requirements) including, as applicable, performance, monitoring and control capabilities.

2.3 Validity

Upon Company's implementation of a next generation metering system, including installation or upgrade of customer meter, a telecommunications network and a corresponding Meter Data Management System (MDMS), these metering requirements described herein will no longer be applicable. Upon that event, Company will install and operate advanced meters for all Participants. Company will assume responsibility for the calibration of the advanced meters and assume responsibility for meter data management. At that time, a Supplier may interface with Company's meters.

3. Metering accuracy specifications

3.1 Acceptable performance

The performance of Supplier metering equipment is acceptable when the percent registration is not less than 98% or more than 102%. This is effectively an accuracy requirement of $\pm 2\%$.

4. Testing and Test Plan

Metering equipment shall be tested by Supplier prior to or during installation. In addition, Supplier shall define a Test Plan that is designed to test metering equipment at or prior to installation, and monitor a reasonable percentage of the installed metering equipment to verify the metering equipment's accuracy and performance during the Term. Supplier shall have flexibility to define the Test Plan so that it is appropriate for the type of metering equipment used by Supplier. The Test Plan shall document Supplier's test, calibration and maintenance procedures of Supplier installed metering equipment. The Test Plan shall be delivered to Company for review and the plan must be approved by Company prior to the start of Grid Service delivery by Supplier; Company's approval is not to be unreasonably withheld.

5. Additional Specifications by Grid Service

5.1 Fast Frequency Response

In addition to the 5-minute interval demand values, as per Exhibit A-1 – Fast Frequency Response Grid Service Description and Requirements, Supplier shall demonstrate through a mutually-agreeable certification process, that the end devices are capable of detecting a frequency reading of 59.7 Hz and responding to this measurement within 12 cycles of the frequency reaching that 59.7 Hz state. Beyond this requirement, 5-minute interval data will be sufficient for verifying the 30-minute delivery requirement associated with FFR. This data will be used for the verification of event response. Supplier shall submit this data to Company at the end of each month for event performance assessment.

6. Reporting and documentation

Supplier shall make the following reports available to Company:

- A monthly report summarizing end device response to FFR events including all data specified in Section 5.1.
- Any updates or changes to the Supplier's Test Plan, annually.

Exhibit F

Operational Forecast

The Operational Forecast represents Supplier’s Total Grid Service Capability for the given period. An Operational Forecast is required for each Grid Service that Supplier is contracted to provide as Capability. The Operational Forecast shall be made available to the DERMS via CSV files in accordance with the following attributes:

Attributes	FFR	Capacity Build	Capacity Reduction
Forecast Capability	kW/kWh	kW/kWh	kW/kWh
Forecast Term	Min 4 days	Min 4 days	Min 4 days
Data Resolution (Interval)	15 Minute	15 Minute	15 Minute
Update Timing	Hourly	1am/1pm	1am/1pm
Update Frequency	Hourly	12 hours	12 hours

Table 1 - Operational Forecast Attributes

The values stated in Table 1 may be changed periodically at the discretion of Company (example: as the grid service resources are used, the experience may require the System Operators to request for different forecast requirements).

The table below shows the fields included in the file from the Aggregator to DERMS with the Aggregated Forecast capability. The format will be a CSV file. The values/columns will be in the order described in following table.

Field Name	Format	Values/Comments
VEN ID	String	ID of the Aggregator’s VEN for this Grid Service. The VEN ID will be used for both the Service Point and Device ID. Unique identifier used in import.
Aggregator Id	Char 16	ID for the Aggregator who is providing the forecast. Used in verifications.
Grid Service Name	String	Name of the Grid Service for which the Aggregator is providing the forecast. As the Aggregator will have 1 VEN per Grid Service, this is not used in import. Informational
Forecast Unit of Measure	String	Identifier of the type of forecast value being provided. Values <ul style="list-style-type: none"> Aggregate Operational Forecast KWH 5 Minute Aggregate Operational Forecast KW 5 Minute
Forecast Interval End Time	Date/Time	End of interval timestamp for the forecast value. MM/DD/YYYY HH:MM where HH is a 24 hour clock (0-23)
Forecast Value	Real	Aggregator’s forecast capability (shed) aggregated for all their enrolled customers in this Grid Service. This will be reported as a positive number.

Table 2 – Operational Forecast Import File Fields

File Pattern = *.csv

Suggested pattern: <AggregatorName><GridService><FileCreateDateTime>.csv

One Operational Forecast file will be submitted per grid service (FFR, Capacity Build, Capacity Reduction) at the intervals specified in Table 1.

The Operational Forecast shall be updated within 10 minutes to reflect the activation or reservation of Grid Service Capability and the impact of the activation or reservation on any other Grid Service Capability. For example, if a Participant Resource Capability is enabled for participation in both FFR and Capacity Build Grid Services, at the time that Capacity Build is scheduled for the next day, the Operational Forecast should be updated to remove the Participant Resource Capability from the FFR Grid Service Operational Forecast. The updated FFR Grid Service Operational Forecast must be available to the DERMS within 10 minutes.

Any change to Supplier's Resource(s) that results in a change to the Grid Service Capability that the Company may activate or reserve that was provided in the previous update of the Operational Forecast, shall result in an updated Operational Forecast that shall be updated to the Company within 5 minutes of the change.

If Supplier is unable to provide Grid Service Capability for any reason for a period of less than four (4) hours, Supplier shall update its Operational Forecast within 5 minutes to identify the period(s) during which Grid Service Capability will be unavailable.

Capacity Build shall be forecasted for the Build period, e.g. 10am-2pm, intervals outside the Build period shall be zero.

Capacity Reduction shall be forecasted for the Reduction period, e.g. 5pm-9pm. Intervals outside the Reduction period shall be zero.

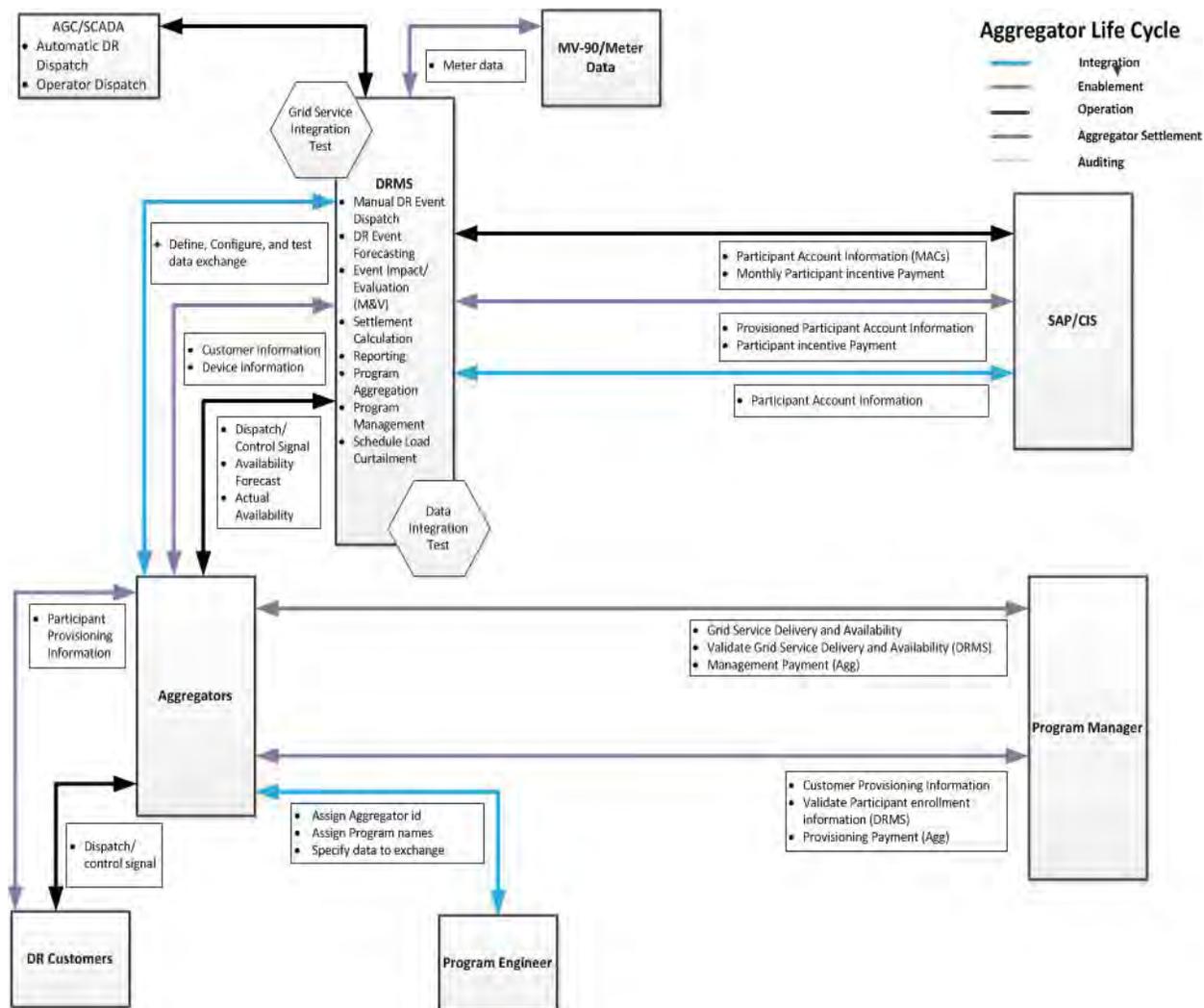
If the failure to make the Operational Forecast available to Company is the result of Force Majeure, Supplier shall notify Company as soon as practicable via telephone.

Exhibit G

Data, Integration, and Testing Requirements

Overview

This Exhibit G provides an overview of integrating with the Companies' Distributed Energy Management System (DERMS). Detailed instructions and steps are provided in the Aggregator Handbook. The following diagram represents the processes required to implement and maintain data exchange and control functionality between Supplier and Company for purposes of scheduling or dispatching Grid Services Capability.



Process Definitions

Integration Process is the initial integration of data exchanges to communicate participant status, incentives, enablement information and control functionality between the Company's

DERMS and Supplier's GSDS. The Integration Process is concluded by a successful Data Integration and inaugural Grid Service Integration Test.

Enablement Process is the ongoing enablement of Participant Resource Capability by Supplier and the submission of Participant information to the DERMS to be included in the Dispatch or scheduling of Supplier's Grid Services Capability.

Operation Process is the ongoing dispatch or scheduling of Supplier's Grid Services Capability and updates from Supplier to Company. Additional data and integration requirements for the Operation Process are specified in Exhibit F (Operational Forecast).

Aggregator Settlement Process is the monthly provisioning of data to Company to support Supplier's Management and Enablement payment.

Audit Process is the periodic verification of data provided to Company.

Data Integration

The following data exchanges are required between Supplier's GSDS and the DERMS. Data shall be delivered in a flat file transmitted via secure File Transport Protocol (FTP) to a FTP designated by Company. Format of the file will be extensible markup language (XML).

Participant Enablement Status

Supplier will provide to Company a file (Participant Enablement File) that contains data describing Participants that have been enabled and are ready to be included in the dispatch or scheduling of Supplier's Grid Services Capability. After the receipt and processing of the Participant Enablement File by the DERMS, Company anticipates the Participant's Resource Capability to be included in Supplier's Operational Forecast, see Exhibit F (Operational Forecast), and available for dispatch or scheduling of Supplier's Grid Services Capability. The file will be updated to Company daily except weekends and holidays and will reflect changes since the previous file was provided, i.e. incremental changes. This file will also reflect any Participant removal from participation.

The following data is anticipated to be provided in the Participant Enablement File, but will not be finalized until the DERMS is implemented:

Field	Comments
Enroller Id	Assigned by HECO
Enroller Type	Aggregator
Contract Account Number	Account number
Meter Id	Required for aggregator
W4 Email	Email to receive any Federal tax information
Participant Name	
Participant Service Address	
GS Program Name	Assigned by HECO

Participant Resource Capability	Nominated Load – required for enrollment
Participant Resource Capability Start Date	Nominated Load Effective start date – required for enrollment
Enrollment Start Date	
Enrollment End Date	Required for de-enrollment
Incentive name	Minimum incentive, Additional incentive, etc.
Incentive value	How much incentive
Incentive Start Date	Incentive effective start date

An entry is required for each Grid Service program for which Supplier anticipates Participant’s Resource Capability to be available for dispatch or scheduling of Supplier’s Grid Services Capability, likewise for the withdrawal of any Participants’ Resource Capability. For example, if Supplier enables a Participant’s Resource Capability to deliver FFR and Capacity Build Grid Services, two entries shall be present in the Participant Enablement File with a different GS Program Name, as provided by Company, to represent each of the Grid Services. Certain fields in the Participant Enablement File require a timestamp; any change or update to these fields requires a update to the corresponding date field, for example, resetting Participant Resource Capability, to the extent allowed.

Company will provide Supplier with its Supplier ID and permitted GS Program Names.

In developing the Participant Resource Capability, Supplier should take into account the expected load shape for the enrolled device as compared to the Grid Service Value Ratio (as defined in Exhibit K (Settlement)) to determine the weighted average hourly capability per service for the individual device.

Participant Incentives

Supplier will provide to Company a comma-separated values (CSV) file (Participant Incentives File) that contains Participant Energy incentive, as applicable, for each Participant identified independently. The file will be updated to Company monthly by the 7th of each month and will reflect energy incentives to be paid to Participants based on the previous month’s performance.

Field name	Comments
Enroller Id	Assigned by Company
Contract Account	Participant’s Account No. to which incentive should be applied. Must match account number supplied with Participant’s enrollment
Utility Contract	Contract No. from Participant bill
GS Program Name	Assigned by HECO
Incentive Type	Must be Energy

Incentive Month	Month to which the incentive applies.
Incentive Amount	

GSDS Integration Test

The GSDS Integration Test is performed in two parts: A) Data Integration Test and B) Grid Service Dispatch Test. Test plans and test preparation (e.g. scripts) may be developed concurrently, but both tests must be successfully completed to achieve GSDS certification for Grid Service delivery.

Grid Service Dispatch Test must include the operation and control of at least one Participant Resource.

Part A: Data Integration Test

The purpose of the Data Integration Test is to verify and validate that the exchange of data in the Participant Enablement File and Participant Incentive File is performed reliably and consistently, and that the data and data files are produced and consumed by Supplier’s GSDS and Company’s DERMS properly. The details of preparing for and performing the Data Integration Test shall be agreed to by Supplier and Company but will adhere to the following guidelines:

- A Data Integration Test Plan shall be developed by Supplier in coordination with Company and agreed to by Supplier and Company.
- The Data Integration Test Plan will include independent integration tests for the exchange of data in the two Participant data files identified above.
- The Data Integration Test Plan will at a minimum include the following use cases:
 - Customer Enrollment: Customer enrolls in DR
 - Customer Unenrollment: Customer unenrolls from DR
 - Customer Changes: Modifications to a customer’s enrollment, i.e. incentives or capability
 - Customer Moves: Special case for customer move outs and move ins
 - Participant incentive amounts are received from Supplier
 - Failure to deliver or receive data exchange
- Each independent integration test will at a minimum include the purpose of the test, any external dependencies, test description, and expected results.
- Company will make available to Supplier a DERMS test system for purposes of preliminary testing.
- Before Supplier may initiate data exchanges with Company’s production DERMS, tests identified in the Data Integration Test Plan must be performed on the DERMS test system and the tests must result in the expected results defined in the Data Integration Test Plan.
- If practical, Company anticipates some “burn-in” period, for example 3-7 days, to be included in the Data Integration Test Plan to demonstrate reliable and consistent data exchange between Supplier’s GSDS and Company’s DERMS.

- When the Data Integration Test Plan has been performed on Company's production DERMS and the tests performed result in the expected results defined in the Data Integration Test Plan, the Data Integration Test will be deemed successful.

Part B: Grid Service Dispatch Test

The Grid Service Dispatch Test will be performed for each Grid Service for which Supplier has provided a Contract Capability. The purpose of the test is to demonstrate the controllability of Supplier's Grid Service Capability by Company via operable communications as specified by the Grid Service Requirements. Controllability of Supplier's Grid Service Capability is demonstrated by the following:

- Receipt of Supplier's Operational Forecast for each Grid Service as specified in Exhibit F by DERMS.
- Issuance of signal¹ from the DERMS to activate Supplier's Grid Service Capability.
- Receipt of signal by Supplier's GSDS to activate Grid Service Capability.
- Subsequent update of Operational Forecast by Supplier GSDS to the DERMS to reflect the activation or reservation of Grid Service Capability and the impact of the activation or reservation on any other Grid Service Capability.
- Activation of Supplier Grid Service Capability and updates to Capability as prescribed by the Grid Service Description and Requirements exhibits (Exhibit A-1 (Fast Frequency Response Grid Service) and Exhibit A-3 (Capacity Grid Service)).

The details of preparing for and performing the Grid Service Dispatch Test shall be agreed to by Supplier and Company but will adhere to the following guidelines:

- A Grid Service Dispatch Test Plan shall be developed by the Supplier in coordination with Company and agreed to by Supplier and Company.
- The Grid Service Dispatch Test Plan will include independent tests for each Grid Service Capability as specified in the Grid Service Description and Requirements exhibits (Exhibit A-1 (Fast Frequency Response Grid Service) and Exhibit A-3 (Capacity Grid Service) and as contracted by Supplier.
- Independent tests will evaluate controllability of Grid Service Capability and behavior under certain conditions such as loss of communications.
- Each independent test shall at a minimum include the purpose of the test, any external dependencies, test description, and expected results.
- Company will make available to Supplier a DERMS test system for purposes of preliminary testing.
- Before Supplier may initiate Grid Service Dispatch Test on Company's production DERMS, tests identified in the Grid Service Dispatch Test Plan must, at a minimum, have been executed to the satisfaction of Company on the DERMS test system.

¹ Signal may be a direct control signal activating Grid Services or may be a request to reserve Grid Services for future activation as described by Grid Service Exhibits A-1 through A-4.

- When the Grid Service Dispatch Test Plan has been performed on Company's production DERMS and the tests performed result in the expected results defined in the Grid Service Dispatch Test Plan, the Grid Service Dispatch Test will be deemed successful.

Test Plan Approval

Supplier shall submit Test Plans as soon as practicable after contract execution. Company will review and respond to Supplier's submitted Test Plans within ten (10) Business Days. Test Plans must be agreed to at a minimum of three (3) Business Days in advance of Test Plan execution.

GSDS Certification for Grid Service Delivery

The GSDS will be certified for Grid Service delivery after the successful completion the Data Integration Test Plan and Grid Service Dispatch Test Plan on Company's production DERMS. Company will notify Supplier within two (2) Business Days after the successful completion of the Data Integration Test Plan and/or Grid Service Dispatch Test Plan. Company will provide electronic and written notification of GSDS certification to Supplier within two (2) Business Days of successful completion of the Data Integration Test Plan and Grid Service Dispatch Test Plan.

Company will not accept or pay invoices for Enabled Capability prior to Service Commencement Date and likewise Company will not Dispatch Grid Services prior to Service Commencement Date.

Exhibit H

Contract Capability

Supplier Name	
Submission Date	

		Oahu			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Oahu			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Oahu			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Maui			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawaii			
		Fast Frequency Response			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawaii			
		Capacity Build			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Supplier Name	
Submission Date	

		Hawaii			
		Capacity Reduction			
		Contract Capability [kW]			
	Quarter	Residential	SMB	Commercial	TOTAL
Contract Year 1	1				
	2				
	3				
	4				
Contract Year 2	1				
	2				
	3				
	4				
Contract Year 3	1				
	2				
	3				
	4				
Contract Year 4	1				
	2				
	3				
	4				
Contract Year 5	1				
	2				
	3				
	4				

Exhibit I

GSDS Service Level Agreement

1. GSDS Availability

The GSDS must be available for the dispatch or scheduling of Grid Services Capability by Company 24 hours a day, 365 days a year. GSDS availability will be calculated as uptime. GSDS availability calculation shall begin at the System Integration Date. Availability applies to any components or elements that make up the GSDS that either individually or collectively prevent or hinder Company's ability to schedule or dispatch Supplier's Grid Service Capability.

1.1 Maintenance Downtime

Maintenance downtime ("Maintenance Downtime") for the GSDS shall not exceed four (4) hours per month. Supplier shall give Company at least seven (7) Business Days advance notice by email to the email accounts specified by Company. Maintenance Downtime will be planned to occur during the hours of 11 PM-4 AM HST, as practicable. Maintenance Downtime shall be used for update releases of the GSDS, including, for example, bug fixes, patches, error corrections and minor enhancements of and to the GSDS (collectively, "minor updates") or new versions of the GSDS that include significant hardware changes or enhancements in features, performance or functionality (collectively, "major updates"). Maintenance Downtime will not be deducted from minutes GSDS is available to dispatch or schedule Grid Service Capability. Maintenance Downtime shall be indicated as appropriate in Supplier's Operational Forecast and updated to the Company in accordance with Exhibit F (Operational Forecast).

1.2 Emergency Downtime

Emergency downtime ("Emergency Downtime") for the GSDS shall not exceed two (2) hours per month. Supplier shall give Company at least 24 hours' advance notice by telephone. If practicable, Emergency Downtime should be scheduled during 11 PM-4 AM HST. Emergency Downtime will not be deducted from minutes GSDS is available to dispatch or schedule Grid Service Capability. Emergency Downtime shall be indicated as appropriate in Supplier's Operational Forecast and updated to the Company in accordance with Exhibit F (Operational Forecast).

1.3 Unscheduled Downtime

Unscheduled downtime ("Unscheduled Downtime") accounts for any time when the GSDS is not available to Dispatch or schedule Grid Service Capability, for which notification of Emergency Downtime or Maintenance Downtime has not been provided. For any Unscheduled Downtime for the GSDS, Supplier shall notify Company as soon as practicable. If possible, Unscheduled Downtime shall be indicated as appropriate in Supplier's Operational Forecast and updated to the Company in accordance with Exhibit F (Operational Forecast).

2. Uptime Metric

Supplier GSDS shall maintain 85% uptime or higher per month. 85% uptime equates to 6,480 minutes or 4.5 days of Unscheduled Downtime per month. The GSDS will be available on average 85% of the time, measured on a Calendar Monthly basis, less scheduled maintenance. “Uptime” is defined as follows:

$$\frac{\text{Uptime Percent}}{\text{Percent}} = \frac{\text{Minutes GSDS is available to dispatch or schedule Grid Service Capability}}{\text{Total number of minutes in the applicable month (typically 43,200)}}$$

Minutes GSDS is available to dispatch or schedule Grid Service Capability will be measured by tracking online and offline status of Supplier’s GSDS as represented by their Virtual End Node in Company’s DERMS.

3. Company DERMS Availability

If the DERMS is unavailable due to scheduled maintenance or Unscheduled Downtime, such that the GSDS cannot perform or support mission critical functions, the total number of minutes of DERMS downtime will be deducted from the total number of minutes in the applicable month.

3.1 Maintenance Downtime

Company will provide Supplier at least five (5) Business Days advance notice by email to the email accounts or other method as specified by Supplier of DERMS Maintenance Downtime.

4. Tracking and Reporting

Supplier shall submit monthly reports to validate GSDS availability and include, but not be limited to uptime and Maintenance Downtime statistics. In addition, Supplier shall track and report on a monthly basis the following items:

1. All problem resolution requests submitted by Company and their resolution.
2. Modifications to GSDS, such as minor updates or other modifications that did not require downtime, but resulted in changes to the GSDS, including but not limited to software, firmware, hardware and communication protocols.
3. Errors or inconsistencies in measurements and corrective action taken to resolve such errors to Supplier installed metering equipment as specified in Exhibit E (Advanced Metering).

5. Problem Reporting, Response, and Resolution

When software vulnerabilities are revealed and addressed by a patch, Supplier will obtain the patch from the applicable vendor and apply it as it is tested and determined to be safe for installation.

Problem Reporting. Company shall report any technical or connectivity problems with the GSDS as follows:

1. Company shall submit resolution requests via online support portal, if available, otherwise via email or phone call. Supplier shall provide 24-hour phone number for requesting resolution of Priority 1 or 2 problems and to respond to Participant calls received by Company's customer service representatives and relayed to Supplier as described below.
2. Priority of problem reports shall be determined in accordance with the following guidelines:
 - Priority 1: A priority 1 ("P1") level should be used to request resolution of a problem causing the GSDS to not be available.
 - Priority 2: A priority 2 ("P2") level should be used to request resolution of any problem causing any mission critical function of the GSDS to perform unacceptably or to fail. Mission critical functions of the GSDS include provisioning of Operational Forecast as described in Exhibit F (Operational Forecast), provisioning of Participant Enablement Status, including subsequent enrollment transactions, and Participant Incentives as described in Exhibit G (Data, Integration, and Testing), and Grid Service Communications and Control as described in Section 8 of each of the Grid Service Description and Requirements Exhibits (Exhibit A-1 (Fast Frequency Response Grid Service), Exhibit A-2 (Regulating Reserve Grid Service), Exhibit A-3 (Capacity Grid Service) and Exhibit A-4 (Replacement Reserve Grid Service)).
 - Priority 3: A priority 3 ("P3") level should be used to request resolution of any problem related to the GSDS that does not qualify as a P1 or P2 level request.
3. Participant calls received by Company's call center, where life safety concerns are identified will be submitted as a P1 level request. All other calls received by Company's call center will be submitted as a P3 level call.

Problem Response. Supplier shall respond to Company problem resolution requests and use commercially reasonable efforts to resolve problem and return GSDS to normal operation in the time frames described in the table set forth below:

Priority Level	Response Time	Target Resolution Time
P1	Thirty (30) Minutes	One (1) Hour
P2	Two (2) Hours	Eight (8) Hours
P3	Twelve (12) Hours	Five (5) Days

Table 1: Problem Response Time Periods by Priority Level

Company acknowledges that the Target Resolution Time metrics are only targets and cannot be guaranteed. If Target Resolution Time cannot be achieved for a problem resolution request, the request will be remediated as described in Section 6 below.

The following definitions shall be used:

Priority Level: Level assigned to a given problem resolution request based on the guidelines set forth in this section.

Response Time: The time period for Supplier to acknowledge the submission by the problem resolution request by Company. Such period will commence on submission of the problem resolution request to the online support portal, via email or phone call and conclude upon first response by Supplier.

Target Resolution Time: The target time period for Supplier to resolve the problem or provide a work-around or other temporary fix. Such period will commence on submission of the problem resolution request to the online support portal, via email or phone call and conclude when such request is identified as resolved and shall not include any time that a request is identified as awaiting Company input.

For P1 and P2 level requests, hours and days shall be determined on a 24 x 7 x 365 basis and may be submitted 24 x 7 x 365. For all other requests, hours and days shall be determined on a 24 x 5 basis, excluding federal and state holidays. In the event that Supplier addresses any request to resolve a problem by providing a work-around or other temporary fix, Supplier will use commercially reasonable efforts to determine a permanent resolution to the problem described in the problem resolution request.

For all P1 and P2 level requests, Supplier shall provide a post mortem report describing Problem Report, resolution, and steps taken to ensure the problem will not re-occur, within fourteen (14) days of problem resolution.

If Supplier does not respond to P1 and P2 level requests within in the Response Time specified in Table 1 above, each ten (10) minutes past the Response Time (Response Time + 10 minutes) will be subtracted from the minutes GSDS is available to dispatch or schedule Grid Service Capability that is used in the Uptime calculation. Company allows for a ten (10) minute grace period beyond the Response Time specified in Table 1 before deducting minutes from GSDS monthly availability.

6. Remediation

Upon Company's request, Supplier and Company shall meet to review the availability of the GSDS. In the event of a consistent failure of Supplier to meet the timelines stated in Section 6, or should other operational issues be identified by Company or Supplier, or as a result of submission of a Problem Report, Supplier will develop a remedial plan to rectify such failure and a suggested timetable for its implementation ("Recovery Plan"). The

Parties shall negotiate in good faith to agree to a Recovery Plan. Supplier shall implement the Recovery Plan in accordance with its terms and shall be responsible for all costs and expenses incurred in the implementation of the Recovery Plan. Supplier's failure to implement the approved Recovery Plan is an Event of Default under Section 6.1(a) (Default by Supplier) of the Grid Services Purchase Agreement.

7. GSDS Re-Test

Company reserves the right to retest the GSDS, upon the completion of major updates or to ensure resolution of a P1 or P2 level problem report. Retest of the GSDS may also be included in the Recovery Plan. Retest will be performed in accordance with Exhibit G (Data, Integration, and Testing Requirements).

8. GSDS Annual Test

Company reserves the right to request an annual test of the GSDS. Retest will be performed in accordance with Exhibit G (Data, Integration, and Testing Requirements).

9. Failure to Meet Availability Requirements

If Supplier fails to comply with Uptime Metric specified in Section 2, the following reductions in management fees will be applied:

1. Third incidence of non-compliance will result in a 5% reduction in management fee payment for all Grid Services
2. Fourth incidence of non-compliance will result in a 10% reduction in management fee payment for all Grid Services
3. Each successive incidence of non-compliance will result in an additional 5% reduction in management fee payment for all Grid Services
4. 22nd incidence of non-compliance will result in a 100% reduction in management fee payment for all Grid Services

The first and second incidences of non-compliance will not result in any reductions in management fees.

10. Unique Authorization

Access to and use of the GSDS is restricted to Supplier's authorized users only. Supplier shall be responsible to ensure all Supplier users maintain the security of any password, username, or other form of authentication involved in obtaining access to the Software. Usernames and passwords must be uniquely assigned to a specific individual and may not be shared by multiple individual at any one time or transferred.

11. Participant Company Account Numbers

Supplier may not use a Participant's Company Account number for tracking or display purposes. The GSDS may not reflect a Participant's Company Account number, but must use a unique identifier associated with the Participant account.

12. Datacenter and Security Requirements

Supplier agrees that the GSDS will use a SAS 70 Type II certified (or equivalent) datacenter in a manner consistent with the following requirements:

1. Supplier shall implement and maintain procedures to segregate Company's Participant data from Supplier's data and data belonging to Supplier's other customers.
2. Supplier shall establish and maintain appropriate environmental, safety and facility procedures, data security procedures and other safeguards against the destruction, corruption, loss or alteration of the GSDS and any Company or Participant data, and to prevent unauthorized access, alteration or interference by third parties of the same.
3. In order to prevent unauthorized use access to Company or Participant data or Company or Participant's Confidential information or Grid Services Capability or underlying infrastructure, Supplier shall implement measures to delete or otherwise disable user accounts for those employees, agents, representatives or affiliates of Supplier that have been terminated or voluntarily discontinued their relationship with Supplier. Such measures shall ensure that such user accounts are deleted or disabled within twenty four (24) hours of termination or voluntary discharge.

Exhibit J

Reporting

Monthly Invoice Report (MIR)

The MIR is submitted on a per island, per Grid Service and per Customer segment basis and consists of multiple *.CSV files containing the following information in a format prescribed by the Companies.

- Monthly Committed Forecast in 15 min intervals
- Monthly Settlement Capability for Settlement Month
- Event Performance Factors for each event in the Settlement Month
- Monthly Performance Factor (Average of performance factors in Settlement Month)
- Monthly Settlement Factor (Based on previous 6 months, see Exhibit K (Settlement))
- Number of Events per Settlement Month

Upon request from the Company, the Supplier may also be required to deliver the following data:

- All data (on an aggregated level) used for the calculation of performance factors for the Settlement Month; including,
 - Baseline calculations
 - Demand values preceding events (as applicable)
- End device data and associated baseline calculations from all participating Resources used for the calculation of any performance factors

Participant Incentive and Capability Report (PIC)

The PIC is submitted as a *.CSV file and reports the following information on a per Customer basis:

- Account Number
- Contract Number
- Meter Number
- Customer Segment (Residential, SMB, C&I)
- Customer Schedule (R,G,J,P,DS)
- Participant Island
- Enabled Capability [kW] (per grid service)
- Minimum Incentive [\$] (per grid service)
- Incentive Adder [\$] (per grid service)
- Energy Delivered (kWh) (for Capacity)
- End-use

Data Formats

Data-End Use

This is the format for End Use Data. All customers should be included in the same file.

Supplier ID	Assigned by the Company
Contract Account	From customer bill
Meter ID	From customer bill
Date	Date of read, MM/DD/YYYY
Time	Time of read, military time
Type	Type of end use: HEM, BMS, WH, AC, ESS, PV
Value	kW or kWh
Actual read	real

MIR-Forecast

This is the format for Monthly Invoice Report (MIR) - forecast. All grid services should be included in the same file.

Supplier ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Date	MM/DD/YYYY
Time	Military time
Value	kW or kWh
Forecast	CFC _h

MIR-Settlement Cap

This is the format for Monthly Invoice Report (MIR) – Settlement Cap. All grid services should be included in the same file.

Supplier ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Settlement Month and year	e.g. 4/2018
Monthly Settlement Capability	MSC _s

MIR-Event Performance Factor

This is the format for Monthly Invoice Report (MIR) – Event Performance Factor. All grid services should be included in the same file.

Supplier ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time
Performance Factor	PF _{s,e}

MIR- Settlement Factor

This is the format for Monthly Invoice Report (MIR) –Settlement Factor. All grid services should be included in the same file.

Supplier ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Settlement Month and year	e.g. 4/2018
Settlement Factor	SPF _s

MIR- Event Date and Time

This is the format for Monthly Invoice Report (MIR) – Event Date and Time. All grid services should be included in the same file.

Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time

PIC- Grid Service and Event

This is the format for the Participant Incentive and Capability Report (PIC), by grid service and by event. All grid services should be included in the same file.

Supplier ID	Assigned by the Company
Contract Account	From customer bill
Meter Number	From customer bill
Customer Segment	Res, SMB, C&I
Customer Schedule	R,G,J,P,DS
Participant Island	1 = Oahu, 2 = Hawaii, 3 = Maui, 4 = Lanai, 5 = Molokai
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Value	kW or kWh
Enabled Capability	E _s
Minimum Incentive	real

Incentive Adder	real
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time
Energy Delivered	real

Baseline Calculations

This is the format for baseline calculations of Customer baselines.

Supplier ID	Assigned by the Company
Contract Account	From customer bill
Meter Number	From customer bill
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Value	kW or kWh
Date	Date of read, MM/DD/YYYY
Time	Time of read, Military time
Energy Delivered	kWh

Exhibit K

Settlement

Definitions

Settlement Month – Month for which settlement is calculated

- MSC_S = Monthly Settlement Capability for Settlement Month [kW]
- CC_S = Contract Capability for the Settlement Month (kW), based on the Contract Capability for the quarter.
- P_D = Monthly Delivery Price Rate [\$/kW*Month]
- P_E = Enablement Price Rate [\$/kW]
- P_{AI} = Additional Incentive Price Rate [\$/kW*Month]
- P_{MI} = Monthly Minimum Incentive Price Rate [\$/kW*Month]
- P_J = Energy Incentive Price [\$/kWh]
- E_S = Enabled Capability for the Settlement Month
- SPF_S = Settlement Performance Factor for the Settlement Month
- E_I = Incremental Enablement for the Settlement Month
- $PF_{S,e}$ = Grid Service Event Performance Factor for event e in Settlement Month
- $PF_{S-1,e}$ = Grid Service Event Performance Factor for event e in 1 month prior to Settlement Month
- n_S = Number of Grid Service Events in Settlement Month.
- n_{S-1} = Number of Grid Service Events in one month previous to Settlement Month
- DC_W = Weighted Daily Capability
- GSV_h = Grid Service Value Ratio for hour h
- CFC_h = Committed Forecast for hour h , per Grid Services Exhibits (A-D)
- $DC_{W,d}$ = Weighted Daily Capability for day d
- MC_S = Weighted Average Monthly Capability for Settlement Month
- DIM_S = Amount of qualifying days in Settlement Month
- E_{INC} = Incrementally enabled capability for the Settlement Month
- $E_{INC,SUM}$ = The sum of all E_{INC}
- E_P = Participant Enabled Capability
- J_S = Energy delivered for the Settlement Month in Capacity or Replacement Reserve [kWh]

General Rules for Settlement

- Monthly Settlement Capability of Settlement Month (MSC_S) cannot exceed 110% of Contract Capability for Settlement Month (CC_S).
- The Companies are only responsible for customer Minimum Incentives up to 110% of Contracted Capability for Settlement Month (CC_S). Any incentives to be paid out to Participants beyond 110% of CC_S will be deducted from the Suppliers settlement.
- Payment for Enablement cannot exceed 100% of Contract Capability for Settlement Month (CC_S).
- The Contract Capability for the Settlement Month (CC_S) is the Contract Capability for the quarter containing the month. Contract Capability for the Settlement Month (CC_S) will be the same for three consecutive months.
- All settlement calculations have to be calculated on a per Grid Service (Capacity has to be separated in build period and reduction period), per Customer Class basis. Customer Classes are defined per table below:

Customer Class	Customer Rate Schedule
Residential	R
Small and Medium Business (SMB)	G
Commercial and Industrial (C&I)	J P DS

- Customer Incentives can be changed, if
 - Company changes the Minimum Incentive Price (P_{MI}) by Grid Service or Customer Class
(updated upon request by Company)
 - Supplier changes the Participant Enabled Capability (E_p) for a Customer
(updated by Feb 1 and July 1 each year)
 - Supplier changes the Additional Incentive Price (P_{AI})
(updated by Feb 1 and July 1 each year)

Invoicing

Invoices will be submitted monthly. Invoices must clearly state the required payments itemized per list below on a per Grid Service (capacity has to be separated in Build Period and Reduction Period) and per Customer Class basis.

- Management Payment
- Enablement Payment
- Additional Incentive Subtraction
- Minimum Incentive Subtraction (if applicable)

Supplier is responsible for performing all calculations required for proper invoicing as described in this Exhibit K (Settlement). Company reserves the right to audit Supplier's invoice, calculations and data. The invoice needs to be submitted with all supporting data as described in Exhibit J (Reporting).

Pricing Oahu

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month

Capacity – Build

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	3	3	3	\$/kW*Month

Capacity – Reduction

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month
Energy Incentive Price*	P_J				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing Maui

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month

Capacity – Build Period

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	3	3	3	\$/kW*Month

Capacity – Reduction Period

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month
Energy Incentive Price	P_J				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing Hawaii

This section covers pricing agreed upon by Supplier and Company.

Fast Frequency Response

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month

Capacity – Build Period

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	3	3	3	\$/kW*Month

Capacity – Reduction Period

		Residential	SMB	Commercial	Unit
Grid Service Monthly Management Price	P_D				\$/kW*Month
Enablement Price	P_E				\$/kW
Monthly Incentive Adder Price	P_{AI}				\$/kW*Month
Monthly Minimum Incentive	P_{MI}	5	5	5	\$/kW*Month
Energy Incentive Price	P_J				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Monthly Settlement with Supplier

Data for Settlement

Settlement will be calculated on a portfolio level based on data that has been derived as follows:

- Supplier has to collect whole house data at all its participating facilities
- Supplier has to aggregate the data to portfolio level
- Supplier has to establish baselines on a per facility basis
- Supplier has to establish baselines on a portfolio level

In absence of whole house metering at participant facilities, the data has to be derived as:

- Supplier has to collect data for each participating end device
- Supplier has to aggregate all end device data on a per facility bases
- Supplier has to aggregate all facility data to portfolio level data
- Supplier has to establish baselines on an end device basis
- Supplier has to establish baselines on a per facility basis
- Supplier has to establish baselines on a portfolio level

Settlement

The settlement between Supplier and Company will be calculated on a monthly basis.

Settlement has to be calculated on a per Grid Service (Capacity has to be separated in Build Period and Reduction Period, per Customer segment basis). Company will only be responsible for minimum incentives up to 110% of Supplier's Settlement Capability for the Settlement Month, any incentives that needs to be paid out beyond 110% of Supplier's Settlement Capability will be deducted from Supplier's settlement.

$$\text{If } E_S \leq 1.1 * MSC_S$$

$$\text{Payment} = \underbrace{\frac{SPF_S \times MSC_S \times P_D}{}}_{\text{"ManagementPayment"}} + \underbrace{\frac{E_I \times P_E}{}}_{\text{"EnablementPayment"}} - \underbrace{\frac{E_S \times P_{AI}}{}}_{\text{"AdditionalIncentiveSubtraction"}}$$

$$\text{If } E_S > 1.1 * MSC_S$$

$$\text{Payment} = \underbrace{\frac{SPF_S \times MSC_S \times P_D}{}}_{\text{"ManagementPayment"}} + \underbrace{\frac{E_I \times P_E}{}}_{\text{"EnablementPayment"}} - \underbrace{\frac{E_S \times P_{AI}}{}}_{\text{"AdditionalIncentiveSubtraction"}} - \underbrace{\frac{(E_S - 1.1 \times MSC_S) \times P_{MI}}{}}_{\text{"MinimumIncentiveSubtraction"}}$$

Delivery

Performance Factor

Event Performance Factor

The performance factor for each Grid Service Event is determined based on a per Grid Service per event basis in accordance with the Grid Services definitions:

- Exhibit A-1 (Fast Frequency Response Grid Service)
- Exhibit A-3 (Capacity Grid Service)

Settlement Performance Factor

The Settlement Performance Factor (SPF) is calculated based on the event performance factors from the previous six (6) months and is calculated based on the Event Performance Factors for events in the six (6) preceding months. Event performance factors will be assessed starting in month 4 of the contract. The Settlement Performance Factor will be 1.0 for the first 9 months of the contract, where after it will be calculated based on the equation below. Performance Factor of at 90% or higher to 100% will receive a factor of 1.

$$SPF_S = \frac{6 \sum_{e=1}^{n_s} PF_{S,e} + 5 \sum_{e=1}^{n_{s-1}} PF_{S-1,e} + 4 \sum_{e=1}^{n_{s-2}} PF_{S-2,e} + 3 \sum_{e=1}^{n_{s-3}} PF_{S-3,e} + 2 \sum_{e=1}^{n_{s-4}} PF_{S-4,e} + \sum_{e=1}^{n_{s-5}} PF_{S-5,e}}{6n_s + 5n_{s-1} + 4n_{s-2} + 3n_{s-3} + 2n_{s-4} + n_{s-5}}$$

- $PF_{S,e}$ = Performance Factor for event e in the Settlement Month.
- $PF_{S-1,e}$ = Performance Factor for event e in one month previous to Settlement Month.
- n_s = Number of events in Settlement Month.
- n_{s-1} = Number of events in one month previous to Settlement Month.

Monthly Settlement Capability

The Monthly Settlement Capability (MSC) is used for settlement and is calculated based on the Grid Service Value Ratio (GSV) of the Grid Service through the time of day and averaged over the month. The Forecast (LFC) value is multiplied by the GSV for the pertinent 15-minute block per the GSV Table. The values in the GSV table change depending on the time of the day, and from year to year.

Weighted Daily Capability (DC)

The Grid Service Value (GSV) is the weighing factor for the calculation of the Daily Weighted Capability and is available as part of this Exhibit K (Settlement) in the form of a spreadsheet on a Grid Service basis, with values for each quarter hour of the day, with values changing on an annual basis.

$$DC_W = \sum_{qh=0}^{96} GSV_{qh} * LFC_{qh}$$

Weighted Average Monthly Capability (MC)

$$MC_S = \sum_{d=1}^{DIM_S} \frac{DC_{W,d}}{DIM_S}$$

Monthly Settlement Capability (MSC)

$$\text{If } MC_S \leq 1.1 * CC_S$$

$$MSC_S = MC_S$$

$$\text{If } MC_S > 1.1 * CC_S$$

$$MSC_S = 1.1 * CC_S$$

Enablement

Incremental Enablement

The Incremental Enablement E_I is the incremental enablement added for the Settlement Month based on the amount of new Capability enabled by the Supplier. Company will not pay for Enablement beyond 100% of Contract Capability, hence:

$$\begin{aligned} & \text{If } E_{INC,SUM} \leq CC_S \\ E_I &= E_{INC} \\ & \text{If } E_{INC,SUM} > CC_S \text{ And } E_{INC,SUM} - E_{INC} \leq CC_S \\ E_I &= CC_S - E_{INC,SUM} - E_{INC} \\ & \text{If } E_{INC,SUM} - E_{INC} > CC_S \\ E_I &= 0 \end{aligned}$$

Monthly Settlement with Participants

Settlement

The settlement between Company and the Participants will be calculated on a monthly basis and will be paid via the customer bill. Settlement has to be calculated on a per Grid Service basis. The settlement calculations differ for the different Grid Services and for different Customer segments. Participant will receive their monthly settlement the month after their first month enrolled.

Absent complete DRMS deployment, Company may settle with Participants through a onetime payment as opposed to monthly settlement.

Residential and Small and Medium Business

Fast Frequency Response

$$\text{Payment} = E_P \times (P_{MI} + P_{AI})$$

Capacity Build

$$\text{Payment} = E_P \times (P_{MI} + P_{AI})$$

Capacity Reduction

$$\text{Payment} = E_P \times (P_{MI} + P_{AI})$$

Commercial and Industrial

Fast Frequency Response

$$\text{Payment} = E_P \times (P_{MI} + P_{AI})$$

Capacity Build

$$\text{Payment} = E_P \times (P_{MI} + P_{AI})$$

Capacity Reduction

$$\text{Payment} = E_P \times (P_{MI} + P_{AI}) + J_S \times P_J$$

Oahu - Fast Frequency Response						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0.005788	0.006136	0.003741	0.004139	0.005021	0.004656
0:15:00	0.005788	0.006136	0.003741	0.004139	0.005021	0.004656
0:30:00	0.005788	0.006136	0.003741	0.004139	0.005021	0.004656
0:45:00	0.005788	0.006136	0.003741	0.004139	0.005021	0.004656
1:00:00	0.005055	0.005346	0.003165	0.003881	0.004719	0.004515
1:15:00	0.005055	0.005346	0.003165	0.003881	0.004719	0.004515
1:30:00	0.005055	0.005346	0.003165	0.003881	0.004719	0.004515
1:45:00	0.005055	0.005346	0.003165	0.003881	0.004719	0.004515
2:00:00	0.004744	0.004898	0.003091	0.00363	0.004625	0.004269
2:15:00	0.004744	0.004898	0.003091	0.00363	0.004625	0.004269
2:30:00	0.004744	0.004898	0.003091	0.00363	0.004625	0.004269
2:45:00	0.004744	0.004898	0.003091	0.00363	0.004625	0.004269
3:00:00	0.004981	0.00519	0.003538	0.003972	0.004682	0.004331
3:15:00	0.004981	0.00519	0.003538	0.003972	0.004682	0.004331
3:30:00	0.004981	0.00519	0.003538	0.003972	0.004682	0.004331
3:45:00	0.004981	0.00519	0.003538	0.003972	0.004682	0.004331
4:00:00	0.006051	0.006147	0.004693	0.004561	0.004985	0.004382
4:15:00	0.006051	0.006147	0.004693	0.004561	0.004985	0.004382
4:30:00	0.006051	0.006147	0.004693	0.004561	0.004985	0.004382
4:45:00	0.006051	0.006147	0.004693	0.004561	0.004985	0.004382
5:00:00	0.007774	0.007978	0.007132	0.006306	0.005212	0.004758
5:15:00	0.007774	0.007978	0.007132	0.006306	0.005212	0.004758
5:30:00	0.007774	0.007978	0.007132	0.006306	0.005212	0.004758
5:45:00	0.007774	0.007978	0.007132	0.006306	0.005212	0.004758
6:00:00	0.008396	0.008107	0.007931	0.007008	0.005306	0.004816
6:15:00	0.008396	0.008107	0.007931	0.007008	0.005306	0.004816
6:30:00	0.008396	0.008107	0.007931	0.007008	0.005306	0.004816
6:45:00	0.008396	0.008107	0.007931	0.007008	0.005306	0.004816
7:00:00	0.00919	0.008907	0.00955	0.008887	0.006499	0.006177
7:15:00	0.00919	0.008907	0.00955	0.008887	0.006499	0.006177
7:30:00	0.00919	0.008907	0.00955	0.008887	0.006499	0.006177
7:45:00	0.00919	0.008907	0.00955	0.008887	0.006499	0.006177
8:00:00	0.00847	0.007891	0.008467	0.008734	0.009144	0.009659
8:15:00	0.00847	0.007891	0.008467	0.008734	0.009144	0.009659
8:30:00	0.00847	0.007891	0.008467	0.008734	0.009144	0.009659
8:45:00	0.00847	0.007891	0.008467	0.008734	0.009144	0.009659
9:00:00	0.007884	0.007267	0.007688	0.0102	0.014536	0.015052
9:15:00	0.007884	0.007267	0.007688	0.0102	0.014536	0.015052
9:30:00	0.007884	0.007267	0.007688	0.0102	0.014536	0.015052
9:45:00	0.007884	0.007267	0.007688	0.0102	0.014536	0.015052
10:00:00	0.006249	0.005005	0.00495	0.010806	0.018727	0.019805
10:15:00	0.006249	0.005005	0.00495	0.010806	0.018727	0.019805
10:30:00	0.006249	0.005005	0.00495	0.010806	0.018727	0.019805
10:45:00	0.006249	0.005005	0.00495	0.010806	0.018727	0.019805
11:00:00	0.005533	0.003524	0.003397	0.012362	0.021585	0.022666

11:15:00	0.005533	0.003524	0.003397	0.012362	0.021585	0.022666
11:30:00	0.005533	0.003524	0.003397	0.012362	0.021585	0.022666
11:45:00	0.005533	0.003524	0.003397	0.012362	0.021585	0.022666
12:00:00	0.005733	0.003428	0.00283	0.01247	0.021042	0.023171
12:15:00	0.005733	0.003428	0.00283	0.01247	0.021042	0.023171
12:30:00	0.005733	0.003428	0.00283	0.01247	0.021042	0.023171
12:45:00	0.005733	0.003428	0.00283	0.01247	0.021042	0.023171
13:00:00	0.006679	0.004353	0.003427	0.011397	0.019267	0.021752
13:15:00	0.006679	0.004353	0.003427	0.011397	0.019267	0.021752
13:30:00	0.006679	0.004353	0.003427	0.011397	0.019267	0.021752
13:45:00	0.006679	0.004353	0.003427	0.011397	0.019267	0.021752
14:00:00	0.008487	0.006987	0.00642	0.010934	0.015859	0.017314
14:15:00	0.008487	0.006987	0.00642	0.010934	0.015859	0.017314
14:30:00	0.008487	0.006987	0.00642	0.010934	0.015859	0.017314
14:45:00	0.008487	0.006987	0.00642	0.010934	0.015859	0.017314
15:00:00	0.012088	0.011088	0.012047	0.013617	0.012854	0.013175
15:15:00	0.012088	0.011088	0.012047	0.013617	0.012854	0.013175
15:30:00	0.012088	0.011088	0.012047	0.013617	0.012854	0.013175
15:45:00	0.012088	0.011088	0.012047	0.013617	0.012854	0.013175
16:00:00	0.017134	0.017432	0.020037	0.018086	0.012355	0.011676
16:15:00	0.017134	0.017432	0.020037	0.018086	0.012355	0.011676
16:30:00	0.017134	0.017432	0.020037	0.018086	0.012355	0.011676
16:45:00	0.017134	0.017432	0.020037	0.018086	0.012355	0.011676
17:00:00	0.021815	0.02314	0.026852	0.02133	0.012663	0.011767
17:15:00	0.021815	0.02314	0.026852	0.02133	0.012663	0.011767
17:30:00	0.021815	0.02314	0.026852	0.02133	0.012663	0.011767
17:45:00	0.021815	0.02314	0.026852	0.02133	0.012663	0.011767
18:00:00	0.02423	0.026019	0.02982	0.021081	0.0127	0.011615
18:15:00	0.02423	0.026019	0.02982	0.021081	0.0127	0.011615
18:30:00	0.02423	0.026019	0.02982	0.021081	0.0127	0.011615
18:45:00	0.02423	0.026019	0.02982	0.021081	0.0127	0.011615
19:00:00	0.022712	0.024728	0.027269	0.018073	0.010438	0.009407
19:15:00	0.022712	0.024728	0.027269	0.018073	0.010438	0.009407
19:30:00	0.022712	0.024728	0.027269	0.018073	0.010438	0.009407
19:45:00	0.022712	0.024728	0.027269	0.018073	0.010438	0.009407
20:00:00	0.019057	0.020779	0.02229	0.014786	0.008678	0.007861
20:15:00	0.019057	0.020779	0.02229	0.014786	0.008678	0.007861
20:30:00	0.019057	0.020779	0.02229	0.014786	0.008678	0.007861
20:45:00	0.019057	0.020779	0.02229	0.014786	0.008678	0.007861
21:00:00	0.014234	0.016101	0.01574	0.010847	0.007192	0.006516
21:15:00	0.014234	0.016101	0.01574	0.010847	0.007192	0.006516
21:30:00	0.014234	0.016101	0.01574	0.010847	0.007192	0.006516
21:45:00	0.014234	0.016101	0.01574	0.010847	0.007192	0.006516
22:00:00	0.010262	0.011416	0.010242	0.007642	0.006344	0.005618
22:15:00	0.010262	0.011416	0.010242	0.007642	0.006344	0.005618
22:30:00	0.010262	0.011416	0.010242	0.007642	0.006344	0.005618
22:45:00	0.010262	0.011416	0.010242	0.007642	0.006344	0.005618

23:00:00	0.007454	0.008137	0.005684	0.005252	0.005568	0.005038
23:15:00	0.007454	0.008137	0.005684	0.005252	0.005568	0.005038
23:30:00	0.007454	0.008137	0.005684	0.005252	0.005568	0.005038
23:45:00	0.007454	0.008137	0.005684	0.005252	0.005568	0.005038

11:15:00	0.061699	0.061699	0.061699	0.061699	0.061699	0.061699
11:30:00	0.061699	0.061699	0.061699	0.061699	0.061699	0.061699
11:45:00	0.061699	0.061699	0.061699	0.061699	0.061699	0.061699
12:00:00	0.061179	0.061179	0.061179	0.061179	0.061179	0.061179
12:15:00	0.061179	0.061179	0.061179	0.061179	0.061179	0.061179
12:30:00	0.061179	0.061179	0.061179	0.061179	0.061179	0.061179
12:45:00	0.061179	0.061179	0.061179	0.061179	0.061179	0.061179
13:00:00	0.062883	0.062883	0.062883	0.062883	0.062883	0.062883
13:15:00	0.062883	0.062883	0.062883	0.062883	0.062883	0.062883
13:30:00	0.062883	0.062883	0.062883	0.062883	0.062883	0.062883
13:45:00	0.062883	0.062883	0.062883	0.062883	0.062883	0.062883
14:00:00	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0
14:30:00	0	0	0	0	0	0
14:45:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0
19:00:00	0	0	0	0	0	0
19:15:00	0	0	0	0	0	0
19:30:00	0	0	0	0	0	0
19:45:00	0	0	0	0	0	0
20:00:00	0	0	0	0	0	0
20:15:00	0	0	0	0	0	0
20:30:00	0	0	0	0	0	0
20:45:00	0	0	0	0	0	0
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Oahu - Capacity (Load Reduction)						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0	0	0	0	0	0
0:15:00	0	0	0	0	0	0
0:30:00	0	0	0	0	0	0
0:45:00	0	0	0	0	0	0
1:00:00	0	0	0	0	0	0
1:15:00	0	0	0	0	0	0
1:30:00	0	0	0	0	0	0
1:45:00	0	0	0	0	0	0
2:00:00	0	0	0	0	0	0
2:15:00	0	0	0	0	0	0
2:30:00	0	0	0	0	0	0
2:45:00	0	0	0	0	0	0
3:00:00	0	0	0	0	0	0
3:15:00	0	0	0	0	0	0
3:30:00	0	0	0	0	0	0
3:45:00	0	0	0	0	0	0
4:00:00	0	0	0	0	0	0
4:15:00	0	0	0	0	0	0
4:30:00	0	0	0	0	0	0
4:45:00	0	0	0	0	0	0
5:00:00	0	0	0	0	0	0
5:15:00	0	0	0	0	0	0
5:30:00	0	0	0	0	0	0
5:45:00	0	0	0	0	0	0
6:00:00	0	0	0	0	0	0
6:15:00	0	0	0	0	0	0
6:30:00	0	0	0	0	0	0
6:45:00	0	0	0	0	0	0
7:00:00	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0
10:30:00	0	0	0	0	0	0
10:45:00	0	0	0	0	0	0
11:00:00	0	0	0	0	0	0

11:15:00	0	0	0	0	0	0
11:30:00	0	0	0	0	0	0
11:45:00	0	0	0	0	0	0
12:00:00	0	0	0	0	0	0
12:15:00	0	0	0	0	0	0
12:30:00	0	0	0	0	0	0
12:45:00	0	0	0	0	0	0
13:00:00	0	0	0	0	0	0
13:15:00	0	0	0	0	0	0
13:30:00	0	0	0	0	0	0
13:45:00	0	0	0	0	0	0
14:00:00	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0
14:30:00	0	0	0	0	0	0
14:45:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0
17:00:00	0.062292	0.062292	0.062292	0.062292	0.062292	0.062292
17:15:00	0.062292	0.062292	0.062292	0.062292	0.062292	0.062292
17:30:00	0.062292	0.062292	0.062292	0.062292	0.062292	0.062292
17:45:00	0.062292	0.062292	0.062292	0.062292	0.062292	0.062292
18:00:00	0.064152	0.064152	0.064152	0.064152	0.064152	0.064152
18:15:00	0.064152	0.064152	0.064152	0.064152	0.064152	0.064152
18:30:00	0.064152	0.064152	0.064152	0.064152	0.064152	0.064152
18:45:00	0.064152	0.064152	0.064152	0.064152	0.064152	0.064152
19:00:00	0.063026	0.063026	0.063026	0.063026	0.063026	0.063026
19:15:00	0.063026	0.063026	0.063026	0.063026	0.063026	0.063026
19:30:00	0.063026	0.063026	0.063026	0.063026	0.063026	0.063026
19:45:00	0.063026	0.063026	0.063026	0.063026	0.063026	0.063026
20:00:00	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053
20:15:00	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053
20:30:00	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053
20:45:00	0.06053	0.06053	0.06053	0.06053	0.06053	0.06053
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Maui - Fast Frequency Response						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:15:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:30:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:45:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
1:00:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:15:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:30:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:45:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
2:00:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:15:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:30:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:45:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
3:00:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:15:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:30:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:45:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
4:00:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:15:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:30:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:45:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
5:00:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:15:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:30:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:45:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
6:00:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:15:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:30:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:45:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
7:00:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:15:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:30:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:45:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
8:00:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:15:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:30:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:45:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
9:00:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:15:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:30:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:45:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
10:00:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:15:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:30:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:45:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
11:00:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114

11:15:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
11:30:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
11:45:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
12:00:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:15:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:30:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:45:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
13:00:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:15:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:30:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:45:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
14:00:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:15:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:30:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:45:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
15:00:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:15:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:30:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:45:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
16:00:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:15:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:30:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:45:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
17:00:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:15:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:30:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:45:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
18:00:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:15:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:30:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:45:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
19:00:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:15:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:30:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:45:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
20:00:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:15:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:30:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:45:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
21:00:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:15:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:30:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:45:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
22:00:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:15:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:30:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:45:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502

23:00:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:15:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:30:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:45:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862

11:15:00	0.060618	0.060618	0.060618	0.060618	0.060618	0.060618
11:30:00	0.060618	0.060618	0.060618	0.060618	0.060618	0.060618
11:45:00	0.060618	0.060618	0.060618	0.060618	0.060618	0.060618
12:00:00	0.061484	0.061484	0.061484	0.061484	0.061484	0.061484
12:15:00	0.061484	0.061484	0.061484	0.061484	0.061484	0.061484
12:30:00	0.061484	0.061484	0.061484	0.061484	0.061484	0.061484
12:45:00	0.061484	0.061484	0.061484	0.061484	0.061484	0.061484
13:00:00	0.06471	0.06471	0.06471	0.06471	0.06471	0.06471
13:15:00	0.06471	0.06471	0.06471	0.06471	0.06471	0.06471
13:30:00	0.06471	0.06471	0.06471	0.06471	0.06471	0.06471
13:45:00	0.06471	0.06471	0.06471	0.06471	0.06471	0.06471
14:00:00	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0
14:30:00	0	0	0	0	0	0
14:45:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0
17:00:00	0	0	0	0	0	0
17:15:00	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0
19:00:00	0	0	0	0	0	0
19:15:00	0	0	0	0	0	0
19:30:00	0	0	0	0	0	0
19:45:00	0	0	0	0	0	0
20:00:00	0	0	0	0	0	0
20:15:00	0	0	0	0	0	0
20:30:00	0	0	0	0	0	0
20:45:00	0	0	0	0	0	0
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Maui - Capacity (Load Reduction)						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0	0	0	0	0	0
0:15:00	0	0	0	0	0	0
0:30:00	0	0	0	0	0	0
0:45:00	0	0	0	0	0	0
1:00:00	0	0	0	0	0	0
1:15:00	0	0	0	0	0	0
1:30:00	0	0	0	0	0	0
1:45:00	0	0	0	0	0	0
2:00:00	0	0	0	0	0	0
2:15:00	0	0	0	0	0	0
2:30:00	0	0	0	0	0	0
2:45:00	0	0	0	0	0	0
3:00:00	0	0	0	0	0	0
3:15:00	0	0	0	0	0	0
3:30:00	0	0	0	0	0	0
3:45:00	0	0	0	0	0	0
4:00:00	0	0	0	0	0	0
4:15:00	0	0	0	0	0	0
4:30:00	0	0	0	0	0	0
4:45:00	0	0	0	0	0	0
5:00:00	0	0	0	0	0	0
5:15:00	0	0	0	0	0	0
5:30:00	0	0	0	0	0	0
5:45:00	0	0	0	0	0	0
6:00:00	0	0	0	0	0	0
6:15:00	0	0	0	0	0	0
6:30:00	0	0	0	0	0	0
6:45:00	0	0	0	0	0	0
7:00:00	0	0	0	0	0	0
7:15:00	0	0	0	0	0	0
7:30:00	0	0	0	0	0	0
7:45:00	0	0	0	0	0	0
8:00:00	0	0	0	0	0	0
8:15:00	0	0	0	0	0	0
8:30:00	0	0	0	0	0	0
8:45:00	0	0	0	0	0	0
9:00:00	0	0	0	0	0	0
9:15:00	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0
10:30:00	0	0	0	0	0	0
10:45:00	0	0	0	0	0	0
11:00:00	0	0	0	0	0	0

11:15:00	0	0	0	0	0	0
11:30:00	0	0	0	0	0	0
11:45:00	0	0	0	0	0	0
12:00:00	0	0	0	0	0	0
12:15:00	0	0	0	0	0	0
12:30:00	0	0	0	0	0	0
12:45:00	0	0	0	0	0	0
13:00:00	0	0	0	0	0	0
13:15:00	0	0	0	0	0	0
13:30:00	0	0	0	0	0	0
13:45:00	0	0	0	0	0	0
14:00:00	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0
14:30:00	0	0	0	0	0	0
14:45:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0
16:00:00	0	0	0	0	0	0
16:15:00	0	0	0	0	0	0
16:30:00	0	0	0	0	0	0
16:45:00	0	0	0	0	0	0
17:00:00	0.062345	0.062345	0.062345	0.062345	0.062345	0.062345
17:15:00	0.062345	0.062345	0.062345	0.062345	0.062345	0.062345
17:30:00	0.062345	0.062345	0.062345	0.062345	0.062345	0.062345
17:45:00	0.062345	0.062345	0.062345	0.062345	0.062345	0.062345
18:00:00	0.062922	0.062922	0.062922	0.062922	0.062922	0.062922
18:15:00	0.062922	0.062922	0.062922	0.062922	0.062922	0.062922
18:30:00	0.062922	0.062922	0.062922	0.062922	0.062922	0.062922
18:45:00	0.062922	0.062922	0.062922	0.062922	0.062922	0.062922
19:00:00	0.062793	0.062793	0.062793	0.062793	0.062793	0.062793
19:15:00	0.062793	0.062793	0.062793	0.062793	0.062793	0.062793
19:30:00	0.062793	0.062793	0.062793	0.062793	0.062793	0.062793
19:45:00	0.062793	0.062793	0.062793	0.062793	0.062793	0.062793
20:00:00	0.06194	0.06194	0.06194	0.06194	0.06194	0.06194
20:15:00	0.06194	0.06194	0.06194	0.06194	0.06194	0.06194
20:30:00	0.06194	0.06194	0.06194	0.06194	0.06194	0.06194
20:45:00	0.06194	0.06194	0.06194	0.06194	0.06194	0.06194
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Hawaii - Fast Frequency Response						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:15:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:30:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
0:45:00	0.008466	0.008161	0.007868	0.008827	0.00898	0.009235
1:00:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:15:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:30:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
1:45:00	0.007356	0.007551	0.007168	0.008595	0.009051	0.009125
2:00:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:15:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:30:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
2:45:00	0.00647	0.006987	0.006669	0.008257	0.009124	0.009197
3:00:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:15:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:30:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
3:45:00	0.006272	0.006604	0.00653	0.008285	0.008666	0.008638
4:00:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:15:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:30:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
4:45:00	0.006835	0.006776	0.006803	0.008391	0.008147	0.008072
5:00:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:15:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:30:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
5:45:00	0.008075	0.007994	0.007769	0.009101	0.007647	0.007749
6:00:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:15:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:30:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
6:45:00	0.009815	0.010102	0.009623	0.010884	0.00851	0.008835
7:00:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:15:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:30:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
7:45:00	0.011197	0.011466	0.010952	0.012779	0.01038	0.010945
8:00:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:15:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:30:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
8:45:00	0.01147	0.011298	0.011274	0.01349	0.012321	0.012514
9:00:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:15:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:30:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
9:45:00	0.010747	0.010149	0.010023	0.012267	0.012741	0.012663
10:00:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:15:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:30:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
10:45:00	0.010013	0.009165	0.00878	0.010643	0.012406	0.011655
11:00:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114

11:15:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
11:30:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
11:45:00	0.009702	0.008648	0.007799	0.009665	0.011691	0.011114
12:00:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:15:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:30:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
12:45:00	0.00991	0.008362	0.007648	0.009602	0.011484	0.01105
13:00:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:15:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:30:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
13:45:00	0.010362	0.008708	0.008337	0.009962	0.01146	0.011455
14:00:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:15:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:30:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
14:45:00	0.01124	0.009271	0.009545	0.01185	0.012113	0.012588
15:00:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:15:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:30:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
15:45:00	0.012488	0.011402	0.011945	0.014512	0.013156	0.013229
16:00:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:15:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:30:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
16:45:00	0.013353	0.014593	0.015129	0.015201	0.013085	0.012975
17:00:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:15:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:30:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
17:45:00	0.013748	0.016272	0.016735	0.013167	0.011586	0.010694
18:00:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:15:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:30:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
18:45:00	0.013531	0.015686	0.016168	0.010139	0.009585	0.009253
19:00:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:15:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:30:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
19:45:00	0.013313	0.013958	0.014618	0.008832	0.00866	0.008604
20:00:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:15:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:30:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
20:45:00	0.012864	0.013342	0.014053	0.008764	0.009155	0.009616
21:00:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:15:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:30:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
21:45:00	0.012104	0.012866	0.013528	0.008816	0.010212	0.010429
22:00:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:15:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:30:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502
22:45:00	0.010904	0.011115	0.011547	0.008931	0.010145	0.010502

23:00:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:15:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:30:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862
23:45:00	0.009764	0.009521	0.009491	0.009039	0.009697	0.009862

11:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
11:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
11:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
12:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
12:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
12:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
12:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
13:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
13:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
13:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
13:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
14:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
14:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
14:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
14:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
15:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
15:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
15:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
15:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
16:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
16:15:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
16:30:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
16:45:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
17:00:00	0.018519	0.018519	0.018519	0.018519	0.018519	0.018519
17:15:00	0	0	0	0	0	0
17:30:00	0	0	0	0	0	0
17:45:00	0	0	0	0	0	0
18:00:00	0	0	0	0	0	0
18:15:00	0	0	0	0	0	0
18:30:00	0	0	0	0	0	0
18:45:00	0	0	0	0	0	0
19:00:00	0	0	0	0	0	0
19:15:00	0	0	0	0	0	0
19:30:00	0	0	0	0	0	0
19:45:00	0	0	0	0	0	0
20:00:00	0	0	0	0	0	0
20:15:00	0	0	0	0	0	0
20:30:00	0	0	0	0	0	0
20:45:00	0	0	0	0	0	0
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Hawaii - Capacity (Load Reduction)						
hour/year	2019	2020	2021	2022	2023	2024
0:00:00	0	0	0	0	0	0
0:15:00	0	0	0	0	0	0
0:30:00	0	0	0	0	0	0
0:45:00	0	0	0	0	0	0
1:00:00	0	0	0	0	0	0
1:15:00	0	0	0	0	0	0
1:30:00	0	0	0	0	0	0
1:45:00	0	0	0	0	0	0
2:00:00	0	0	0	0	0	0
2:15:00	0	0	0	0	0	0
2:30:00	0	0	0	0	0	0
2:45:00	0	0	0	0	0	0
3:00:00	0	0	0	0	0	0
3:15:00	0	0	0	0	0	0
3:30:00	0	0	0	0	0	0
3:45:00	0	0	0	0	0	0
4:00:00	0	0	0	0	0	0
4:15:00	0	0	0	0	0	0
4:30:00	0	0	0	0	0	0
4:45:00	0	0	0	0	0	0
5:00:00	0	0	0	0	0	0
5:15:00	0	0	0	0	0	0
5:30:00	0	0	0	0	0	0
5:45:00	0	0	0	0	0	0
6:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
6:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
6:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
6:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
7:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
7:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
7:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
7:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
8:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
8:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
8:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
8:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
9:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
9:15:00	0	0	0	0	0	0
9:30:00	0	0	0	0	0	0
9:45:00	0	0	0	0	0	0
10:00:00	0	0	0	0	0	0
10:15:00	0	0	0	0	0	0
10:30:00	0	0	0	0	0	0
10:45:00	0	0	0	0	0	0
11:00:00	0	0	0	0	0	0

11:15:00	0	0	0	0	0	0
11:30:00	0	0	0	0	0	0
11:45:00	0	0	0	0	0	0
12:00:00	0	0	0	0	0	0
12:15:00	0	0	0	0	0	0
12:30:00	0	0	0	0	0	0
12:45:00	0	0	0	0	0	0
13:00:00	0	0	0	0	0	0
13:15:00	0	0	0	0	0	0
13:30:00	0	0	0	0	0	0
13:45:00	0	0	0	0	0	0
14:00:00	0	0	0	0	0	0
14:15:00	0	0	0	0	0	0
14:30:00	0	0	0	0	0	0
14:45:00	0	0	0	0	0	0
15:00:00	0	0	0	0	0	0
15:15:00	0	0	0	0	0	0
15:30:00	0	0	0	0	0	0
15:45:00	0	0	0	0	0	0
16:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
16:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
16:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
16:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
17:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
17:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
17:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
17:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
18:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
18:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
18:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
18:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
19:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
19:15:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
19:30:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
19:45:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
20:00:00	0.033333	0.033333	0.033333	0.033333	0.033333	0.033333
20:15:00	0	0	0	0	0	0
20:30:00	0	0	0	0	0	0
20:45:00	0	0	0	0	0	0
21:00:00	0	0	0	0	0	0
21:15:00	0	0	0	0	0	0
21:30:00	0	0	0	0	0	0
21:45:00	0	0	0	0	0	0
22:00:00	0	0	0	0	0	0
22:15:00	0	0	0	0	0	0
22:30:00	0	0	0	0	0	0
22:45:00	0	0	0	0	0	0

23:00:00	0	0	0	0	0	0
23:15:00	0	0	0	0	0	0
23:30:00	0	0	0	0	0	0
23:45:00	0	0	0	0	0	0

Exhibit M

Customer Service Requirements

Supplier must provide customer service related to Customer and/or Company initiated trouble calls, repairs and other field services related to installed devices. Company may transfer customer calls and/or requests to Supplier, and Supplier must respond accordingly.

Call Center Requirements	<ul style="list-style-type: none"> • Service Level: >78% of calls answered within 30 seconds • Average Speed of Answer: <60 seconds • Force Busy: <1% of total inbound calls • First call resolution: >70% of calls are resolved on the first call
VEN/ Customer Gateway Installation	Supplier will provide all labor, materials, transportation and other services necessary to install and provision customer premise devices (e.g. VEN's). Provisioning will include verification of VTN-to-VEN communication and successful operation of the VEN during a test.
Field Device Support	Supplier will maintain an in-state, dispatchable, on-site support capability to manage maintenance and repair issues related to customer premise devices.
Scheduling customer site visit	Supplier will manage scheduling/rescheduling customer visits.
Service Requests by Company or Customer	Supplier will respond via phone or email to field service requests initiated by a customer or by Company within 24 hours of request.
Supervision	Supplier will provide sufficient supervision of its installer to ensure quality installation performance.
Field Service Personnel	Supplier will provide training, safety and background check, and drug screen requirements for field service personnel. Installers will, at a minimum, be a journeyman electrician working under the supervision of a licensed electrical contractor. (Installers licensed in Hawai'i are preferred.)

Testing equipment	Supplier will provide its own tools and equipment for pre- and post-installation testing. Equipment must meet relevant certifications.
Installation completion	Supplier will manage the workforce and installation process for all allocated VENs until installation is complete.
Emergency repairs	Supplier will handle any emergency repairs encountered during the installation process as soon as practicable and in any event within 24 hours of repairs being required.
Quality control	Supplier shall have log records of all customer transactions during the term of the contract.
Installer work flow supporting data	Supplier will provide each installer with only the customer data associated with a single day's work for that installer, and to ensure that customer data is not retained by the installer after the end of that work day.
Insurance Requirements	Supplier will be subject to insurance requirements, including automobile liability, general liability, and worker's compensation.

Exhibit N

Participant Service Agreement Requirements

The Participant Service Agreement (“PSA”) between a Supplier and a Participant setting forth the terms and conditions by which a Participant may enroll with a Supplier to participate in the provision of Grid Services to the Company shall, at a minimum, include the following:

1. Term: (a) The term of the PSA, including the start and end dates of the Participant’s enrollment with the Supplier; and (b) the term of the Grid Services Purchase Agreement between the Supplier and the Company.
2. Payment: All estimated payment amounts, including all incentives, due from the Company or Supplier to the Participant during the term, together with the type and frequency of such payments. Supplier must indicate that the incentives will be paid by the Company as credit on the Participant’s electricity bill. Supplier must also indicate the Company will report incentive payments as Participant income to the U.S. Internal Revenue Service. The Supplier shall promptly notify the Participant of any change to such payments.
3. Charges: All recurring and nonrecurring charges due from the Participant to the Supplier during the term, including the types, frequency and amounts of such charges.
4. Grid Services Event Notification: The frequency, duration, and criteria under which the Participant’s Resource(s) may be engaged in response to a Grid Services Event.
5. Equipment: The equipment that the Supplier will site at the Participant’s service location in order to engage the Participant’s Resource(s), together with the ownership status of all such equipment.
6. Appointment of Supplier as Participant’s Agent: The legal appointment by the Participant of the Supplier as the agent of the Participant for the purpose of delivering the Grid Services from the Participant’s Resource(s) to the Company pursuant to the terms of the Grid Services Purchase Agreement between the Supplier and the Company.
7. Access by Company: The Company may access the equipment for any purpose in furtherance of the Company’s rights under the Grid Services Purchase Agreement.
8. Service Address: The physical residence or business address serviced by the Company where the Participant’s Resource(s) is/are located and the Participant is a primary account holder of record.
9. Participant E-mail Address: If available, Supplier shall collect and pass on to the Company the Participant’s e-mail address for the sole purpose to allow the Company to request an Internal Revenue Service W-9 form from Participant.
10. Data: The types of Participant data that will be accessed by the Supplier, how it may use the data, and with whom the Supplier may share the data, together with all information security and privacy policies enacted by the Supplier that apply to such data.
11. Consent and Release: A separate consent and release, to be duly executed by the Participant, granting the Company the right, without restriction, to use all Participant data produced as a result of the Participant’s enrollment with the Supplier for all legal purposes.
12. Penalties for Non-performance: Any penalties for non-performance, under performance, or over performance and a description of how penalties will be calculated.

13. Cancellation: A grace period during which the Participant may cancel its enrollment without any penalties. The grace period must terminate prior to the Supplier notifying the Company of the Participant's enrollment.
14. Early Termination by Participant: The process by which the Participant may terminate its enrollment with the Supplier prior to the end of the term, and any penalties that may apply against the Participant for such early termination.
15. Events of Termination: Any specific event by a party that may result in a termination of the PSA by the other party.
16. Warranties: All warranties that the Supplier will provide to the Participant, as well as all warranties that the Supplier explicitly disclaims and will not provide to the Participant.
17. Force Majeure: The conditions under which a party's performance may be excused due to the existence of a force majeure.
18. Dispute Resolution: The Participant's options should a dispute arise between the Supplier and the Participant.
19. Insurance: The types and levels of insurance that each party must have in place throughout the term.
20. Indemnity: The Supplier will indemnify the Participant against all claims flowing from a breach of the Supplier's representations under the PSA.
21. Damages: Any limitations on the Supplier's liability for damages that may arise under the PSA.
22. Authority to Sign: The Participant's affirmative representation that it possesses the full right and authority to execute the PSA on behalf of the Participant and that it is the rightful account holder of the underlying electricity account with the Company.

Notices: The Supplier's contact information for all purposes related to the PSA and the Participant's enrollment with the Supplier.

Exhibit O

Form of Trademark License Agreement

THIS TRADEMARK LICENSE AGREEMENT (“Agreement”) is made and entered into as of _____, by and between _____. (“Licensee”), a _____ corporation and Hawaiian Electric Company, Inc. (“Company”), a Hawai‘i corporation.

WHEREAS, Licensee provides certain grid services to Company pursuant to the Grid Services Purchase Agreement between Company and Licensee dated [_____];

WHEREAS, Company is an operating electric public utility, and owns and/or controls certain trademarks and other intellectual property related thereto;

WHEREAS, Licensee wishes to use certain trademarks and other intellectual property of Company as identified herein for the purpose of marketing and administering certain grid services for use by Company.

NOW, THEREFORE, in consideration of the mutual covenants and agreements set forth herein, the parties hereby agree as follows:

1. Grant. Company hereby grants, and Licensee hereby accepts, a limited, non-exclusive, non-transferable, non-sublicensable, royalty-free, revocable license to use the Company owned names, trademarks and logos set forth on Attachment A (the “Company Trademarks”) solely in direct connection with the production and distribution of marketing material, customer enrollment forms, and customer engagement portals related to the grid services provided by Licensee to Company.

2. Restriction of Use/Ownership. Licensee agrees that (a) it shall use the Company Trademarks solely in direct connection with the production and distribution of marketing material, customer enrollment forms, and customer engagement portals related to the grid services provided by Licensee to Company and in accordance with all of the terms and conditions set forth herein, (b) the Company Trademarks shall be exhibited and displayed in the exact form provided by Company and attached as Attachment A to this Agreement, (c) its use of the Company Trademarks shall include all standard proprietary notices prescribed by Company, and (d) its use of the Company Trademarks shall conform to quality standards which are consistent with the level of past practices for the use of the Company Trademarks. All right, title and interest in and to the Company Trademarks, including all associated goodwill, or in any copyright or other proprietary right now existing or hereinafter created pursuant to this Agreement, shall remain vested in Company subject only to the rights of use granted in this Agreement. Licensee shall provide Company with preview copies of all materials displaying the Company Trademarks for Company’s written approval prior to Licensee use, display or publication of such materials.

3. Governing Law. This Agreement and all questions arising hereunder shall be governed by, and construed in accordance with, the laws and decisions of the State of Hawai‘i without giving effect to the principles thereof relating to conflicts of law. Each of the parties

hereto (a) irrevocably agrees that the federal courts of the District of Hawai‘i and the Hawai‘i State courts shall have sole and exclusive jurisdiction over any suit or other proceeding arising out of or based upon this Agreement, (b) submits to the venue and jurisdiction of such courts and (c) irrevocably consents to personal jurisdiction by such courts.

4. Assignment. Licensee may not assign this Agreement, in whole or in part, without the prior written consent of Company. Any assignment in contravention of this Article 4 shall be deemed null and void.

5. Tern and Termination. This Agreement shall commence on the date hereof and shall remain in effect for the Initial Term of the Grid Services Purchase Agreement between Licensee and Company, unless earlier terminated pursuant to this Article 5. Company shall have the right to terminate this Agreement at any time, with or without cause, immediately upon notice to Licensee. Upon termination of this Agreement, Licensee shall immediately cease using or displaying the Company Trademarks.

6. Publicity. Except as otherwise expressly set forth in this Agreement, neither party shall use any name, trademark or logo of the other party or its affiliates, or otherwise refer to, the other party or any of its affiliates, in any press releases, publicity, marketing or promotional materials, unless specifically authorized in advance and in writing by such party, in its sole and absolute discretion.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of the day and year first written above.

HAWAIIAN ELECTRIC COMPANY, INC.

SUPPLIER NAME

By: _____

By: _____

Name: Shelee M. T. Kimura

Name:

Title: Senior Vice President,
Customer Service

Title:

ATTACHMENT A
COMPANY TRADEMARKS

Attached is the initial list of Company owned names, trademarks and logos that comprise the “Company Trademarks” licensed to Licensee pursuant to the Agreement. Company will provide to Licensee digital files of the Company Trademarks as applicable. Company, in its sole discretion, may update this Attachment A at any time, upon notice to Licensee, by removing or adding additional Company owned names, trademarks and logos to the list of “Company Trademarks” for the purposes of this Agreement.

1. Hawaiian Electric Company, Inc.: See attached logos and trademark guidelines.
2. Maui Electric Company, Limited: See attached logos and trademark guidelines.
3. Hawai‘i Electric Light Company, Inc.: See attached logos and trademark guidelines.

HAWAIIAN ELECTRIC

LOGO USAGE: QUICK REFERENCE

Approved logo configurations and file formats

The Hawaiian Electric logo is approved to run in the following configurations and colors. The first preference for use should always be the two-color logos, in either the horizontal or stacked configurations. Other versions, including one-color and “reverse,” are also available. All versions are available in eps, gif and jpg formats.

1) Horizontal configuration

PMS refers to the PANTONE Color Matching System (please refer to a PANTONE Color Formula Guide for accurate color).

two-color: Royal Purple PMS 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



Hawaiian Electric



one-color: Black



Hawaiian Electric



2) Stacked configuration

two-color: Royal Purple PMS 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



Hawaiian Electric



one-color: Black



Hawaiian Electric



Unacceptable logo usage

The logos have been carefully designed and composed and may not be altered. Specifically:

- Do not alter the logos in any manner (do not change color, font type - Helvetica Neue Bold Extended)
- Do not alter the proportions and/or relationship between the icon and the company name
- Do not use the individual components of the logo alone, without the consent of Corporate Communications
- Do not apply the logo over colors that obscure readability (such as over a busy background or photograph)

Questions?

If you have questions about the use of the logo, contact:

Barbara Heckathorn, Director of Corporate Communications at 543-4470

HAWAIIAN ELECTRIC LOGO USAGE: QUICK REFERENCE

The logos have been carefully designed and composed and must not be altered. The examples shown here are considered unauthorized and unacceptable modifications to the logos.

Examples of unacceptable logo usage



- Do not alter the proportions or relationships of any logo component



- Do not alter the positions or skew the alignment of any logo component



- Do not omit any logo component



- Do not alter or re-typeset the company name(s)



- Do not center the icon over the company name(s)



- Do not change the color of any portion of the logos, or reproduce the logos in any color that is not part of the company color palette



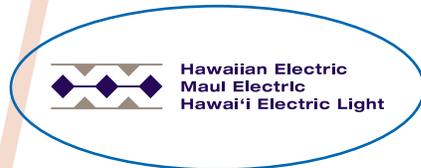
- Do not screen back the logo



- Do not apply the logos over busy or visually competitive backgrounds or photographs



- Do not apply the logos over colors that obscure readability



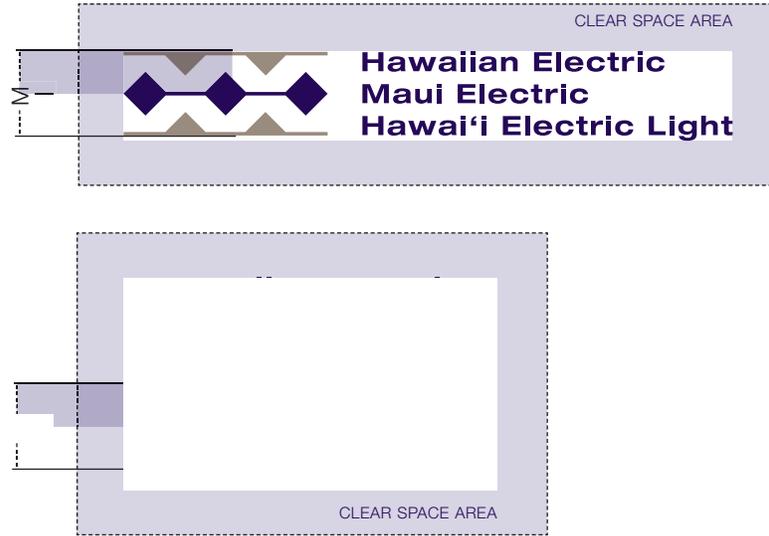
- Do not confine the logos in any shape other than the logo versions provided



- Do not use the logos in running copy or headlines

HAWAIIAN ELECTRIC LOGO USAGE: QUICK REFERENCE

Clear space



M = Minimum Space

The logo must not appear to be crowded among other elements. A minimum amount of clear space must always surround the logo as illustrated by the blue shaded area. As a general rule, use half the height of the icon to determine your clear space area.

Outermost logo area:

- Top edge of icon or company name
- Far right separator rule or last “t” in “Light”
- Bottom edge of descending letters in “Hawai’i Electric Light” in the horizontal logo, and the bottom edge of icon in the stacked logo

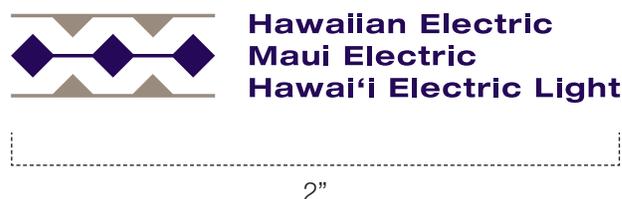
AND

- Far left edge of the icon in the horizontal logo, and the far left edge of the letter “H” in “Hawai’i Electric Light”

The same requirements apply for the Hawaiian Electric, Maui Electric and Hawai’i Electric Light logos.

Minimum usage

Minimum usage width: 2”



HAWAI'I ELECTRIC LIGHT LOGO USAGE: QUICK REFERENCE

Approved logo configurations and file formats

The Hawai'i Electric Light logo is approved to run in the following configurations and colors. The first preference for use should always be the two-color logos, in either the horizontal or stacked configurations. Other versions, including one-color and "reverse," are also available. All versions are available in eps, gif and jpg formats.

PMS refers to the PANTONE Color Matching System (please refer to a PANTONE Color Formula Guide for accurate color).

1) Horizontal configuration

two-color: Royal Purple **PMS** 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



one-color: Black



2) Stacked configuration

two-color: Royal Purple PMS 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



one-color: Black



Unacceptable logo usage

The logos have been carefully designed and composed and may not be altered. Specifically:

- Do not alter the logos in any manner (do not change color, font type - Helvetica Neue Bold Extended)
- Do not alter the proportions and/or relationship between the icon and the company name
- Do not use the individual components of the logo alone, without the consent of Marketing
- Do not apply the logo over colors that obscure readability (such as over a busy background or photograph)

Questions?

If you have questions about the use of the logo, contact:
Pam Chun, Customer Communication Consultant at 543-4613

HAWAI'I ELECTRIC LIGHT LOGO USAGE: QUICK REFERENCE

The logos have been carefully designed and composed and must not be altered.
 The examples shown here are considered unauthorized and unacceptable modifications to the logos.

Examples of unacceptable logo usage



◀ Do not alter the proportions or relationships of any logo component



◀ Do not alter the positions or skew the alignment of any logo component



◀ Do not omit any logo component



◀ Do not alter or re-typeset the company name(s)



◀ Do not center the icon over the company name(s)



◀ Do not change the color of any portion of the logos, or reproduce the logos in any color that is not part of the company color palette



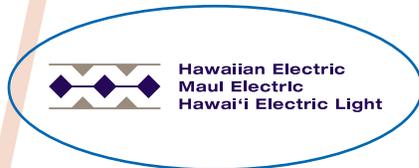
◀ Do not screen back the logo



◀ Do not apply the logos over busy or visually competitive backgrounds or photographs



◀ Do not apply the logos over colors that obscure readability



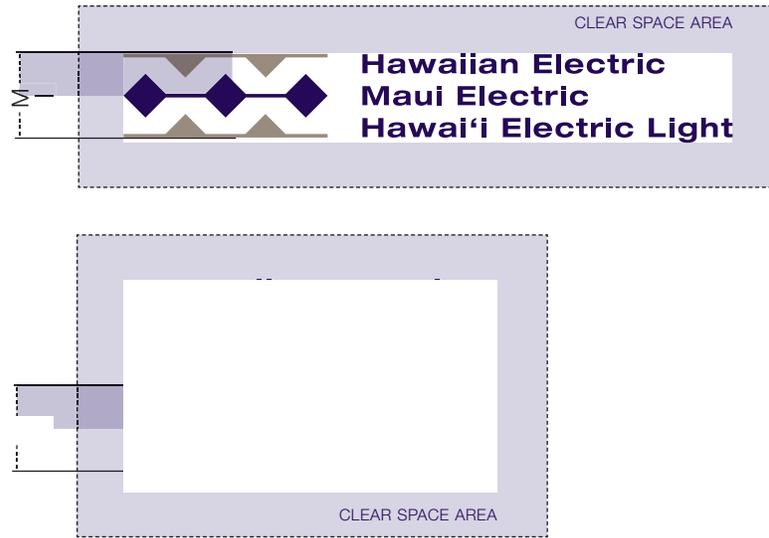
◀ Do not confine the logos in any shape other than the logo versions provided



◀ Do not use the logos in running copy or headlines

HAWAI'I ELECTRIC LIGHT LOGO USAGE: QUICK REFERENCE

Clear space



The logo must not appear to be crowded among other elements. A minimum amount of clear space must always surround the logo as illustrated by the blue shaded area. As a general rule, use half the height of the icon to determine your clear space area.

Outermost logo area:

- Top edge of icon or company name
- Far right separator rule or last “t” in “Light”
- Bottom edge of descending letters in “Hawai’i Electric Light” in the horizontal logo, and the bottom edge of icon in the stacked logo

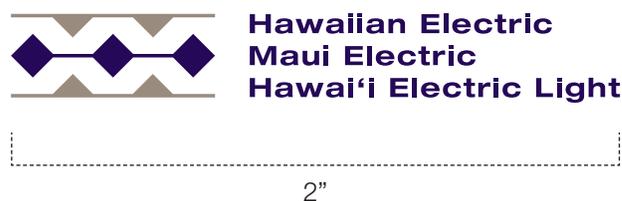
AND

- Far left edge of the icon in the horizontal logo, and the far left edge of the letter “H” in “Hawai’i Electric Light”

The same requirements apply for the Hawaiian Electric, Maui Electric and Hawai’i Electric Light logos.

Minimum usage

Minimum usage width: 2”



MAUI ELECTRIC

LOGO USAGE: QUICK REFERENCE

Approved logo configurations and file formats

The Maui Electric logo is approved to run in the following configurations and colors. The first preference for use should always be the two-color logos, in either the horizontal or stacked configurations. Other versions, including one-color and “reverse,” are also available. All versions are available in eps, gif and jpg formats.

1) Horizontal configuration

PMS refers to the PANTONE Color Matching System (please refer to a PANTONE Color Formula Guide for accurate color).

two-color: Royal Purple PMS 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



one-color: Black



2) Stacked configuration

two-color: Royal Purple PMS 2685C and Warm Gray 9



one-color: Royal Purple PMS 2685C



one-color: Black



Unacceptable logo usage

The logos have been carefully designed and composed and may not be altered. Specifically:

- Do not alter the logos in any manner (do not change color, font type - Helvetica Neue Bold Extended)
- Do not alter the proportions and/or relationship between the icon and the company name
- Do not use the individual components of the logo alone, without the consent of Corporate Communications
- Do not apply the logo over colors that obscure readability (such as over a busy background or photograph)

Questions?

If you have questions about the use of the logo, contact:

Barbara Heckathorn, Director of Corporate Communications at 543-4470

MAUI ELECTRIC

LOGO USAGE: QUICK REFERENCE

The logos have been carefully designed and composed and must not be altered.
 The examples shown here are considered unauthorized and unacceptable modifications to the logos.

Examples of unacceptable logo usage



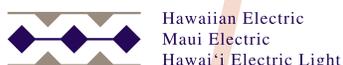
◀ Do not alter the proportions or relationships of any logo component



◀ Do not alter the positions or skew the alignment of any logo component



◀ Do not omit any logo component



◀ Do not alter or re-typeset the company name(s)



◀ Do not center the icon over the company name(s)



◀ Do not change the color of any portion of the logos, or reproduce the logos in any color that is not part of the company color palette



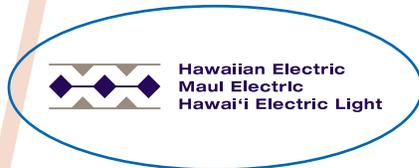
◀ Do not screen back the logo



◀ Do not apply the logos over busy or visually competitive backgrounds or photographs



◀ Do not apply the logos over colors that obscure readability



◀ Do not confine the logos in any shape other than the logo versions provided

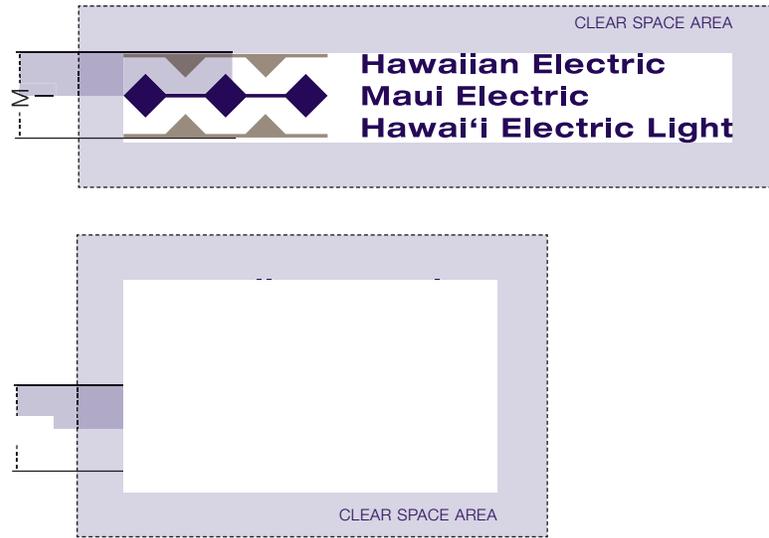


◀ Do not use the logos in running copy or headlines

MAUI ELECTRIC

LOGO USAGE: QUICK REFERENCE

Clear space



The logo must not appear to be crowded among other elements. A minimum amount of clear space must always surround the logo as illustrated by the blue shaded area. As a general rule, use half the height of the icon to determine your clear space area.

Outermost logo area:

- Top edge of icon or company name
- Far right separator rule or last “t” in “Light”
- Bottom edge of descending letters in “Hawai’i Electric Light” in the horizontal logo, and the bottom edge of icon in the stacked logo

AND

- Far left edge of the icon in the horizontal logo, and the far left edge of the letter “H” in “Hawai’i Electric Light”

The same requirements apply for the Hawaiian Electric, Maui Electric and Hawai’i Electric Light logos.

Minimum usage

Minimum usage width: 2”

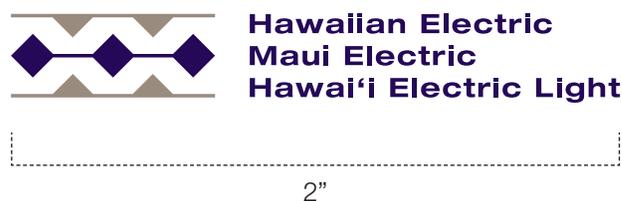


EXHIBIT Q

SECURITY AGREEMENT

(All Personal Property)

THIS SECURITY AGREEMENT ("Agreement") dated as of _____, 20__ is between _____, a _____ (the "Debtor"), and Hawaiian Electric Company, Inc., a Hawai'i corporation (the "Secured Party").

Recitals:

(a) The Debtor intends to develop, own, deploy and operate a Grid Services Delivery System ("GSDS") within the State of Hawai'i.

(b) The Debtor and Security Party have entered into a Grid Services Purchase Agreement dated as of _____, 20__ (as amended and in effect from time to time, the "Grid Services Purchase Agreement"), pursuant to which the Secured Party has agreed to purchase various grid services aggregated and delivered by the Debtor through the GSDS.

(c) Pursuant to Section 5.2 (Security Agreement) of the Grid Services Purchase Agreement and in consideration of the Secured Party's agreements under the Grid Services Purchase Agreement, the Debtor has agreed to grant the Secured Party a security interest in the GSDS and other collateral to secure the Debtor's obligations under the Grid Services Purchase Agreement.

Agreements:

NOW, THEREFORE, in consideration of the promises contained in this Agreement and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. Definitions. All capitalized terms used this Agreement without definitions shall have the respective meanings provided for such terms in the Grid Services Purchase Agreement. For the purposes of this Agreement, the following terms have the meanings specified in this Section 1.

"Event of Default" means the failure of the Debtor to pay or perform any of the Obligations as and when due to be paid or performed under the terms of the Grid Services Purchase Agreement and this Agreement.

"Obligations" means all of the indebtedness, obligations and liabilities of the Debtor to the Secured Party, individually or collectively, whether direct or indirect, joint or several, absolute or contingent, due or to become due, now existing or hereafter arising under or in respect of the Grid Services Purchase Agreement, any other instruments or agreements executed and delivered pursuant to or in connection with the Grid Services Purchase Agreement, or this Agreement.

“State” means the State of **[DEBTOR'S JURISDICTION OF ORGANIZATION]**. All terms defined in the Uniform Commercial Code of the State and used in this Agreement shall have the same definitions as specified in the Uniform Commercial Code of the State. However, if a term is defined in Article 9 of the Uniform Commercial Code of the State differently than in another Article of the Uniform Commercial Code of the State, the term has the meaning specified in Article 9.

2. **Grant of Security Interest.** The Debtor hereby grants to the Secured Party, to secure the payment and performance in full of all of the Obligations, a security interest in and so pledges and assigns to the Secured Party the following properties, assets and rights of the Debtor, wherever located, whether now owned or hereafter acquired or arising, and all proceeds and products thereof (collectively, the “Collateral”):

All personal and fixture property of every kind and nature including without limitation all goods (including inventory, equipment and any accessions thereto), instruments (including promissory notes), documents, accounts (including health-care-insurance receivables), chattel paper (whether tangible or electronic), deposit accounts, letter-of-credit rights (whether or not the letter of credit is evidenced by a writing), commercial tort Claims **[INCLUDE SPECIFIC DESCRIPTION OF COMMERCIAL TORT CLAIMS EXISTING AT EXECUTION OF SECURITY AGREEMENT]**, securities and all other investment property, supporting obligations, any other contract rights or rights to the payment of money, insurance claims and proceeds, and all general intangibles (including all payment intangibles).

The Secured Party acknowledges that the attachment of its security interest in any additional commercial tort claim as original collateral is subject to the Debtor's compliance with Section 4.7 (Commercial Tort Claims) of this Agreement.

3. **Authorization to File Financing Statements.** The Debtor hereby irrevocably authorizes the Secured Party at any time and from time to time to file in any filing office in any Uniform Commercial Code jurisdiction any initial financing statements and amendments thereto that:

(a) Indicate the Collateral (i) as all assets of the Debtor or words of similar effect, regardless of whether any particular asset comprised in the Collateral falls within the scope of Article 9 of the Uniform Commercial Code of the State or such jurisdiction, or (ii) as being of an equal or lesser scope or with greater detail, and

(b) Provide any other information required by part 5 of Article 9 of the Uniform Commercial Code of the State, or such other jurisdiction, for the sufficiency or filing office acceptance of any financing statement or amendment, including (i) whether the Debtor is an organization, the type of organization and any organizational identification number issued to the Debtor and, (ii) in the case of a financing statement

filed as a fixture filing, a sufficient description of real property to which the Collateral relates.

The Debtor agrees to furnish any such information to the Secured Party promptly upon the Secured Party's request. The Debtor also ratifies its authorization for the Secured Party to have filed in any Uniform Commercial Code jurisdiction any like initial financing statements or amendments thereto if filed prior to the date of this Agreement.

4. Other Actions. To further the attachment, perfection and priority of, and the ability of the Secured Party to enforce, the Secured Party's security interest in the Collateral, and without limitation on the Debtor's other obligations in this Agreement, the Debtor agrees, in each case at the Debtor's expense, to take the following actions with respect to the following Collateral:

4.1 Promissory Notes and Tangible Chattel Paper. If the Debtor at any time holds or acquires any promissory notes or tangible chattel paper, the Debtor shall forthwith endorse, assign and deliver the same to the Secured Party, accompanied by such instruments of transfer or assignment duly executed in blank as the Secured Party may from time to time specify.

4.2 Deposit Accounts. For each deposit account that the Debtor at any time opens or maintains, the Debtor shall, at the Secured Party's request and option, pursuant to an agreement in form and substance satisfactory to the Secured Party, either:

(a) Cause the depository bank to comply at any time with instructions from the Secured Party to such depository bank directing the disposition of funds from time to time credited to such deposit account, without further consent of the Debtor, or

(b) Arrange for the Secured Party to become the customer of the depository bank with respect to the deposit account, with the Debtor being permitted, only with the consent of the Secured Party, to exercise rights to withdraw funds from such deposit account.

(c) The Secured Party agrees with the Debtor that the Secured Party shall not give any such instructions or withhold any withdrawal rights from the Debtor, unless an Event of Default has occurred and is continuing, or would occur, if effect were given to any withdrawal not otherwise permitted by the Grid Services Purchase Agreement.

(d) The provisions of this subsection shall not apply to (i) any deposit account for which the Debtor, the depository bank and the Secured Party have entered into a cash collateral agreement specially negotiated among the Debtor, the depository bank and the Secured Party for the specific purpose set forth in such agreement, (ii) a deposit account for which the Secured Party is the depository bank and is in automatic control, and (iii) deposit accounts specially and exclusively used for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of the Debtor's salaried employees.

4.3 Investment Property.

(a) If the Debtor at any time holds or acquires any certificated securities, the Debtor shall forthwith endorse, assign and deliver the same to the Secured Party, accompanied by such instruments of transfer or assignment duly executed in blank as the Secured Party may from time to time specify.

(b) If any securities now or hereafter acquired by the Debtor are uncertificated and are issued to the Debtor or its nominee directly by the issuer of such securities, the Debtor shall immediately notify the Secured Party of such fact and, at the Secured Party's request and option, pursuant to an agreement in form and substance satisfactory to the Secured Party, either (i) cause the issuer to agree to comply with instructions from the Secured Party as to such securities, without further consent of the Debtor or such nominee, or (ii) arrange for the Secured Party to become the registered owner of the securities.

(c) If any securities, whether certificated or uncertificated, or other investment property now or hereafter acquired by the Debtor are held by the Debtor or its nominee through a securities intermediary or commodity intermediary, the Debtor shall immediately notify the Secured Party of such fact and, at the Secured Party's request and option, pursuant to an agreement in form and substance satisfactory to the Secured Party, either:

(i) cause such securities intermediary or (as the case may be) commodity intermediary to agree to comply with entitlement orders or other instructions from the Secured Party to such securities intermediary as to such securities or other investment property, or (as the case may be) to apply any value distributed on account of any commodity contract as directed by the Secured Party to such commodity intermediary, in each case without further consent of the Debtor or such nominee, or

(ii) in the case of financial assets or other investment property held through a securities intermediary, arrange for the Secured Party to become the entitlement holder with respect to such investment property, with the Debtor being permitted, only with the consent of the Secured Party, to exercise rights to withdraw or otherwise deal with such investment property.

(d) The Secured Party agrees with the Debtor that the Secured Party shall not give any such entitlement orders or instructions or directions to any such issuer, securities intermediary or commodity intermediary, and shall not withhold its consent to the exercise of any withdrawal or dealing rights by the Debtor, unless an Event of Default has occurred and is continuing, or, after giving effect to any such investment and withdrawal rights not otherwise permitted by the Grid Services Purchase Agreement, would occur.

(e) The provisions of this subsection shall not apply to any financial

assets credited to a securities account for which the Secured Party is the securities intermediary.

4.4 Collateral in the Possession of a Bailee. If any Collateral is at any time in the possession of a bailee, the Debtor shall promptly notify the Secured Party of such fact and, at the Secured Party's request and option, shall promptly obtain an acknowledgement from the bailee, in form and substance satisfactory to the Secured Party, that the bailee holds such Collateral for the benefit of the Secured Party, and that such bailee agrees to comply, without further consent of the Debtor, with instructions from the Secured Party as to such Collateral. The Secured Party agrees with the Debtor that the Secured Party shall not give any such instructions unless an Event of Default has occurred and is continuing or would occur after taking into account any action by the Debtor with respect to the bailee.

4.5 Electronic Chattel Paper and Transferable Records.

(a) If the Debtor at any time holds or acquires an interest in any electronic chattel paper or any "transferable record," as that term is defined in Section 201 of the federal Electronic Signatures in Global and National Commerce Act, or in Section 16 of the Uniform Electronic Transactions Act as in effect in any relevant jurisdiction, the Debtor shall promptly notify the Secured Party of such fact and, at the request and option of the Secured Party, shall take such action as the Secured Party may reasonably request to vest in the Secured Party control, under Section 490:9-105 of the Uniform Commercial Code, of such electronic chattel paper or control under Section 201 of the federal Electronic Signatures in Global and National Commerce Act or, as the case may be, Section 16 of the Uniform Electronic Transactions Act, as so in effect in such jurisdiction, of such transferable record.

(b) The Secured Party agrees with the Debtor that the Secured Party will arrange, pursuant to procedures satisfactory to the Secured Party and so long as such procedures will not result in the Secured Party's loss of control, for the Debtor to make alterations to the electronic chattel paper or transferable record permitted under UCC Section 490:9-105 or, as the case may be, Section 201 of the federal Electronic Signatures in Global and National Commerce Act or Section 16 of the Uniform Electronic Transactions Act for a party in control to make without loss of control, unless an Event of Default has occurred and is continuing or would occur after taking into account any action by the Debtor with respect to such electronic chattel paper or transferable record.

4.6 Letter-of-Credit Rights. If the Debtor is at any time a beneficiary under a letter of credit, the Debtor shall promptly notify the Secured Party of such fact and, at the request and option of the Secured Party, the Debtor shall, pursuant to an agreement in form and substance satisfactory to the Secured Party, either (i) arrange for the issuer and any confirmer or other nominated person of such letter of credit to consent to an assignment to the Secured Party of the proceeds of the letter of credit, or (ii) arrange for the Secured Party to become the transferee beneficiary of the letter of credit, with the

Secured Party agreeing, in each case, that the proceeds of the letter to credit are to be applied as provided in the Grid Services Purchase Agreement.

4.7 Commercial Tort Claims. If the Debtor at any time holds or acquires a commercial tort claim (in addition to any listed in Section 2 (Grant of Security Interest) of this Agreement, the Debtor shall immediately notify the Secured Party in a writing signed by the Debtor of the particulars of the claim and grant to the Secured Party in such writing a security interest in the claim and in the proceeds of the claim, all upon the terms of this Agreement, with such writing to be in form and substance satisfactory to the Secured Party.

4.8 Other Actions as to Any and All Collateral. The Debtor further agrees, at the request and option of the Secured Party, to take any and all other actions the Secured Party may determine to be necessary or useful for the attachment, perfection and priority of, and the ability of the Secured Party to enforce, the Secured Party's security interest in any and all of the Collateral, including, without limitation:

(a) Executing, delivering and, where appropriate, filing financing statements and amendments relating thereto under the Uniform Commercial Code, to the extent, if any, that the Debtor's signature thereon is required therefore.

(b) Causing the Secured Party's name to be noted as secured party on any certificate of title for a titled good if such notation is a condition to attachment, perfection or priority of, or ability of the Secured Party to enforce, the Secured Party's security interest in such Collateral.

(c) Complying with any provision of any statute, regulation or treaty of the United States as to any Collateral if compliance with such provision is a condition to attachment, perfection or priority of, or ability of the Secured Party to enforce, the Secured Party's security interest in such Collateral.

(d) Obtaining governmental and other third party waivers, consents and approvals in form and substance satisfactory to Secured Party, including, without limitation, any consent of any licensor, lessor or other person obligated on the Collateral.

(e) Obtaining waivers from mortgagees and landlords in form and substance satisfactory to the Secured Party.

(f) Taking all actions under any earlier versions of the Uniform Commercial Code or under any other law, as reasonably determined by the Secured Party to be applicable in any relevant Uniform Commercial Code or other jurisdiction, including any foreign jurisdiction.

5. Relation to Other Security Documents. The provisions of this Agreement supplement the provisions of any real estate mortgage granted by the Debtor to the Secured Party which secures the payment or performance of any of the Obligations. Nothing contained in any

such real estate mortgage shall derogate from any of the rights or remedies of the Secured Party under this Agreement.

6. Representations and Warranties Concerning Debtor's Legal Status. The Debtor represents and warrants to the Secured Party as follows:

(a) The Debtor's exact legal name is that indicated in the first paragraph and on the signature page of this Agreement.

(b) The Debtor is an organization of the type, and is organized in the jurisdiction set forth in the first paragraph of this Agreement.

(c) The Debtor's state issued organizational identification number is:

_____.

(d) The Debtor's place of business or, if more than one, its chief executive office, is at the address set forth in Section 17.1 (Notices) of the Grid Services Purchase Agreement.

7. Covenants Concerning Debtor's Legal Status. The Debtor covenants with the Secured Party as follows: (a) without providing at least thirty (30) Days prior written notice to the Secured Party, the Debtor will not change its name, its place of business or, if more than one, chief executive office, or its mailing address or organizational identification number if it has one, (b) if the Debtor does not have an organizational identification number and later obtains one, the Debtor shall forthwith notify the Secured Party of such organizational identification number, and (c) the Debtor will not change its type of organization, jurisdiction of organization or other legal structure.

8. Representations and Warranties Concerning Collateral, etc. The Debtor further represents and warrants to the Secured Party as follows:

(a) The Debtor is the owner of the Collateral, free from any right or claim of any person or any adverse lien, security interest or other encumbrance, except for the security interest created by this Agreement and other liens permitted by the Grid Services Purchase Agreement.

(b) None of the Collateral constitutes, or is the proceeds of, "farm products" as defined in Section 490:9-102(a) of the Uniform Commercial Code of the State.

(c) None of the account debtors or other persons obligated on any of the Collateral is a governmental authority covered by the Federal Assignment of Claims Act or like federal, state or local statute or rule in respect of such Collateral.

(d) The Debtor holds no commercial tort claim except as follows:

_____.

(e) The Debtor has at all times operated its business in compliance with all applicable provisions of the federal Fair Labor Standards Act, as amended, and with all applicable provisions of federal, state and local statutes and ordinances dealing with the control, shipment, storage or disposal of hazardous materials or substances.

9. Covenants Concerning Collateral, etc. The Debtor further covenants with the Secured Party as follows:

(a) The Collateral, to the extent not delivered to the Secured Party pursuant to Section 4 (Other Actions) of this Agreement, will be kept at the Debtor's place of business or in other locations disclosed to the Secured Party in writing from time to time, and the Debtor will not remove the Collateral from such locations without providing at least thirty (30) Days prior written notice to the Secured Party.

(b) Except for the security interest granted in this Agreement and liens permitted by the Grid Services Purchase Agreement, the Debtor shall be the owner of the Collateral free from any right or claim of any other person, lien, security interest or other encumbrance, and the Debtor shall defend the same against all claims and demands of all persons at any time claiming the same or any interests in the Collateral adverse to the Secured Party.

(c) The Debtor shall not pledge, mortgage or create, or suffer to exist any right of any person in or claim by any person to the Collateral, or any security interest, lien or encumbrance in the Collateral in favor of any person, other than the Secured Party except for liens permitted by the Grid Services Purchase Agreement.

(d) The Debtor will keep the Collateral in good order and repair and will not use the same in violation of Law or any policy of insurance thereon.

(e) As provided in the Grid Services Purchase Agreement, The Debtor will permit the Secured Party, or its designee, to inspect the Collateral at any reasonable time, wherever located.

(f) The Debtor will pay promptly when due all taxes, assessments, governmental charges and levies upon the Collateral or incurred in connection with the use or operation of the Collateral or incurred in connection with this Agreement.

(g) The Debtor will continue to operate, its business in compliance with all applicable provisions of the federal Fair Labor Standards Act, as amended, and with all applicable provisions of federal, state and local statutes and ordinances dealing with the control, shipment, storage or disposal of hazardous materials or substances.

(h) The Debtor will not sell or otherwise dispose, or offer to sell or otherwise dispose, of the Collateral or any interest therein except for (i) sales in the ordinary course of business and (ii) so long as no Event of Default has occurred and is continuing, sales or other dispositions of obsolescent items of equipment consistent with past practices or permitted by the Grid Services Purchase Agreement.

10. Contracts.

10.1 Included in Collateral. Included in the Collateral are, to the extent applicable, the following contracts and agreements, now owned or hereafter acquired or arising (the “Contracts”):

- (a) the Grid Services Purchase Agreement;
- (b) the Operation and Maintenance Agreement;
- (c) the Debtor's insurance policies including policies insuring against loss of revenues by reason of interruption of the operation of the GSDS and all loss proceeds and other amounts payable to the Debtor under such policies;
- (d) all other agreements, including vendor warranties and payment and performance bonds, relating to the development or acquisition of the GSDS;
- (e) any lease or sublease agreements relating to any facilities to which the Debtor may become a party;
- (f) any other agreements to which the Debtor may become a party relating to the development or operation of the GSDS or any part of the GSDS, including any equipment installed at the Customers’ premises;
- (g) all Government Approvals in respect of the GSDS;
- (h) all rights to terminate, amend, supplement, modify or waive performance under the Contracts, to perform under the Contracts, and to compel performance and otherwise exercise remedies under the Contracts; and
- (i) all amendments, supplements, substitutions and renewals of any of the Contracts.

10.2 Copies of Contracts. The Debtor has delivered to the Secured Party, or is concurrently with this Agreement delivering to the Secured Party, a true and complete executed copy of each Contract. The Debtor will deliver to the Secured Party an executed copy of each future Contract, and any amendments or supplements to any Contract, promptly upon the execution of such future Contracts or the amendments to the Contracts.

10.3 Consent to Future Contracts. The Debtor will not enter into any future Contract or other material agreement relating to the GSDS, without the prior written consent of the Secured Party, which will not be unreasonably withheld.

10.4 Compliance with Contracts. The Debtor will perform and comply, in all material respects, with all obligations and conditions on its part to be observed and performed under each of the Contracts.

10.5 Amendments and Waivers of Contracts. Without the prior written consent of the Secured Party, which will not be unreasonably withheld, the Debtor will not (i) modify, amend, terminate, waive or supplement any provision of any Contract, (ii) fail to exercise promptly and diligently each and every material right which the Debtor may have under each Contract (other than the Grid Services Purchase Agreement, and any right of termination), or (iii) fail to deliver to the Secured Party a copy of each demand, notice or document received or given by the Debtor relating in any way to any of the Contracts.

10.6 Representations Regarding Contracts. The Debtor represents and warrants to the Secured Party that each Contract in effect on the date of this Agreement (i) has been duly authorized, executed and delivered by all parties to the Contract (other than the Secured Party), (ii) has not been amended or otherwise modified, (iii) is in full force and effect, (iv) is binding upon and enforceable against all parties to the Contract (other than the Secured Party) in accordance with its terms, and (v) there exists no defaults under the Contract by the Debtor, or to the best knowledge of the Debtor, by the other parties to the Contract.

10.7 Consents to Security Interest. Except as disclosed to the Secured Party in writing, the Debtor has obtained all necessary consents to this Agreement (including specifically the Secured Party's cure rights set forth in Section 10.8(b) below) from each of the parties to the Contracts. The Debtor agrees to use its commercially reasonable efforts to obtain the consent of any party to a Contract from which consent has not been obtained, and from each future or successor party to a Contract.

10.8 Notice of Defaults; Right to Cure.

(a) The Debtor shall promptly notify the Secured Party of any material default under any of the Contracts, or any event which with the giving of notice or the passage of time or both might become a material default under any Contract, of which the Debtor has knowledge or as to which the Debtor has received notice.

(b) The Secured Party shall, at its option, have the right (but not the obligation) to remedy any such default by giving written notice of such intent to the Debtor and to the parties to each Contract in default. The Secured Party shall have sixty (60) Days after its receipt of notice of such default to cure the default. In the event the default (except monetary defaults) cannot be cured within such 60-Day period, the parties to such Contracts shall not exercise any remedies under the Contracts if the Secured Party shall, within such 60-Day period, initiate action to cure such default and proceed diligently to cure the default.

(c) Any cure by the Secured Party of any default by the Debtor under any of the Contracts shall not be construed as an assumption by the Secured Party of any obligation, covenant or agreement of the Debtor under such Contracts, and the Secured party shall not incur any liability to the Debtor or any other person as a result of any actions undertaken by the Secured Party in curing or attempting to cure any such default.

11. Insurance.

11.1 Maintenance of Insurance. The Debtor will maintain with respect to the Collateral and its business insurance in such amounts, upon such terms, in such forms and for such periods as required by the Grid Services Purchase Agreement.

11.2 Insurance Proceeds. The proceeds of any casualty insurance in respect to any casualty loss of any of the Collateral shall, subject to the rights, if any, of other parties with an interest having priority in the property covered thereby,

(a) So long as no Default or Event of Default has occurred and is continuing and to the extent that the amount of such proceeds is less than \$[_____], be disbursed to the Debtor for direct application by the Debtor solely to the repair or replacement of the Debtor's property so damaged or destroyed, and

(b) In all other circumstances, be held by the Secured Party as cash collateral for the Obligations.

The Secured Party may, at its sole option, disburse from time to time all or any part of such proceeds so held as cash collateral, upon such terms and conditions as the Secured Party may reasonably prescribe, for direct application by the Debtor solely to the repair or replacement of the Debtor's property so damaged or destroyed, or the Secured Party may apply all or any part of such proceeds to the Obligations.

11.3 Continuation of Insurance. All policies of insurance shall provide for at least thirty (30) Days prior written cancellation notice to the Secured Party. In the event of failure by the Debtor to provide and maintain insurance as provided in this Agreement, the Secured Party may, at its option, provide such insurance and charge the amount thereof to the Debtor. The Debtor shall furnish the Secured Party with certificates of insurance and policies evidencing compliance with the foregoing insurance provision.

12. Collateral Protection Expenses; Preservation of Collateral.

12.1 Expenses Incurred by Secured Party. In the Secured Party's discretion, if the Debtor fails to do so, the Secured Party may discharge taxes and other encumbrances at any time levied or placed on any of the Collateral, maintain any of the Collateral, make repairs thereto and pay any necessary filing fees or insurance premiums. The Debtor agrees to reimburse the Secured Party on demand for all expenditures so made. The Secured Party shall have no obligation to the Debtor to make any such expenditures, nor shall the making of such expenditures be construed as the waiver or cure of any Event of Default.

12.2 Secured Party's Obligations and Duties. Anything in this Agreement to the contrary notwithstanding, the Debtor shall remain obligated and liable under each contract or agreement comprised in the Collateral to be observed or performed by the Debtor thereunder. The Secured Party shall not have any obligation or liability under any such contract or agreement by reason of or arising out of this Agreement or the receipt by

the Secured Party of any payment relating to any of the Collateral, nor shall the Secured Party be obligated in any manner to perform any of the obligations of the Debtor under or pursuant to any such contract or agreement, to make inquiry as to the nature or sufficiency of any payment received by the Secured Party in respect of the Collateral or as to the sufficiency of any performance by any party under any such contract or agreement, to present or file any claim, to take any action to enforce any performance or to collect the payment of any amounts which may have been assigned to the Secured Party or to which the Secured Party may be entitled at any time or times. The Secured Party's sole duty with respect to the custody, safe keeping and physical preservation of the Collateral in its possession, under Section 490:9-207 of the Uniform Commercial Code of the State or otherwise, shall be to deal with such Collateral in the same manner as the Secured Party deals with similar property for its own account.

13. Securities and Deposits. The Secured Party may at any time following and during the continuance of an Event of Default, at its option, transfer to itself or any nominee any securities constituting Collateral, receive any income thereon and hold such income as additional Collateral or apply it to the Obligations. Whether or not any Obligations are due, the Secured Party may following and during the continuance of an Event of Default demand, sue for, collect, or make any settlement or compromise which it deems desirable with respect to the Collateral. Regardless of the adequacy of the Collateral or any other security for the Obligations, any deposits or other sums at any time credited by or due from the Secured Party to the Debtor may at any time be applied to or set off against any of the Obligations.

14. Notification to Account Debtors and Other Persons Obligated on Collateral. If an Event of Default shall have occurred and be continuing, the Debtor shall, at the request and option of the Secured Party, notify account debtors and other persons obligated on any of the Collateral of the security interest of the Secured Party in any account, chattel paper, general intangible, instrument or other Collateral and that payment thereof is to be made directly to the Secured Party or to any financial institution designated by the Secured Party as the Secured Party's agent therefor, and the Secured Party may itself, if an Event of Default shall have occurred and be continuing, without notice to or demand upon the Debtor, so notify account debtors and other persons obligated on Collateral. After the making of such a request or the giving of any such notification, the Debtor shall hold any proceeds of collection of accounts, chattel paper, general intangibles, instruments and other Collateral received by the Debtor as trustee for the Secured Party without commingling the same with other funds of the Debtor and shall turn the same over to the Secured Party in the identical form received, together with any necessary endorsements or assignments. The Secured Party shall apply the proceeds of collection of accounts, chattel paper, general intangibles, instruments and other Collateral received by the Secured Party to the Obligations, such proceeds to be immediately credited after final payment in cash or other immediately available funds of the items giving rise to them.

15. Power of Attorney.

15.1 Appointment and Powers of Secured Party. The Debtor hereby irrevocably constitutes and appoints the Secured Party and any officer or agent of Secured Party, with full power of substitution, as its true and lawful attorneys-in-fact with full irrevocable power and authority in the place and stead of the Debtor or in the Secured

Party's own name, for the purpose of carrying out the terms of this Agreement, to take any and all appropriate action and to execute any and all documents and instruments that may be necessary or useful to accomplish the purposes of this Agreement and, without limiting the generality of the foregoing, hereby gives said attorneys the power and right, on behalf of the Debtor, without notice to or assent by the Debtor, to do the following:

(a) Upon the occurrence and during the continuance of an Event of Default, generally to sell, transfer, pledge, make any agreement with respect to or otherwise dispose of or deal with any of the Collateral in such manner as is consistent with the Uniform Commercial Code of the State and as fully and completely as though the Secured Party were the absolute owner of such Collateral for all purposes, and to do, at the Debtor's expense, at any time, or from time to time, all acts and things which the Secured Party deems necessary or useful to protect, preserve or realize upon the Collateral and the Secured Party's security interest in the Collateral, in order to effect the intent of this Agreement, all at least as fully and effectively as the Debtor might do, including, without limitation, (i) the filing and prosecuting of registration and transfer applications with the appropriate federal, state, local or other agencies or authorities with respect to trademarks, copyrights and patentable inventions and processes, (ii) upon written notice to the Debtor, the exercise of voting rights with respect to voting securities, which rights may be exercised, if the Secured Party so elects, with a view to causing the liquidation of assets of the issuer of any such securities, and (iii) the execution, delivery and recording, in connection with any sale or other disposition of any Collateral, of the endorsements, assignments or other instruments of conveyance or transfer with respect to such Collateral; and

(b) To the extent that the Debtor's authorization given in Section 3 (Authorization to File Financing Statements) of this Agreement is not sufficient, to file such financing statements with respect to this Agreement, with or without the Debtor's signature, or a photocopy of this Agreement in substitution for a financing statement, as the Secured Party may deem appropriate, and to execute in the Debtor's name such financing statements and amendments thereto and continuation statements which may require the Debtor's signature.

15.2 Ratification by Debtor. To the extent permitted by law, the Debtor hereby ratifies all that said attorneys shall lawfully do or cause to be done by virtue of this Agreement. This power of attorney is a power coupled with an interest and is irrevocable.

15.3 No Duty on Secured Party. The powers conferred on the Secured Party under this Agreement are solely to protect its interests in the Collateral and shall not impose any duty upon it to exercise any such powers. The Secured Party shall be accountable only for the amounts that it actually receives as a result of the exercise of such powers, and neither it nor any of its officers, directors, employees or agents shall be responsible to the Debtor for any act or failure to act, except for the Secured Party's own gross negligence or willful misconduct.

16. Rights and Remedies. In addition to all other rights and remedies, and without any other notice to or demand upon the Debtor, if an Event of Default shall occurred and be continuing, the Secured Party shall have, in any jurisdiction in which enforcement of this Agreement is sought, the rights and remedies of a secured party under the Uniform Commercial Code of the State and any additional rights and remedies which may be provided to a secured party in any jurisdiction in which the Collateral is located, including, without limitation, the right to take possession of the Collateral, and for that purpose the Secured Party may, so far as the Debtor can give authority therefor, enter upon any premises on which the Collateral may be situated and remove such Collateral from such premises. The Secured Party may in its discretion require the Debtor to assemble all or any part of the Collateral at such location or locations within the jurisdiction(s) of the Debtor's principal office(s) or at such other locations as the Secured Party may reasonably designate. Unless the Collateral is perishable or threatens to decline speedily in value or is of a type customarily sold on a recognized market, the Secured Party shall give to the Debtor at least five (5) Business Days prior written notice of the time and place of any public sale of Collateral or of the time after which any private sale or any other intended disposition is to be made. The Debtor hereby acknowledges that five (5) Business Days prior written notice of such sale or sales shall be reasonable notice. In addition, the Debtor waives any and all rights that it may have to a judicial hearing in advance of the enforcement of any of the Secured Party's rights and remedies under this Agreement, including, without limitation, its right following an Event of Default to take immediate possession of the Collateral and to exercise its rights and remedies with respect thereto.

17. Standards for Exercising Rights and Remedies. To the extent that applicable Law imposes duties on the Secured Party to exercise remedies in a commercially reasonable manner, the Debtor acknowledges and agrees that it is not commercially unreasonable for the Secured Party:

(a) To fail to incur expenses reasonably deemed significant by the Secured Party to prepare Collateral for disposition or otherwise to fail to complete raw material or work in process into finished goods or other finished products for disposition.

(b) To fail to obtain third party consents for access to Collateral to be disposed of, or to obtain or, if not required by other law, to fail to obtain governmental or third party consents for the collection or disposition of Collateral to be collected or disposed of.

(c) To fail to exercise collection remedies against account debtors or other persons obligated on Collateral or to fail to remove liens or encumbrances on or any adverse claims against Collateral.

(d) To exercise collection remedies against account debtors and other persons obligated on Collateral directly or through the use of collection agencies and other collection specialists.

(e) To advertise dispositions of Collateral through publications or media of general circulation, whether or not the Collateral is of a specialized nature.

- (f) To contact other persons, whether or not in the same business as the Debtor, for expressions of interest in acquiring all or any portion of the Collateral.
- (g) To hire one or more professional auctioneers to assist in the disposition of Collateral, whether or not the Collateral is of a specialized nature.
- (h) To dispose of Collateral by utilizing Internet sites that provide for the auction of assets of the types included in the Collateral or that have the reasonable capability of doing so, or that match buyers and sellers of assets.
- (i) To dispose of assets in wholesale rather than retail markets.
- (j) To disclaim disposition warranties.
- (k) To purchase insurance or credit enhancements to insure the Secured Party against risks of loss, collection or disposition of Collateral or to provide to the Secured Party a guaranteed return from the collection or disposition of Collateral.
- (l) To the extent deemed appropriate by the Secured Party, to obtain the services of other brokers, investment bankers, consultants and other professionals to assist the Secured Party in the collection or disposition of any of the Collateral.

The Debtor acknowledges that the purpose of this Section 17 (Standards for Exercising Rights and Remedies) is to provide non-exhaustive indications of what actions or omissions by the Secured Party would fulfill the Secured Party's duties under the Uniform Commercial Code or other law of the State or any other relevant jurisdiction in the Secured Party's exercise of remedies against the Collateral and that other actions or omissions by the Secured Party shall not be deemed to fail to fulfill such duties solely on account of not being indicated in this Section 17 (Standards for Exercising Rights and Remedies). Without limitation upon the foregoing, nothing contained in this Section 17 (Standards for Exercising Rights and Remedies) shall be construed to grant any rights to the Debtor or to impose any duties on the Secured Party that would not have been granted or imposed by this Agreement or by applicable Law in the absence of this Section 17 (Standards for Exercising Rights and Remedies).

18. No Waiver by Secured Party, etc. The Secured Party shall not be deemed to have waived any of its rights or remedies in respect of the Obligations or the Collateral unless such waiver shall be in writing and signed by the Secured Party. No delay or omission on the part of the Secured Party in exercising any right or remedy shall operate as a waiver of such right or remedy or any other right or remedy. A waiver on any one occasion shall not be construed as a bar to or waiver of any right or remedy on any future occasion. All rights and remedies of the Secured Party with respect to the Obligations or the Collateral, whether evidenced hereby or by any other instrument or papers, shall be cumulative and may be exercised singularly, alternatively, successively or concurrently at such time or at such times as the Secured Party deems expedient.

19. Suretyship Waivers by Debtor. The Debtor waives demand, notice, protest, notice of acceptance of this Agreement, notice of credit extended, Collateral received or delivered or other action taken in reliance on this Agreement and all other demands and notices

of any description. With respect to both the Obligations and the Collateral, the Debtor assents to any extension or postponement of the time of payment or any other indulgence, to any substitution, exchange or release of or failure to perfect any security interest in any Collateral, to the addition or release of any party or person primarily or secondarily liable, to the acceptance of partial payment thereon and the settlement, compromising or adjusting of any thereof, all in such manner and at such time or times as the Secured Party may deem advisable. The Secured Party shall have no duty as to the collection or protection of the Collateral or any income therefrom, the preservation of rights against prior parties, or the preservation of any rights pertaining to the Collateral beyond the safe custody of the Collateral as set forth in Section 12.2 (Secured Party's Obligations and Duties). The Debtor further waives any and all other suretyship defenses.

20. Marshalling. The Secured Party shall not be required to marshal any present or future collateral security (including but not limited to the Collateral) for, or other assurances of payment of, the Obligations or any of them or to resort to such collateral security or other assurances of payment in any particular order, and all of its rights and remedies under this Agreement and in respect of such collateral security and other assurances of payment shall be cumulative and in addition to all other rights and remedies, however existing or arising. To the extent that it lawfully may, the Debtor hereby agrees that it will not invoke any law relating to the marshalling of collateral which might cause delay in or impede the enforcement of the Secured Party's rights and remedies under this Agreement or under any other instrument creating or evidencing any of the Obligations or under which any of the Obligations is outstanding or by which any of the Obligations is secured or payment of the Obligations is otherwise assured, and, to the extent that it lawfully may, the Debtor hereby irrevocably waives the benefits of all such laws.

21. Proceeds of Dispositions; Expenses. The Debtor shall pay to the Secured Party on demand any and all expenses, including reasonable attorneys' fees and disbursements, incurred or paid by the Secured Party in protecting, preserving or enforcing the Secured Party's rights and remedies under or in respect of any of the Obligations or any of the Collateral. After deducting all of said expenses, the residue of any proceeds of collection or sale or other disposition of the Collateral shall, to the extent actually received in cash, be applied to the payment of the Obligations in such order or preference as the Secured Party may determine or in such order or preference as is provided in the Grid Services Purchase Agreement, proper allowance and provision being made for any Obligations not then due. Upon the final payment and satisfaction in full of all of the Obligations and after making any payments required by Sections 490:9-608(a)(1)(C) or 490:9-615(a)(3) of the Uniform Commercial Code of the State, any excess shall be returned to the Debtor. In the absence of final payment and satisfaction in full of all of the Obligations, the Debtor shall remain liable for any deficiency.

22. Overdue Amounts. Until paid, all amounts due and payable by the Debtor under this Agreement shall be a debt secured by the Collateral and shall bear, whether before or after judgment, interest at the base rate.

23. Governing Law; Consent to Jurisdiction. This Agreement shall be governed by, and construed in accordance with, the laws of the State of Hawai'i. The Debtor agrees that any action or claim arising out of, or any dispute in connection with, this Agreement, any rights, remedies, obligations, or duties under this Agreement, or the performance or enforcement of this

Agreement, may be brought in the courts of the State of Hawai'i or any federal court sitting in the State of Hawai'i and consents to the non-exclusive jurisdiction of such court and to service of process in any such suit being made upon the Debtor by mail at the address specified in Section 17.1 (Notices) of the Grid Services Purchase Agreement. The Debtor hereby waives any objection that it may now or hereafter have to the venue of any such suit or any such court or that such suit is brought in an inconvenient court.

24. Waiver of Jury Trial. The Debtor waives its right to a jury trial with respect to any action or claim arising out of any dispute in connection with this Agreement, any rights, remedies, obligations, or duties under this Agreement, or the performance or enforcement of this Agreement. Except as prohibited by law, the Debtor waives any right which it may have to claim or recover in any litigation referred to in the preceding sentence any special, exemplary, punitive or consequential damages or any damages other than, or in addition to, actual damages. The Debtor (i) certifies that neither the Secured Party nor any representative, agent or attorney of the Secured Party has represented, expressly or otherwise, that the Secured Party would not, in the event of litigation, seek to enforce the foregoing waivers or other waivers contained in this Agreement, and (ii) acknowledges that, in entering into the Grid Services Purchase Agreement, the Secured Party is relying upon, among other things, the waivers and certifications contained in this Section 24 (Waver of Jury Trial).

25. Miscellaneous. The headings of each section of this Agreement are for convenience only and shall not define or limit the provisions the sections. This Agreement and all rights and obligations under this Agreement shall be binding upon the Debtor and its respective successors and assigns, and shall inure to the benefit of the Secured Party and its successors and assigns. If any term of this Agreement shall be held to be invalid, illegal or unenforceable, the validity of all other terms of this Agreement shall in no way be affected thereby, and this Agreement shall be construed and be enforceable as if such invalid, illegal or unenforceable term had not been included in this Agreement. The Debtor acknowledges receipt of a copy of this Agreement.

IN WITNESS WHEREOF, intending to be legally bound, the Debtor and the Secured Party have caused this Agreement to be duly executed as of the date first above written.

_____, a

HAWAIIAN ELECTRIC COMPANY, INC.,
a Hawai'i corporation

By _____
Its

By _____
Its

Debtor

By _____
Its

Secured Party

Exhibit R

Form of Letter of Credit

[Bank Letterhead]

[Date]

Beneficiary: [Hawaiian Electric Company, HELCO or MECO, as appropriate]

[Address]

[Bank's Name]

[Bank's Address]

Re: **[Standby Letter of Credit Number]**

Ladies and Gentlemen:

We hereby establish, in your favor, our standby Letter of Credit Number _____ (this "Letter of Credit") for the account of **[Applicant's Name]** and **[Applicant's Address]** in the initial amount of \$_____ **[dollar value]** and authorize you, Hawaiian Electric Company **[HELCO or MECO, as appropriate]** ("Beneficiary"), to draw at sight on **[Bank's Name]**.

Subject to the terms and conditions hereof, this Letter of Credit secures **[Project Entity Name]**'s certain obligations to Beneficiary under the Grid Services Purchase Agreement dated as of _____ between **[Project Entity Name]** and Beneficiary.

This Letter of Credit is issued with respect to the following obligations:_____.

This Letter of Credit may be drawn upon under the terms and conditions set forth herein, including any documentation that must be delivered with any drawing request.

Partial draws of this Letter of Credit are permitted. This Letter of Credit is not transferable. Drafts on us at sight shall be accompanied by a Beneficiary's signed statement signed by a representative of Beneficiary substantially as follows:

The undersigned hereby certifies that (i) I am duly authorized to execute this document on behalf of Hawaiian Electric Company **[HELCO or MECO, as appropriate]**, and [(ii) the amount of the draft accompanying this certification is due and owing to Hawaiian Electric Company **[or HELCO or MECO, as appropriate]** under the terms of the Grid Services Purchase Agreement dated as of _____, between _____, and Hawaiian Electric Company **[or HELCO or MECO, as appropriate]**][(ii) the Letter of Credit will expire in less

than thirty (30) Days, it has not been replaced or extended and collateral is still required under Section 5.3 of the Grid Services Purchase Agreement¹].

Such drafts must bear the clause "Drawn under **[Bank's Name and Letter of Credit Number _____ and date of Letter of Credit.]**"

All demands for payment shall be made by presentation of originals or copies of documents, or by email transmission of documents to **[Bank email address]** or other such number as specified from time to time by the bank, with originals or copies of documents to follow by overnight mail. If presentation is made by email transmission, you may contact us at **[Bank Phone Number]** to confirm our receipt of the transmission. Your failure to seek such a telephone confirmation does not affect our obligation to honor such a presentation.

This letter of credit shall expire one year from the date hereof. Notwithstanding the foregoing, however, this letter of credit shall be automatically extended (without amendment of any other term and without the need for any action on the part of the undersigned or Beneficiary) for one year from the initial expiration date and each future expiration date unless we notify you in writing at least thirty (30) days prior to any such expiration date that this letter of credit will not be so extended. Any such notice shall be delivered by registered or certified mail, or by FedEx, both to **[revise for HELCO or MECO, as appropriate]**:

Director, Demand Response
Hawaiian Electric Company, Inc.
American Savings Bank Tower
1001 Bishop Street, Suite 1050
Honolulu, Hawai'i 96813

and to

SVP & Chief Financial Officer
Hawaiian Electric Company, Inc.
900 Richards Street, 4th Floor
Honolulu, Hawai'i 96813

We hereby agree with drawers that drafts and documents as specified above will be duly honored upon presentation to **[Bank's Name]** and **[Bank's Address]** if presented on or before the then-current expiration date hereof.

Payment of any amount under this Letter of Credit by **[Bank]** shall be made as the Beneficiary shall instruct on the next Business Day after the date the **[Bank]** receives all documentation required hereunder, in immediately available funds on such date. As used in this Letter of Credit, the term "Business Day" shall mean any day other than a Saturday or Sunday or

¹ For draw relating to lapse of Letter of Credit while credit support is still required pursuant to the Grid Services Purchase Agreement.

any other day on which banks in the State of Hawai'i are authorized or required by law to be closed.

Unless otherwise expressly stated herein, this irrevocable standby letter of credit is issued subject to the rules of the International Standby Practices, International Chamber of Commerce publication no. 590 ("ISP98").

[Bank's Name]:

By: _____

Name: _____

Title: _____

[Authorized Signature]

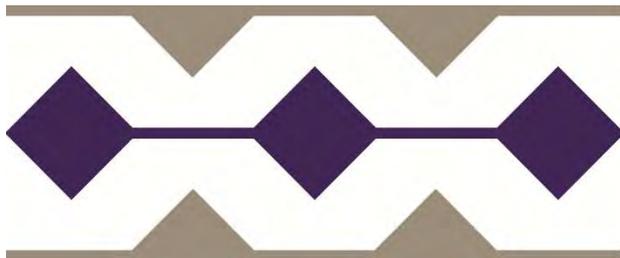
REQUEST FOR PROPOSALS
FOR
DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix M – Levelized Grid Service
Price Worksheet*



**Hawaiian
Electric**

Instructions

1. Populate the bidding price into the "Price" tab. (Fill in green cells as applicable.)
2. Populate the monthly kW into the "Monthly-Oahu", "Monthly-Maui", and "Monthly-Hawaii" tab.
Monthly kW number is the available load at the beginning of the month. (Fill in green cells as applicable.)
Bidder may assume their own monthly growth of contract capability from Contract Year 1 to Contract Year 4.
3. The worksheet will automatically calculate the management fee, enablement fee, and customer incentives by class segment. (See various tab of island-grid service to see calculation; ex: Oahu-FFR)
4. The same tabs that calculate the costs will calculate the average of levelized cost over the 5 years for each grid service.
5. The "Summary" tab will summarize the levelized grid service price and various costs by island.

Summary

Fast Frequency Response					
	Oahu		Maui		Hawaii
Levelized Grid Services (\$/kW)	#DIV/0!		#DIV/0!		#DIV/0!
Total Contract Capability (kW)	0		0		0
Total Grid Service amount	\$ -		\$ -		\$ -
Total Contract Amount (Aggregator Cost)	\$ -		\$ -		\$ -
Total Customer Incentives	\$ -		\$ -		\$ -

Capacity - Build					
	Oahu		Maui		Hawaii
Levelized Grid Services (\$/kW)	#DIV/0!		#DIV/0!		#DIV/0!
Total Contract Capability (kW)	0		0		0
Total Grid Service amount	\$ -		\$ -		\$ -
Total Contract Amount (Aggregator Cost)	\$ -		\$ -		\$ -
Total Customer Incentives	\$ -		\$ -		\$ -

Capacity - Reduction					
	Oahu		Maui		Hawaii
Levelized Grid Services (\$/kW)	#DIV/0!		#DIV/0!		#DIV/0!
Total Contract Capability (kW)	0		0		0
Total Grid Service amount	\$ -		\$ -		\$ -
Total Contract Amount (Aggregator Cost)	\$ -		\$ -		\$ -
Total Customer Incentives	\$ -		\$ -		\$ -

Pricing - Oahu

Fast Frequency Response	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)

Capacity - Build	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	3	3	3	\$/((kW*Month)

Capacity - Reduction	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing - Maui

Fast Frequency Response	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)

Capacity - Build	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	3	3	3	\$/((kW*Month)

Capacity - Reduction	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Pricing - Hawaii

Fast Frequency Response	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)

Capacity - Build	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	3	3	3	\$/((kW*Month)

Capacity - Reduction	Residential	Small & Medium Business	Commercial & Industrial	Unit
	Monthly Management Price			
Enablement Price				\$/kW
Monthly Incentive Adder Price				\$/((kW*Month)
Monthly Minimum Incentive	5	5	5	\$/((kW*Month)
Energy Incentive Price*				\$/kWh

*If resource is based on a fuel-based resource (ex. generator), the energy incentive price may be applied to have the fuel cost paid back as a pass through.

Contract Capability (Monthly) - Oahu

Month	Oahu FFR			Oahu Capacity Build			Oahu Capacity Reduction		
	Contract Capability [kW]			Contract Capability [kW]			Contract Capability [kW]		
	Res.	SMB	C&I	Res.	SMB	C&I	Res.	SMB	C&I
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Note:

1. FFR - Fast Frequency Response
2. Res. - Residential Customers
3. SMB - Small and Medium Business Customers
4. C&I - Commercial & Industrial Business Customers

Contract Capability (Monthly) - Maui

Month	Maui FFR			Maui Capacity Build			Maui Capacity Reduction		
	Contract Capability [kW]			Contract Capability [kW]			Contract Capability [kW]		
	Res.	SMB	C&I	Res.	SMB	C&I	Res.	SMB	C&I
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2									
3									
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- Note:
1. FFR - Fast Frequency Response
 2. Res. - Residential Customers
 3. SMB - Small and Medium Business Customers
 4. C&I - Commercial & Industrial Business Customers

Contract Capability (Monthly) - Hawaii

Month	Hawaii FFR			Hawaii Capacity Build			Hawaii Capacity Reduction		
	Contract Capability [kW]			Contract Capability [kW]			Contract Capability [kW]		
	Res.	SMB	C&I	Res.	SMB	C&I	Res.	SMB	C&I
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									
32									
33									
34									
35									
36									
37									
38									
39									
40									
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									
51									
52									
53									
54									
55									
56									
57									
58									
59									
60									

- Note:
1. FFR - Fast Frequency Response
 2. Res. - Residential Customers
 3. SMB - Small and Medium Business Customers
 4. C&I - Commercial & Industrial Business Customers

Calculation - Oahu Fast Frequency Response

Month	Oahu FFR										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)	
	Residential			Small & Medium Business			Commercial & Industrial							
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$					
1	0	0	0	0	0	0	0	0	0	0				
2	0	0	0	0	0	0	0	0	0	0				
3	0	0	0	0	0	0	0	0	0	0				
4	0	0	0	0	0	0	0	0	0	0				
5	0	0	0	0	0	0	0	0	0	0				
6	0	0	0	0	0	0	0	0	0	0				
7	0	0	0	0	0	0	0	0	0	0				
8	0	0	0	0	0	0	0	0	0	0				
9	0	0	0	0	0	0	0	0	0	0				
10	0	0	0	0	0	0	0	0	0	0				
11	0	0	0	0	0	0	0	0	0	0				
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
13	0	0	0	0	0	0	0	0	0	0				
14	0	0	0	0	0	0	0	0	0	0				
15	0	0	0	0	0	0	0	0	0	0				
16	0	0	0	0	0	0	0	0	0	0				
17	0	0	0	0	0	0	0	0	0	0				
18	0	0	0	0	0	0	0	0	0	0				
19	0	0	0	0	0	0	0	0	0	0				
20	0	0	0	0	0	0	0	0	0	0				
21	0	0	0	0	0	0	0	0	0	0				
22	0	0	0	0	0	0	0	0	0	0				
23	0	0	0	0	0	0	0	0	0	0				
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
25	0	0	0	0	0	0	0	0	0	0				
26	0	0	0	0	0	0	0	0	0	0				
27	0	0	0	0	0	0	0	0	0	0				
28	0	0	0	0	0	0	0	0	0	0				
29	0	0	0	0	0	0	0	0	0	0				
30	0	0	0	0	0	0	0	0	0	0				
31	0	0	0	0	0	0	0	0	0	0				
32	0	0	0	0	0	0	0	0	0	0				
33	0	0	0	0	0	0	0	0	0	0				
34	0	0	0	0	0	0	0	0	0	0				
35	0	0	0	0	0	0	0	0	0	0				
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
37	0	0	0	0	0	0	0	0	0	0				
38	0	0	0	0	0	0	0	0	0	0				
39	0	0	0	0	0	0	0	0	0	0				
40	0	0	0	0	0	0	0	0	0	0				
41	0	0	0	0	0	0	0	0	0	0				
42	0	0	0	0	0	0	0	0	0	0				
43	0	0	0	0	0	0	0	0	0	0				
44	0	0	0	0	0	0	0	0	0	0				
45	0	0	0	0	0	0	0	0	0	0				
46	0	0	0	0	0	0	0	0	0	0				
47	0	0	0	0	0	0	0	0	0	0				
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
49	0	0	0	0	0	0	0	0	0	0				
50	0	0	0	0	0	0	0	0	0	0				
51	0	0	0	0	0	0	0	0	0	0				
52	0	0	0	0	0	0	0	0	0	0				
53	0	0	0	0	0	0	0	0	0	0				
54	0	0	0	0	0	0	0	0	0	0				
55	0	0	0	0	0	0	0	0	0	0				
56	0	0	0	0	0	0	0	0	0	0				
57	0	0	0	0	0	0	0	0	0	0				
58	0	0	0	0	0	0	0	0	0	0				
59	0	0	0	0	0	0	0	0	0	0				
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
5yr Avg.											0	0	0	#DIV/0!

Calculation - Oahu Capacity Build

Oahu Capacity Build												
Month	Residential			Small & Medium Business			Commercial & Industrial			Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$			
1	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.										0	0	#DIV/0!

Calculation - Oahu Capacity Reduction

of Events 200

Month	Oahu Capacity Reduction										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Residential			Small & Medium Business			Commercial & Industrial						
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$				
1	0	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.											0	0	#DIV/0!

Calculation - Maui Fast Frequency Response

Month	Maui FFR										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Residential			Small & Medium Business			Commercial & Industrial						
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$				
1	0	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.											0	0	#DIV/0!

Calculation - Maui Capacity Build

Maui Capacity Build												
Month	Residential			Small & Medium Business			Commercial & Industrial			Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$			
1	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.										0	0	#DIV/0!

Calculation - Maui Capacity Reduction

of Events 200

Month	Maui Capacity Reduction										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Residential			Small & Medium Business			Commercial & Industrial						
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$				
1	0	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.											0	0	#DIV/0!

Calculation - Hawaii Fast Frequency Response

Month	Hawaii FFR										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)	
	Residential			Small & Medium Business			Commercial & Industrial							
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$					
1	0	0	0	0	0	0	0	0	0	0				
2	0	0	0	0	0	0	0	0	0	0				
3	0	0	0	0	0	0	0	0	0	0				
4	0	0	0	0	0	0	0	0	0	0				
5	0	0	0	0	0	0	0	0	0	0				
6	0	0	0	0	0	0	0	0	0	0				
7	0	0	0	0	0	0	0	0	0	0				
8	0	0	0	0	0	0	0	0	0	0				
9	0	0	0	0	0	0	0	0	0	0				
10	0	0	0	0	0	0	0	0	0	0				
11	0	0	0	0	0	0	0	0	0	0				
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
13	0	0	0	0	0	0	0	0	0	0				
14	0	0	0	0	0	0	0	0	0	0				
15	0	0	0	0	0	0	0	0	0	0				
16	0	0	0	0	0	0	0	0	0	0				
17	0	0	0	0	0	0	0	0	0	0				
18	0	0	0	0	0	0	0	0	0	0				
19	0	0	0	0	0	0	0	0	0	0				
20	0	0	0	0	0	0	0	0	0	0				
21	0	0	0	0	0	0	0	0	0	0				
22	0	0	0	0	0	0	0	0	0	0				
23	0	0	0	0	0	0	0	0	0	0				
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
25	0	0	0	0	0	0	0	0	0	0				
26	0	0	0	0	0	0	0	0	0	0				
27	0	0	0	0	0	0	0	0	0	0				
28	0	0	0	0	0	0	0	0	0	0				
29	0	0	0	0	0	0	0	0	0	0				
30	0	0	0	0	0	0	0	0	0	0				
31	0	0	0	0	0	0	0	0	0	0				
32	0	0	0	0	0	0	0	0	0	0				
33	0	0	0	0	0	0	0	0	0	0				
34	0	0	0	0	0	0	0	0	0	0				
35	0	0	0	0	0	0	0	0	0	0				
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
37	0	0	0	0	0	0	0	0	0	0				
38	0	0	0	0	0	0	0	0	0	0				
39	0	0	0	0	0	0	0	0	0	0				
40	0	0	0	0	0	0	0	0	0	0				
41	0	0	0	0	0	0	0	0	0	0				
42	0	0	0	0	0	0	0	0	0	0				
43	0	0	0	0	0	0	0	0	0	0				
44	0	0	0	0	0	0	0	0	0	0				
45	0	0	0	0	0	0	0	0	0	0				
46	0	0	0	0	0	0	0	0	0	0				
47	0	0	0	0	0	0	0	0	0	0				
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
49	0	0	0	0	0	0	0	0	0	0				
50	0	0	0	0	0	0	0	0	0	0				
51	0	0	0	0	0	0	0	0	0	0				
52	0	0	0	0	0	0	0	0	0	0				
53	0	0	0	0	0	0	0	0	0	0				
54	0	0	0	0	0	0	0	0	0	0				
55	0	0	0	0	0	0	0	0	0	0				
56	0	0	0	0	0	0	0	0	0	0				
57	0	0	0	0	0	0	0	0	0	0				
58	0	0	0	0	0	0	0	0	0	0				
59	0	0	0	0	0	0	0	0	0	0				
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
5yr Avg.											0	0	0	#DIV/0!

Calculation - Hawaii Capacity Build

Hawaii Capacity Build												
Month	Residential			Small & Medium Business			Commercial & Industrial			Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$			
1	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.										0	0	#DIV/0!

Calculation - Hawaii Capacity Reduction

of Events 200

Month	Hawaii Capacity Reduction										Cumulative Capability (kW)	Total Cost (\$)	Levelized Cost (\$/kW)
	Residential			Small & Medium Business			Commercial & Industrial						
	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$	Mgmt. \$	Enable. \$	Inc. \$				
1	0	0	0	0	0	0	0	0	0	0			
2	0	0	0	0	0	0	0	0	0	0			
3	0	0	0	0	0	0	0	0	0	0			
4	0	0	0	0	0	0	0	0	0	0			
5	0	0	0	0	0	0	0	0	0	0			
6	0	0	0	0	0	0	0	0	0	0			
7	0	0	0	0	0	0	0	0	0	0			
8	0	0	0	0	0	0	0	0	0	0			
9	0	0	0	0	0	0	0	0	0	0			
10	0	0	0	0	0	0	0	0	0	0			
11	0	0	0	0	0	0	0	0	0	0			
12	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
13	0	0	0	0	0	0	0	0	0	0			
14	0	0	0	0	0	0	0	0	0	0			
15	0	0	0	0	0	0	0	0	0	0			
16	0	0	0	0	0	0	0	0	0	0			
17	0	0	0	0	0	0	0	0	0	0			
18	0	0	0	0	0	0	0	0	0	0			
19	0	0	0	0	0	0	0	0	0	0			
20	0	0	0	0	0	0	0	0	0	0			
21	0	0	0	0	0	0	0	0	0	0			
22	0	0	0	0	0	0	0	0	0	0			
23	0	0	0	0	0	0	0	0	0	0			
24	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
25	0	0	0	0	0	0	0	0	0	0			
26	0	0	0	0	0	0	0	0	0	0			
27	0	0	0	0	0	0	0	0	0	0			
28	0	0	0	0	0	0	0	0	0	0			
29	0	0	0	0	0	0	0	0	0	0			
30	0	0	0	0	0	0	0	0	0	0			
31	0	0	0	0	0	0	0	0	0	0			
32	0	0	0	0	0	0	0	0	0	0			
33	0	0	0	0	0	0	0	0	0	0			
34	0	0	0	0	0	0	0	0	0	0			
35	0	0	0	0	0	0	0	0	0	0			
36	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
37	0	0	0	0	0	0	0	0	0	0			
38	0	0	0	0	0	0	0	0	0	0			
39	0	0	0	0	0	0	0	0	0	0			
40	0	0	0	0	0	0	0	0	0	0			
41	0	0	0	0	0	0	0	0	0	0			
42	0	0	0	0	0	0	0	0	0	0			
43	0	0	0	0	0	0	0	0	0	0			
44	0	0	0	0	0	0	0	0	0	0			
45	0	0	0	0	0	0	0	0	0	0			
46	0	0	0	0	0	0	0	0	0	0			
47	0	0	0	0	0	0	0	0	0	0			
48	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
49	0	0	0	0	0	0	0	0	0	0			
50	0	0	0	0	0	0	0	0	0	0			
51	0	0	0	0	0	0	0	0	0	0			
52	0	0	0	0	0	0	0	0	0	0			
53	0	0	0	0	0	0	0	0	0	0			
54	0	0	0	0	0	0	0	0	0	0			
55	0	0	0	0	0	0	0	0	0	0			
56	0	0	0	0	0	0	0	0	0	0			
57	0	0	0	0	0	0	0	0	0	0			
58	0	0	0	0	0	0	0	0	0	0			
59	0	0	0	0	0	0	0	0	0	0			
60	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5yr Avg.											0	0	#DIV/0!

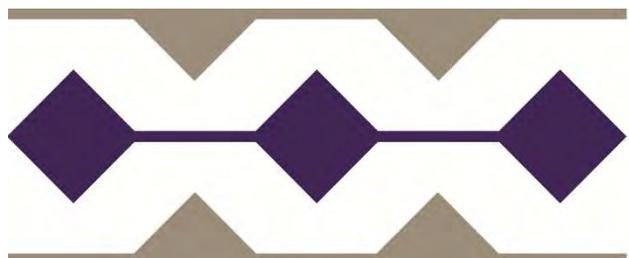
REQUEST FOR PROPOSALS
FOR
DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix N – Supplemental Review Process



**Hawaiian
Electric**

Supplemental Review Process

Suppliers intending to deliver grid service products utilizing end devices that have the potential to export power to the grid may be subject to additional technical review. This document provides clarification and guidelines for Generating Facilities that are Interconnected under an existing approved interconnection application.

Any material changes or additions made to a Generating Facility cannot be made without written consent from the Companies. However, to the extent that a Generating Facility owner, operator, or Customer-Generator wishes to participate in a DR program without making a material change to their existing Generating Facility may be afforded expedited review upon meeting certain requirements. The table below clarifies that solar photovoltaic facilities that have an approved Interconnection Agreement under the NEM, CGS, CGS+, CSS, Smart Export, or SIA programs may deliver a grid service as long as the export across the Point Of Interconnections does not exceed the limits indicated in Table 1 between the hours of 9am – 5pm. If solar photovoltaic facility is capable of export of power after 5pm (through the use of an energy storage system), the Generating Facility may do so without having to go through a Technical Review screening process as long as the export is limited to the values indicated in Table 1.

Program	NEM (including add-ons)	CGS	CGS+	CSS	Smart Export	App-IIB	SIA
9AM -5PM	Existing Program Size	Existing Program Size	Existing Program Size	0 ¹	0 ²	0 ⁴	Existing Program Size ⁵
5PM - 9AM	3kW	3kW	3kW	3kW	3kW ³	0 ⁴	3kW

Table 1: Existing Executed Interconnection Agreement Pre-Approved Net Export

¹ Participants in non-export programs will have to go through re-screening and obtain approval if exporting occurs during grid service delivery.

² The 0 export applies to smart export systems that have controls in place to prevent export between 9AM and 5PM (like a CSS, these customers received expedited technical review based on having non-export controls). Smart export systems that were approved and did not have CSS, non-export controls, may export up to the program system size during the hours of 9AM to 5PM.

³ 3 kW or Max Generation Capacity between 4PM – 9AM, whichever is greater.

⁴ App-IIB systems must file an Interconnection Application with the Company to convert to another DER program such as CSS.

⁵ Limited to 100kW or less based on current export program screening process.

If a Supplier wishes to utilize a DER for the delivery a grid service in a manner that exceeds the Pre-approved Export Participation Limit, the Companies will require a Technical Review of the Generating Facility in accordance with Tariff Rule No. 14. The Companies thought it prudent to make Suppliers aware of this requirement so that Suppliers can take these potential timelines into

account when developing a customer enrollment plan. Enrollment of DER customers with export expectations that exceed the limits noted above will not be permitted until written consent and approval is provided by the Company.

Below is an outline of the indicative data that is expected to be required for the review process.

Anticipated Data Required

- Aggregator Information
- Customer Equipment Information (derived from DER application):
- Grid Services Anticipated to be delivered
 - Demand Response Program(s) resource will subscribe to (REQUIRED)
 - DR Capability (kW)

Additionally, the following is reflective of the type of data that may be required per location/device:

FAST FREQUENCY RESPONSE	
<u>PARTICIPANT NAME</u>	
PARTICIPANT ADDRESS	
DER APPLICATION OR ACCOUNT NUMBER	
DATE OF DER PROGRAM ENROLLMENT	
CIRCUIT	
NODE	
INTERCONNECTION TYPE	
<u>MAXIMUM CAPABILITY (KW)</u>	
<u>MAXIMUM NET EXPORT DURING GS EVENT</u>	
<u>(KW)</u>	
9AM – 5PM	
5PM – 9AM	
<u>GROSS MINIMUM LOAD</u>	
<u>MAXIMUM IMPORT FOR LOAD (KW)</u>	
9AM – 5 PM	
5PM – 9AM	

CAPACITY	
<u>PARTICIPANT NAME</u>	
PARTICIPANT ADDRESS	
DER APPLICATION OR ACCOUNT NUMBER	
DATE OF DER PROGRAM ENROLLMENT	
CIRCUIT	
NODE	
INTERCONNECTION TYPE	
<u>MAXIMUM CAPABILITY (KW)</u>	
<u>MAXIMUM NET EXPORT DURING GS EVENT</u>	
<u>(KW)</u>	
9AM – 5PM	

5PM – 9PM	
<u>GROSS MINIMUM LOAD</u>	
<u>MAXIMUM IMPORT FOR LOAD (KW)</u>	
9AM – 5 PM	
5PM – 9PM	

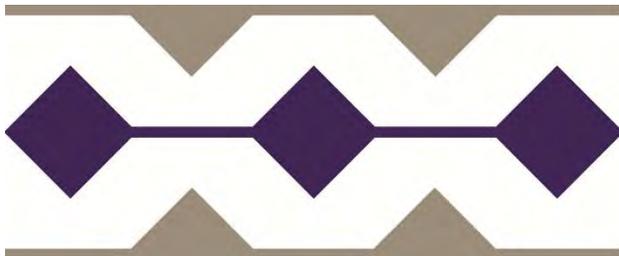
REQUEST FOR PROPOSALS
FOR
DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Appendix O – Aggregator Handbook



**Hawaiian
Electric**

This handbook describes processes required to implement and maintain data exchange and control functionality between the aggregator/supplier and the Companies. Aggregators must comply with the data exchange, control functionality, and testing requirements specified in this handbook.

Data Integration

Participant data will be provided to the Companies using a combination of comma-separated value (CSV) and extensible markup language (XML) files delivered to a secure file transfer protocol (SFTP) site. The SFTP location is unique to each aggregator and as such will be provided in advance of integration testing.

Participant Enablement Status

This section describes processes required to implement and maintain data exchange and control functionality between the Aggregator and the Companies.

Aggregator will provide the Participant Enablement File in XML format. The data contained in the Participant Enablement File describes Participants that have been enabled and enrolled, i.e. are ready to be included in the dispatch or scheduling of Supplier's Grid Services Capability.¹ A file will be provided via SFTP to the Company daily, except weekends and holidays, and will reflect enrollment changes since the previous file was provided, i.e. incremental changes. The file will also include any Participant removal (un-enrollment) from participation and during the allowed period, changes to Enabled Capability, Minimum Incentive (as impacted by Enabled Capability), and Incentive Adder (Additional Incentive).

File naming convention for enrollment data is as follows: {EnrollerId}_HECO_{Date:yyyy-MM-dd_HH-mm-ss_SSS}_enrollment.xml, for example, 100001_HECO_2018-07-13_16-59-03_089_enrollment.xml. HH represents hour in military time (0-23). In the future, if an aggregator has Participants that are customers of Maui Electric or Hawaii Electric Light, MECO or HELC respectively, a separate file would be submitted where MECO or HELC replaces HECO.

The file details, including the XML Schema Definition (XSD) are specified in Attachment A. Grid Service Program Names are specified in Attachment B.

Enrollment Transactions

There are four basic types of transactions:

1. Participant Enrollment: Customer enrolls in DR
2. Participant Un-enrollment: Customer unenrolls from DR
3. Participant Changes: Modifications to a customer's enrollment, i.e. incentives or capability
4. Participant Moves: Special case for customer move outs and move ins

¹ An enrollment (or un-enrollment) is an "EnrollmentDetailsType" as specified in Attachment A.

Participant Enrollment

Each Participant must be enrolled via the Participant Enablement File. Each program or Grid Service that Participant is enabled to participate in requires its own separate enrollment. Each meter or meters that will be impacted by participation must be enrolled in a separate enrollment.

A typical enrollment transaction would be a customer with one meter. For this typical scenario, all start dates will be the same, i.e. on the day that the customer is enrolled, the device (if applicable) is also enrolled, incentives are started and the resource capability is available. However it is not unusual for a customer to have two meters or require a second device to be enrolled in DR. For example, if a Participant has two meters at a single location and both meters will be impacted (i.e. participating in events for Grid Services) and the Participant will be participating in two Grid Services, four (4) separate enrollments will be required. See Table 1 for a conceptual representation of required enrollments.

Table 1: Conceptual enrollment for single participant with two meters, enrolled in two Grid Services

Enrollment 1	Participant 1	Meter 1	Grid Service 1
Enrollment 2	Participant 1	Meter 2	Grid Service 1
Enrollment 3	Participant 1	Meter 1	Grid Service 2
Enrollment 4	Participant 1	Meter 2	Grid Service 2

The total minimum and adder incentive for the Participant should be split appropriately between the meter enrollments for each Grid Service. All dates must be specified in “yyyy-MM-dd” format. If the Enrollment End Date is populated, when that date is reached, the Participant will be considered to no longer be participating and incentives will no longer be paid.

Participant Minimum Incentive, additional incentive, and enrollment start date must be the same for a new enrollment. Participant enrollment end date is not required for enrollment.

Participant Un-enrollment

If a Participant will no longer be participating a un-enrollment must be submitted via the Participant Enablement File. Enrollment End Date must be populated; this is the Participant’s un-enrollment date. All dates must be specified in “yyyy-MM-dd” format.

Incentive payment will automatically be prorated from the un-enrollment date. If a Participant changes address (Participant Move), but wishes to continue participating, a un-enrollment and new enrollment (with Participant’s new address) must be submitted.

Participant Changes - Updates to Participant Information

The following Participant information may only be updated during windows which will be specified by the Company:

- Incentive update: Incentive Name, Incentive Value, Incentive Start Date
- Enrolled kW: Participant Resource Capability, Participant Resource Capability Effective Start Date. Enrolled kW updates must be aligned to the start of month.

The following Participant information may be updated at any time:

- W4 Email
- Customer Name

Any change to Participant Information must use original meter and program combination Enrollment Start Date.

Participant Moves

A Participant move is treated like a un-enrollment. When a participant moves out of their premise, they should notify their Aggregator, who would then execute a Participant un-enrollment transaction. There must be a 24 hour period between a Participant move out un-enrollment and a new Participant move in enrollment to allow for assignment of a new Participant's Contract Account to the premise in the Companies' customer information system.

Enrollment Transaction Assumptions

Enrollment and Un-enrollment transactions must adhere to the following assumptions:

1. All un-enrollment transactions precede enrollment transactions in the Participant Enablement File. Enrollment and un-enrollment entries are in chronological order.
2. The original Participant Enrollment Start Date is the same for each successive enrollment transactions effecting any paired meter and program enrollment.
3. For any resource participating in the delivery of Grid Services, the load's corresponding meter is enrolled in a Grid Service program.
4. Transactions are submitted on the date that they occur or on the next business day; this is the only future dating of transactions that is permitted. Billing cycles differ for all customers, if a transaction, e.g. enrollment, unenrollment or incentive change transaction is posted after a customer is billed, then correcting the bill becomes unnecessarily complicated and confusing to the customer.
5. There is a 24 hour period between a Participant move out un-enrollment and a new Participant move in enrollment.
6. If ending an additional incentive for a Participant, a new \$0 incentive with new start date is required. A minimum incentive for a Participant should never be discontinued unless Participant is un-enrolling.
- 7.

Error Handling

The Company will contact the Aggregator regarding any failed enrollments within 48 hours of submission. The following items will result in an error and failed enrollment:

- Incorrect meter id and contract account pairing will result in a failed enrollment
- Incorrect meter id

- Enrollment with another aggregator – Participant must not be enrolled with another aggregator when enrollment is received.
- Submitted file name or contents are not in the required format.

Aggregated Operational Forecast

After the receipt and processing of the Participant Enablement File, Company expects the Participant’s Resource Capability to be included in Aggregator’s Operational Forecast; likewise if a Participant is un-enrolled, the Participants Resource Capability should no longer be included in Aggregator’s Operational Forecast.

Aggregator will submit an Operational Forecast file in CSV format as specified. The Operational Forecast represents Supplier’s Total individual Grid Service Capability for the given period. An Operational Forecast submitted in a separate file is required for each Grid Service that Supplier is contracted to provide. The Operational Forecast shall be submitted in accordance with the following attributes:

Attributes	FFR	Capacity Build	Capacity Reduction
Forecast Capability	kW/kWh	kW/kWh	kW/kWh
Forecast Term	Min 4 days	Min 4 days	Min 4 days
Data Resolution (Interval)	15 Minute	15 Minute	15 Minute
Update Timing	Hourly	1am/1pm	1am/1pm
Update Frequency	Hourly	12 hours	12 hours

Aggregator’s Operational Forecast will be provided to the Companies using a comma-separated value (CSV) file delivered to a secure file transfer protocol (FTP) site. File naming convention for the Operational Forecast is as follows:

{EnrollerId}_{GridServiceProgramName}_{Date:yyyy-MM-dd_HH-mm-ss_SSS.csv, for example, 100001_Capacity Build_2018-07-13_16-59-03_089.csv. HH represents hour in military time (0-23). In the future, if an aggregator has Participants that are customers of Maui Electric or Hawaii Electric Light, MECO or HELC respectively, a separate file would be submitted where MECO or HELC replaces HECO.

Table 2 shows the fields included in the file to be submitted by the Aggregator with the Aggregated Operational Forecast. There should be one row for each Forecast Interval End Time entry, e.g. 384 entries for 15 minute interval data for four (4) days. KW and kWh can be included in the same file. The values/columns shall be in the order specified in Table 2.

Table 2: Operational Forecast Format

Field Name	Format	Values/Comments
VEN ID	String	ID of the Aggregator’s VEN for this Grid Service Program. Assigned by the VTN to the VEN at the time of provisioning.

Enroller Id	Char 16	ID for the Aggregator who is providing the forecast. ID will be provided by the Companies.
Grid Service Program Name	String	Grid Service program name as provided by the Companies in Attachment B. Aggregator will have 1 VEN per Grid Service.
Forecast Unit of Measure	String	Identifier of the type of forecast value being provided. Two (2) possible values: <ul style="list-style-type: none"> • Aggregate Operational Forecast KWH 15 Minute • Aggregate Operational Forecast KW 15 Minute
Forecast Interval End Time	Date/Time	End of interval timestamp for the forecast value. MM/DD/YYYY HH:MM where HH is a 24 hour (0-23) format.
Forecast Value	Real	Aggregator’s operational forecast capability (shed) aggregated for all their enrolled customers in this Grid Service. This will be reported as a positive number.

Forecast Assumptions

Operational Forecast must adhere to the following assumptions:

1. Forecast interval end times are aligned to the interval length and hour. For example, 1:15, not 1:17 for a 15 minute interval forecast.
2. The Field Names are required as headers in each file submitted.
3. No spaces are allowed in the title of the files.

Error Handling

The import of the aggregator operational forecast will fail if the VEN ID and Enroller Id pairing is incorrect or the submitted file name or contents are not in the required format. If there is an error, the last submitted operational forecast will be used as the current Operational Forecast.

A single granularity for the Operational Forecast is required, i.e. aggregators may not provide both 5 minute forecast and 15 minute forecast for a single Grid Service.

Participant Energy Reduction Incentive Data

For Participants receiving an Energy Reduction Incentive (ERI), Aggregator Supplier will submit a Participant Incentives File in CSV format as specified herein. ERI should only be calculated and provided for Participant’s that participated in events in the previous month. Participants who are enrolled but did not participate in any events in the previous month should not be included in the Participant Incentives File, i.e. no \$0 incentive payments should be included in the file. Aggregator must submit the incentive file by 7th day of the month for Participant energy reduction in the previous month.

File naming convention for enrollment data is as follows: {EnrollerId}_HECO_{Date:yyyy-MM-dd_HH-mm-ss_SSS}.csv, for example, 100001_HECO_2018-07-13_16-59-03_089.csv HH represents hour in military time (0-23). In the future, if an aggregator has Participants that are customers of Maui Electric or Hawaii Electric Light, MECO or HELC respectively, a separate file would be submitted where MECO or HELC replaces HECO.

Table 3 shows the fields to be included in the file submitted by the Aggregator with the monthly ERI payments to be made for their Participants. The format will be a CSV file. The values/columns shall be in the order described in following table.

Table 3: Participant Incentives File Format

Field Name	Format	Values/Comments
EnrollerID	Char 16	ID for the Aggregator who has enrolled the customer. ID will be provided by the Companies.
Contract Account	Char 12	Participant's Account No. to which this incentive should be applied. Must match account number supplied with Participant's enrollment.
Utility Contract	Char 10	Contract No. from Participant bill. Contact to which this incentive applies
Grid Service Program Name	String	Grid Service program name as provided by the Companies in Attachment B. Program Name must match the value sent by the Aggregator with Participant's enrollment.
Incentive Type	String	Must be Energy. This indicates the type of incentive.
Incentive Month	Date	Month to which the incentive applies in the following format: MM/YYYY.
Incentive Amount	Real	Monthly incentive amount for this incentive type to be paid to customer. No currency sign should be provided.

ERI Assumptions

ERI must adhere to the following assumptions:

1. Customer Utility Contract number must be 10 digits, if Utility Contract number is fewer than 10 digits, it must be padded with preceding zeroes.
2. The Field Names are required as headers in each file submitted.
3. No spaces are allowed in the title of the files.

Error Handling

The Company will contact the aggregator regarding any failed enrollments within 48 hours of submission. The following items will result in an error and failed import:

- Participant's Contract Account No. provided is not enrolled.
- Participant Account and Contract No. pairing are invalid or does not match an enrolled Participant.
- Participant is not enrolled in Grid Service program that allows energy payment, e.g. FFR.
- The Participant's Contract Account is not associated with the Aggregator as of the Incentive Month.
- Submitted file name or contents are not in the required format.

FFR Certification and Testing

Supplier must demonstrate to the Company compliance with FFR response timing and accuracy requirements. Demonstration may be performed through observed testing using appropriate testing equipment, manufacturer documentation, or a report documenting operation that resources are activated within the specified period.

A monthly FFR manual dispatch test event will be performed by the Companies. For the test, resources enrolled in FFR must be activated using the same method as the autonomous frequency response. The FFR test event duration will be a minimum of 15 minutes and a maximum of 30 minutes. At the end of the test event, the aggregated resource must ramp out of the event as required for FFR.

Other Data Requirements

As specified in the GSPA, Aggregators are required to provide the data necessary to validate the Grid Service delivery.

Data for Verification of Delivery

The format for reporting all data is provided in Attachment D.

Participant Incentive and Capability Report (PIC)

The PIC is submitted as a *.CSV file and reports the following information on a per Customer basis:

- Account Number
- Contract Number
- Meter Number
- Customer Segment (Residential, SMB, C&I)
- Customer Schedule (R,G,J,P,DS)
- Participant Island
- Enabled Capability [kW] (per grid service)
- Minimum Incentive [\$] (per grid service)
- Incentive Adder [\$] (per grid service)
- Energy Delivered (kWh) (for Capacity)

Monthly Invoice Report (MIR)

The MIR is submitted on a per island, per Grid Service and per Customer segment basis and consists of multiple *.CSV files containing the following information in a format prescribed by the Companies.

- Monthly Committed Forecast in 15 min intervals
- Monthly Settlement Capability for Settlement Month
- Event Performance Factors for each event in the Settlement Month
- Monthly Performance Factor (Average of performance factors in Settlement Month)
- Monthly Settlement Factor (Based on previous 6 months, see Exhibit K – Settlement)
- Number of Events per Settlement Month

End-use Data

Upon request from the Company, the Aggregator may also be required to deliver the following data:

- All data (on an aggregated level) used for the calculation of performance factors for the Settlement Month; including,
 - Baseline calculations
 - Demand values preceding events (as applicable)End device data and associated baseline calculations from all participating Resources used for the calculation of any performance factors

DRMS Grid Service Delivery System (“GSDS”) Integration Testing

As specified in Exhibit G of the GSPA, integration of Aggregator’s GSDS requires two tests: A) Data Integration Test and B) Grid Service Dispatch Test. Testing plans will be developed in coordination with Companies and agreed to by the Aggregator and the Company.

Data Integration Test

The Data Integration Test requires testing each enrollment transaction. Attachment C specifies each transaction that must be tested. Transaction scenario testing must be executed in the following order:

- 1) All enrollments
- 2) Participant Changes/Enrollment Corrections
- 3) Participant Moves (move out)
- 4) Participant Moves (move in)
- 5) All un-enrollments

Grid Services Dispatch Test

The Grid Services Dispatch Test will be performed using OpenADR 2.0b.

OpenADR Requirements

The Companies’ VTN is OpenADR 2.0 B profile (OpenADR2.0b) certified. The Companies require that all VENs connecting to the Companies VTN be OpenADR 2.0b certified. OpenADR Certification means that VTNs and VENs have undergone OpenADR testing and conform to the current OpenADR interface specification. The OpenADR Alliance manages the

OpenADR certification process² and the OpenADR 2.0 (A and B) Profile Specification (OpenADR Specification).³ One OpenADR 2.0b VEN is required to enable delivery of Grid Services. The Companies require one VEN for each Grid Service to be delivered. The VEN may be a software or hardware VEN.

Security and Security Certificates

OpenADR requires VTN and VEN digital certificates to authenticate communication links. VEN certificates will be embedded on the VEN by the manufacturer or the VEN purchaser will be required to contact the manufacturer to obtain the certificate. The Certificate Authority for OpenADR is Kyrio (previously NetworkFX).⁴ The fingerprint file for the VEN which is provided with the VEN zip package from Kyrio, must be provided to the Companies for each VEN prior to provisioning.

Data and Event Signal Details

Capability in kW shall be made available for polling by the DERMS every five (5) minutes using the OpenADR 2.0b Data Reports TELEMETRY_USAGE. During a GS Event, TELEMETRY_USAGE shall reflect Capability. The OpenADR SignalPayload will be SIMPLE, specific SignalPayload value will depend on the finalization of the design and implementation of the DERMS. Table 4 presents OpenADR parameters/configuration is required:

Table 4: OpenADR Parameters

	Configuration/ Parameter	DRMS Value
Event Signals	SignalPayload	1 (MODERATE)
	SignalName	SIMPLE
	SignalType	level
	marketContext	Name of Grid Service program
	Priority	1
VEN Information	Resource ID	N/A, Defaults to wildcard
	Poll rate for event signal	1 minute
	Poll rate for report	5 minute
	VTN URL	https://drmsvtn.hawaiianelectric.com
	VTN ID	DERMS
	VEN ID	Provided by Company
Opt Responses	optType	Optin
Reporting	Report type	Usage
	ReportName	TELEMETRY_USAGE
	Rid	powerReal
	Rid	energyReal

² <https://www.openadr.org/certification-process>

³ <https://www.openadr.org/specification>

⁴ <https://www.openadr.org/cyber-security>

Provisioning Process

The VEN ID is defined in advance by the Companies and provided to Customer/Manufacturer. The Customer/Manufacturer must provide the VEN Fingerprint to the Companies prior to provisioning. The VEN Fingerprint is SHA-256, 10 octets in the fingerprint text file from Kyrio.

VEN from new manufacturer or new model

The VEN will initially be provisioned for testing against the Companies test VTN, <https://testdrmsvtn.hawaiianelectric.com> using a test OpenADR certificate. The VEN test certificate SHA-256 fingerprint (provided by Manufacturer or Kyrio) must be provided in advance to the Companies. Upon registration request from the VEN, the fingerprint information is validated with the test DRMS. The Companies will configure the VEN on the test DRMS to participate in events and will issue events to the VEN.

Provisioning steps:

1. Aggregator will provide the fingerprint information to the Companies. The Companies will provide the VEN ID to the Aggregator.
2. Aggregator will configure and connect the VEN to the internet. Aggregator will ensure network connectivity to the internet.
3. The Companies will add the VEN to the test DRMS and coordinate the performance of a test event where Grid Services are not delivered. The Aggregator must demonstrate (e.g. provide logs from the VEN) to the Companies that the VEN received the event. The Companies will also request the following tests to be performed/demonstrated:
 - a. Power cycle or loss of VEN communications and re-establishment connection to the VTN, including during an event
 - b. Opt out of event when opt out requested
 - c. Delivery of Telemetry_Usage reports
4. After a successful testing in step 3, the Aggregator and the Companies will coordinate the connection of the VEN to the production DRMS. The Companies will then perform a Grid Service Dispatch Test in accordance with the Program Rules or contract.

VEN model previously provisioned

The VEN will be provisioned against the production DRMS VTN. Upon registration request from the VEN, the fingerprint information is validated with the VTN. The VEN must be configured in accordance with Table 1 above unless specified below. If the Aggregator has successfully provisioned their VEN to the production DRMS and is provisioning a VEN for a different Grid Service, the following steps would be used.

Provisioning steps:

1. The Aggregator will provide the fingerprint information to the Companies. The Companies will provide the VEN ID to the Aggregator.
2. Aggregator will configure and connect the VEN to the internet. The Aggregator will test network connectivity to the internet.
3. The Companies will add the VEN to the DRMS and coordinate the performance of a performance of a test event where Grid Services are not delivered. The Aggregator must demonstrate (e.g. provide logs from the VEN) to the Companies that the VEN received the event and would have controlled the appropriate customer resources.
4. After a successful testing in step 3, the Aggregator and the Companies will coordinate the connection of the VEN to the production DRMS. The Companies will then perform a Grid Service Dispatch Test.

VEN Provisioning Assumptions

VEN provisioning must adhere to the following assumptions:

1. The VEN must re-register on power cycle.
2. Each Grid Service delivered by the Aggregator is represented by its own VEN

Support Obligations

Aggregator must operate their GSDS in accordance with Service Level Agreement.

Aggregator will be provided with access to DRMS Portal where VEN's may be scheduled out of service and event notifications can be configured. For Maintenance and Emergency Downtime, affected VENs should be scheduled as unavailable (opted out) via the DRMS Portal.

Aggregator needs to provide street address and phone number for business, plus for contact help desk – this would go in the handbook.

Enrollment

Field	Required	Values	Comments
Enroller Id	Yes		Assigned by HECO (required if NOT Direct)
Enroller Type	Yes	Aggregator, Service Provider, Direct	
Contract Account Number	Yes		Account number from Participant bill
Meter Id	No		Meter # from Participant bill
W4 Email	No		
Customer Name	Yes		First name last name
Service Address	Yes		
GS Program Name	Yes		Program name as provided by Company
End Use Type	No	WH, AC, ES, EV, etc	required if NOT aggregator
Device Type	No	Yukon, OpenADR	required if NOT aggregator
Device model	No		required if NOT aggregator
Device Serial Number	No		required if NOT aggregator
Device Installation Date	No		required if NOT aggregator
Device Enrollment Start Date	No		required if NOT aggregator
Device Enrollment End Date	No		required if NOT aggregator
Device Fingerprint	No		OpenADR fingerprint (required if OpenADR device)
Participant Resource Capability	Yes		Enabled Capability [kW]
Participant Resource Capability Effective Start Date	Yes		Enabled Capability Effective start date
Enrollment Start Date	Yes		Meter/customer enrollment start date
Enrollment End Date	No		
Incentive name	Yes	MINIMUM_INCENTIVE, ADDITIONAL_INCENTIVE	Minimum incentive, Additional incentive, etc
Incentive value	Yes		How much incentive
Incentive Start Date	Yes		Incentive effective start date

De-Enrollment

Field	Required	Values	Comments
Enroller Id	No		Assigned by HECO (required if NOT Direct)
Enroller Type	Yes	Aggregator, Service Provider, Direct	
Contract Account Number	Yes		Account number
Meter Id	No		Required if NOT Honeywell
W4 Email	No		Email to send W4 to
Customer Name	Yes		This is to help trouble shoot if contract acct # was fat figured
Service Address	Yes		This is to help trouble shoot if contract acct # was fat figured
GS Program Name	Yes	FFR Residential, FFR Small Business, Peak Reduction SBDLC AC, Peak Reduction SBDLC WH, Replacement Reserve RDLC AC, Replacement Reserve RDLC WH, etc	
End Use Type	No	WH, AC, ES, EV, etc	required if NOT aggregator
Device Type	No	Yukon, OpenADR	required if NOT aggregator
Device model	No		required if NOT aggregator
Device Serial Number	No		required if NOT aggregator

Appendix O – Attachment A Aggregator Enrollment Specification

Device Installation Date	No		required if NOT aggregator
Device Enrollment Start Date	No		required if NOT aggregator
Device Enrollment End Date	No		required if NOT aggregator
Device Fingerprint	No		OpenADR fingerprint (required if OpenADR device)
Participant Resource Capability	No		Nominated Load
Participant Resource Capability Effective Start Date	No		Nominated Load Effective start date
Enrollment Start Date	Yes		Meter/customer enrollment start date
Enrollment End Date	Yes		
Incentive name	No	MINIMUM_INCENTIVE, ADDITIONAL_INCENTIVE	Minimum incentive, Additional incentive, etc
Incentive value	No		How much incentive
Incentive Start Date	No		Incentive effective start date

*note

1. All dates will be in the “yyyy-MM-dd” format
2. File name must be in this format: {EnrollerId}_{OrgName}_{Date:yyyy-MM-dd_HH-mm-ss_SSS}_enrollment.xml

Ex: 100001_HECO_2018-07-13_16-59-03_089_enrollment.xml

Note: HH represents hour in military time (0-23)

Capacity Build
Capacity Reduction
Commissioning Program
FFR
FFR Commercial
FFR Residential
FFR Small Business
Monthly FFR Test
PV Curtailment CGS+
Peak Reduction CIDLC
Peak Reduction SBDLC AC
Peak Reduction SBDLC WH
Replacement Reserve
Replacement Reserve FastDR 40
Replacement Reserve FastDR 80
Replacement Reserve RDLC AC
Replacement Reserve RDLC Upro
Replacement Reserve RDLC WH

Ex.	Application	Transaction Type	Transaction	Participant Enrollment Start Date	Participant Enrollment End Date	Device Enrollment Start Date	Device Enrollment End Date	Device Installation OR Participant Move In Date	Device Removal OR Participant Move Out Date	Resource Capability Start Date	Incentive Start Date (Minimum or Additional)
1	HW/SP	Enrollment	Participant A Enrollment has 1 meter (Meter 1) and 1 device (Device 1) to enroll in Program X	Current date	N/A	Must be same or after Participant Enrollment Start AND Device Installation Date	N/A	Must be same or prior to Device Enrollment Start Date AND Participant Enrollment Start Date	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
2	SP	Enrollment	Same Participant A enrolls same device (Device 1) in a different program, Program Y.	Current date	N/A	Must be same or after Participant Enrollment Start Date AND Device Installation Date	N/A	Must be same or prior to Participant Enrollment Start Date AND since device is already installed must match Device Installation Date on first enrollment for device	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
3	HW/SP	Enrollment	Same Participant A enrolls a new, second device (Device 2) under Meter 1 in previously enrolled program, Program X	Must match Participant Enrollment Start Date used for first enrollment in Program X (#1)	N/A	Must be same or after Participant Enrollment Start Date AND after Device Enrollment Start Date used for first device	N/A	Must be same or prior to Device Enrollment Start Date AND Participant Enrollment Start Date	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
4	SP	Enrollment	Same Participant A enrolls 2nd meter (Meter 2) and a new device (Device 3) in Program Y	Current date	N/A	Must be same or after Participant Enrollment Start AND Device Installation Date	N/A	Must be same or prior to Device Enrollment Start Date AND Participant Enrollment Start Date	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
5	SP	Enrollment	Same Participant A enrolls a new, second device (Device 4) under Meter 2 in Program Y (assumes first meter and device already enrolled in Program Y)	Must match Participant Enrollment Start Date used for first enrollment in Program Y (#4)	N/A	Must be same or after Participant Enrollment Start Date AND Device Installation Date	N/A	Must be same or prior to Device Enrollment Start Date AND Participant Enrollment Start Date	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
X1	SP	Enrollment	Participant B Enrollment Device 1B under Meter 1B in Program Z	Current date	N/A	Must be same or after Participant Enrollment Start AND Device Installation Date	N/A	Must be same or prior to Device Enrollment Start Date AND Participant Enrollment Start Date	N/A	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
X2	SP	Enrollment	Same Participant B has 2nd meter (Meter 2B) to enroll 2nd meter in Program Z (No devices to enroll; special case: enroll 2 meters and one device)	Must match Participant Enrollment Start Date used for first enrollment in Program Y (#X+E142)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	SP	Unenrollment	Same Participant A unenrolls Device 4 from under Meter 2 in Program Y (Device 3 and Meter 2 remain enrolled in Program Y) (Device 4 is removed)	Must match Participant Enrollment Start Date used for first enrollment in Program Y (#4)	N/A	Must match Device 4 Device Enrollment Start Date used for enrollment in Program Y (#5)	Current date	Must match Device 4 Device Installation Date used for initial installation of device (#5)	Must be same or after Device Enrollment Stop Date	N/A	N/A
7	SP	Unenrollment	Same Participant A unenrolls Device 3 under Meter 2 from Program Y (Device 3 is that last enrollment is Program Y for Meter 2)	Must match Participant Enrollment Start Date used for first enrollment in Program Y (#4)	Current date	Must match Device 3 Device Enrollment Start Date used for enrollment in Program Y (#4)	Must be same or prior to Participant Enrollment End Date	Must match Device 3 Device Installation Date used for initial installation of device (#4)	N/A	N/A	N/A
8	SP	Unenrollment	Same Participant A unenrolls Device 2 under Meter 1 from Program X (Device 2 is removed)	Must match Participant Enrollment Start Date used for first enrollment in Program X (#1)	N/A	Must match Device 2 Device Enrollment Start Date used for enrollment in Program X (#3)	Current date	Must match Device 2 Device Installation Date used initial installation of device (#3)	Must be same or after Device Enrollment Stop Date	N/A	N/A
9	SP	Unenrollment	Same Participant A unenrolls Device 1 under Meter 1 from Program Y	Must match Participant Enrollment Start Date used for first enrollment in Program X (#2)	Current date	Must match Device 1 Device Enrollment Start Date used for enrollment in Program Y (#2)	Must be same or prior to Participant Enrollment End Date	Must match Device 1 Device Installation Date used for initial installation of device (#1)	N/A	N/A	N/A
10	SP	Unenrollment	Same Participant A unenrolls Device 1 under Meter 1 from Program X (Device 1 is removed)	Must match Participant Enrollment Start Date used for first enrollment in Program X (#1)	Current date	Must match Device 1 Device Enrollment Start Date used for enrollment in Program Y (#1)	Must be same or prior to Participant Enrollment End Date	Must match Device 1 Device Installation Date used for initial installation of device (#1)	Must be same or after Device Enrollment Stop Date	N/A	N/A
X3	SP	Unenrollment	Participant B unenroll 2nd meter (Meter 2B) in Program Z (No devices to enroll; special case: enroll 2 meters and one device)	Must match Participant Enrollment Start Date used for first enrollment in Program Z (#X2)	Current date	N/A	N/A	N/A	N/A	N/A	N/A
X4	SP	Unenrollment	Same Participant B unenrolls Device 1B under Meter 1B in Program Z	Must match Participant Enrollment Start Date used for first enrollment in Program Z (#X1)	Current date	Must match Device 1B Device Enrollment Start Date used for enrollment in Program Z (#X1)	Must be same or prior to Participant Enrollment End Date	Must match Device 1B Device Installation Date used for enrollment in Program Z (#X1)	Must be same or after Device Enrollment Stop Date	N/A	N/A
HW/SP	Device Removal/Replacement	Device Removal & Unenrollment	Device Removal & Unenrollment	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	Current date	Must match Device Enrollment Start Date used for device's initial enrollment in Program	Must be same or prior to Participant Enrollment End Date	Must match Device Installation Date used for initial installation of device	Must be same or after Device Enrollment Stop Date	N/A	N/A
HW/SP	Device Removal/Replacement	Device Removal (for Device Replacement)	Device Removal (for Device Replacement)	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	N/A	Must match Device Enrollment Start Date used for device's initial enrollment in Program	Current date	Must match Device Installation Date used for initial installation of device	Must be same or after Device Enrollment Stop Date	N/A	N/A
11	HW/SP	Device Removal/Replacement	Device Install (for Device Replacement)	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	N/A	Must be 24 hours after Device Enrollment End Date from device removal (#11)	N/A	Must be same or prior to Device Enrollment Start Date	N/A	Must be same as Device Enrollment Start Date	Must be same as Device Enrollment Start Date
12	Agg	Participant Moves	Participant Moves out of premise; must unenroll Participant	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	Current date	N/A	N/A	N/A	N/A	N/A	N/A
13	Agg	Participant Moves	Participant Move into premise ; must enroll Participant	Must be 24 hours after Participant Enrollment End Date of Participant that moved out (#12)	N/A	N/A	N/A	N/A	N/A	Must be same or after as Participant Enrollment Start Date	Must be same or after as Participant Enrollment Start Date
14	HW/SP	Participant Moves	Participant Moves out of premise & device remains installed (unenrollment)	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	Current date	Must match Device Enrollment Start Date used for device's initial enrollment in Program	Must be same or prior to Participant Enrollment End Date	Must match Device Installation Date used for initial installation of device or Participant Move In Date	Current date	N/A	N/A

15	HW/SP	Participant Moves	Participant Move into premise & device is already installed	Must be 24 hours after Participant Enrollment End Date of Participant that moved out (#14)	N/A	Current date	N/A	Must be same or prior to Device Enrollment Start Date; will be used as Installation Start Date for future enrollments/unenrollments/modifications for this Participant	N/A	Must be same or after as Device Enrollment Start Date	Must be same or after as Device Enrollment Start Date
16	HW/SP	Participant Moves	Owner Move in after Tenant Move out (#14 unenroll of Tenant) Special Case: If Owner is COM will need to be enrolled in SBDLC program	Must be 24 hours after Participant Enrollment End Date of Participant that moved out (#14)	N/A	Must be same or after Participant Enrollment Start AND Participant Move In Date	N/A	Must be same as Participant Enrollment Start	N/A	Must be same or after as Device Enrollment Start Date	Must be same or after as Device Enrollment Start Date
All		Participant Changes	Incentive Modification	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	N/A	Must match Device Enrollment Start Date used for device's initial enrollment in Program	N/A	Must match Device Installation Date used for initial installation of device	N/A	N/A	Current date with updated \$ Incentive Value
All		Participant Changes	End Incentive without unenrollment (only applies to Additional Incentive)	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	N/A	Must match Device Enrollment Start Date used for device's initial enrollment in Program	N/A	Must match Device Installation Date used for initial installation of device	N/A	N/A	Current date with \$0 Incentive Value
All		Participant Changes	Capability Modification	Must match Participant Enrollment Start Date used for first enrollment of meter in Program	N/A	Must match Device Enrollment Start Date used for device's initial enrollment in Program	N/A	Must match Device Installation Date used for initial installation of device	N/A	Current date with updated Resource Capability	N/A

Ex	Transaction Type	Transaction	Customer Enrollment Start Date	Customer Enrollment End Date	Device Enrollment Start Date	Device Enrollment Stop Date
1	Enrollment	Customer A	1/14/2019	N/A	1/14/2019	N/A
2	Enrollment	Customer A	1/20/2019	N/A	1/20/2019	N/A
3	Enrollment	Customer A	1/14/2019	N/A	1/21/2019	N/A
4	Enrollment	Customer A	1/22/2019	N/A	1/22/2019	N/A
5	Enrollment	Customer A	1/22/2019	N/A	1/23/2019	N/A

Device Installation OR Customer Move In Date	Device Removal OR Customer Move Out Date	Resource Capability Start Date	Incentive Start Date
1/10/2019	N/A	1/14/2019	1/14/2019
1/10/2019	N/A	1/20/2019	1/20/2019
1/20/2019	N/A	1/21/2019	1/21/2019
1/20/2019	N/A	1/22/2019	1/22/2019
1/23/2019	N/A	1/23/2019	1/23/2019

Ex.	Application	Transaction Type	Transaction	Participant Enrollment Start Date
1	Aggregator	Enrollment	Participant A Enrollment has 1 meter (Meter 1) to enroll in Program X	Current date
2	Aggregator	Participant Changes	End Incentive without unenrollment (only applies to Additional Incentive)	Must match Participant Enrollment Start Date used for first enrollment of meter in Program
3	Aggregator	Participant Changes	Capability Modification	Must match Participant Enrollment Start Date used for first enrollment of meter in Program
4	Aggregator	Participant Moves	Participant Moves out of premise Z; must unenroll Participant	Must match Participant Enrollment Start Date used for first enrollment of meter in Program
5	Aggregator	Participant Moves	New Participant Moves into premise Z; must enroll Participant	Must be 24 hours after Participant Enrollment End Date of Participant that moved out (#3)
6	Aggregator	Unenrollment	Same Participant A unenrolls Meter 1 from Program X	Must match Participant Enrollment Start Date used for first enrollment in Program X (#1)

Participant Enrollment End Date	Resource Capability Start Date	Incentive Start Date (Minimum or Additional)
N/A	Must be same or after Participant Enrollment Start Date	Must be same or after Participant Enrollment Start Date AND Device Enrollment Start Date
N/A	N/A	Current date with \$0 Incentive Value
N/A	Current date with updated Resource Capability	N/A
Current date	N/A	N/A
N/A	Must be same or after as Participant Enrollment Start Date	Must be same or after as Participant Enrollment Start Date
Current date	N/A	N/A

End Use Data. All customers included in same file.

Aggregator ID	Assigned by the Company
Contract Account	From customer bill
Meter ID	From customer bill
Date	Date of read, MM/DD/YYYY
Time	Time of read, military time
Type	Type of end use: HEM, BMS, WH, AC, ESS, PV
Value	kW or kWh
Actual read	real

Monthly Invoice Report (MIR) - forecast. All grid services included in the same file.

Aggregator ID Assigned by the Company

Grid Service FFR, Rep Rsv, Cap-Build, Cap-Red, Reg

Date MM/DD/YYYY

Time Military time

Value kW or kWh

Forecast CFC_n

Monthly Invoice Report (MIR) -

Aggregator ID

Grid Service

Settlement Month and year

Monthly Settlement Capability

Assigned by the Company

FFR, Rep Rsv, Cap-Build, Cap-Red, Reg

e.g. 4/2018

MSC_s

Monthly Invoice Report (MIR) - event performance factor. All grid services and events included in file.

Aggregator ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time
Performance Factor	PF _{s,e}

Monthly Invoice Report (MIR) - Settlement Factor. All grid services included in file.

Aggregator ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Settlement Month and year	e.g. 4/2018
Settlement Factor	SPF _s

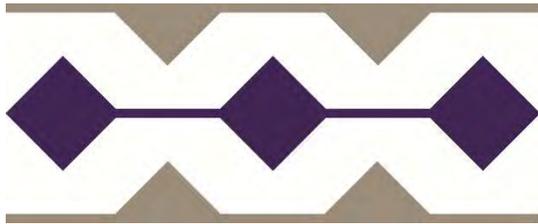
Aggregator ID	Assigned by the Company
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time

Aggregator ID	Assigned by the Company
Contract Account	From customer bill
Meter Number	From customer bill
Customer Segment	Res, SMB, C&I
Customer Schedule	R,G,J,P,DS
Participant Island	1 = Oahu, 2 = Hawaii, 3 = Maui, 4 = Lanai, 5 = Molokai
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Value	kW or kWh
Enabled Capability	E _s
Minimum Incentive	real
Incentive Adder	real
Event Date	MM/DD/YYYY
Event Start Time	Military time
Event End Time	Military time
Energy Delivered	real

Aggregator ID	Assigned by the Company
Contract Account	From customer bill
Meter Number	From customer bill
Grid Service	FFR, Rep Rsv, Cap-Build, Cap-Red, Reg
Value	kW or kWh
Date	Date of read, MM/DD/YYYY
Time	Time of read, Military time
Energy Delivered	

EXHIBIT 5

Redline of Final Renewable RFP for the Island of O'ahu
against July 26, 2019 Proposed Final Draft RFP



**Hawaiian
Electric**

~~DRAFT~~ REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

AND

ENERGY STORAGE

ISLAND OF O‘AHU

~~JULY 26~~ AUGUST 22, 2019

Docket No. 2017-0352

Table of Contents

Chapter 1: Introduction and General Information	1
1.1 Authority and Purpose of the Request for Proposals	2
1.2 Scope of the RFP	3
1.3 Competitive Bidding Framework	6
1.4 Role of the Independent Observer	6
1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual.....	7
1.6 Company Contact for Proposals	8
1.7 Proposal Submittal Requirements.....	8
1.8 Proposal Fee.....	9
1.9 Procedures for the Self-Build or Affiliate Proposals	10
1.10 Dispute Resolution Process.....	12
1.11 No Protest or Appeal.....	13
1.12 Modification or Cancellation of the Solicitation Process	13
Chapter 2: Resource Needs and Requirements	14
2.1 Performance Standards	14
2.2 Transmission System	14
2.3 Interconnection to the Company System	15
Chapter 3: Instructions to Proposers	17
3.1 Schedule for the Proposal Process	17
3.2 Company RFP Website / Electronic Procurement Platform.....	17
3.3 Information Conferences	18
3.4 Preparation of Proposals	18
3.5 Organization of the Proposal	19
3.6 Proposal Limitations	19
3.7 Proposal Compliance and Bases for Disqualification.....	20
3.8 Power Purchase Agreement	20
3.9 Pricing Requirements.....	22
3.10 Project Description.....	24
3.11 Sites Identified by the Company.....	25
3.12 Confidentiality	27

3.13	Credit Requirements Under the PPA	27
Chapter 4: Evaluation Process and Evaluation Criteria		28
4.1	Proposal Evaluation and Selection Process	28
4.2	Eligibility Requirements Assessment	30
4.3	Threshold Requirements Assessment	31
4.4	Initial Evaluation – Price and Non-Price Analysis	34
4.5	Selection of a Priority List	41
4.6	Best and Final Offer (BAFO)	41
4.7	Detailed Evaluation.....	42
4.8	Selection of the Final Award Group	45
Chapter 5: Post Evaluation Process		46
5.1	Interconnection Requirements Study.....	46
5.2	Contract Negotiation Process.....	47
5.3	Community Outreach and Engagement	47
5.4	Greenhouse Gas Emissions Analysis.....	48
5.5	PUC Approval of PPA	49
5.6	Facility In-Service.....	49

List of Appendices

Appendix A	Definitions
Appendix B	Proposer’s Response Package / IRS Data Sheet
Appendix C	Code of Conduct Procedures Manual
Appendix D	PowerAdvocate User Information
Appendix E	Mutual Confidentiality and Non-Disclosure Agreement
Appendix F	Description of Available Sites
Appendix G	Self-Build Option and Self-Build Option Team Certification Form
Appendix H	Interconnection Facilities and Cost Information
Appendix I	Rule 19 Tariff
Appendix J	Model PV RDG PPA
Appendix K	Model ESPPA
Appendix L	Model Wind RDG PPA

Chapter 1: Introduction and General Information

Hawaiian Electric Company, Inc. (“Hawaiian Electric” or the “Company”) seeks proposals for the supply of qualified variable renewable dispatchable generation and energy storage for the Hawaiian Electric System in accordance with this Request for Proposals (“RFP”).¹ The total amount of variable renewable dispatchable generation being solicited in this RFP is the capability to provide 1,300,000 megawatt hours (“MWh”) annually. The total amount of energy storage being solicited in this RFP is the capability to store and discharge ~~at least 438,000 MWh annually (energy equivalent to at least 1,200 MWh daily) per cycle~~ via a total nameplate capacity of ~~at least 200 megawatts (“MW”).~~ This MW and MWh storage capability is referred to herein as the “Storage Requirement”. In addition, up to 50 MW for 30 minutes of Fast Frequency Response (as defined in Appendix J, K, and L) is being solicited which may either be fulfilled through standalone storage projects or generation projects paired with storage proposed in response to this RFP, or through Fast Frequency Response 1 (“FFR-1”) capability on O’ahu bid into the Companies’ RFP for Delivery of Grid Services from Customer-Sited Distributed Energy Resources (“Grid Services RFP”).

The Company or its Affiliate may submit a Proposal in response to this RFP subject to the requirements of this RFP.

The Company seeks variable renewable dispatchable generation projects (with or without storage systems) and standalone energy storage projects in this RFP. The Company intends to contract for variable renewable dispatchable generation projects through this RFP using its Model Renewable Dispatchable Generation Power Purchase Agreement (“RDG PPA”), which treats variable generation facilities as fully dispatchable. The Company has created a photovoltaic (“PV”) version (the “PV RDG PPA”) and a wind version (the “Wind RDG PPA”) of its RDG PPA attached as Appendix J and Appendix L respectively.² If the proposed Project utilizes a technology other than PV or wind and/or contains components that are not encompassed by the RDG PPA, then the terms of the RDG PPA will be modified to address the specific technology and/or component.

The Company intends to contract for standalone energy storage projects through this RFP using its Model Energy Storage Power Purchase Agreement (“ESPPA”), pursuant to which Hawaiian Electric will purchase energy storage services (i.e., capacity, Fast Frequency Response, and ancillary services). The ESPPA is attached as Appendix K.²

Each successful Proposer will provide variable renewable dispatchable generation and/or energy storage to the Company pursuant to the terms of an RDG PPA or ESPPA, which will be subject to PUC review and approval by the State of Hawai’i Public Utilities Commission (“PUC”).

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4. The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed

¹ The Company is soliciting proposals for renewable dispatchable generation and energy storage in stages. The “Stage 1” RFPs were conducted in 2018. This is part of the “Stage 2” RFPs to be conducted in 2019.

² The RDG PPA for PV and Wind, and ESPPA for standalone energy storage, are available on the Company’s RFP website and through the PowerAdvocate platform for the RFP.

Projects. The amount of generation and storage that the Company may acquire from this RFP depends on, among other things, the quality and cost-effectiveness of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company's forecasts; transmission availability; and changes to regulatory or legal requirements. If attractive Proposals are received that will provide energy and energy storage in excess of the targeted amounts, the Company will consider selecting such Proposal(s) if benefits to customers are demonstrated.

All requirements necessary to submit a Proposal(s) are stated in this RFP. A description of the technical requirements for Proposers is included in the body of this RFP, Appendix B, and in the RDG PPA and ESPPA attached as Appendix J, K, and L.

All capitalized terms used in this RFP shall have the meaning set forth in the glossary of defined terms attached as Appendix A. Capitalized terms that are not included in Appendix A shall have the meaning ascribed in this RFP.

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. ~~3635636474~~ issued on ~~June 10~~ August 15, 2019 in Docket No. 2017-0352 as part of a procurement process established by the PUC.
- 1.1.2 This RFP is subject to Decision and Order (“D&O”) No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai‘i), which sets forth the PUC’s Framework for Competitive Bidding (“Framework” or “Competitive Bidding Framework”).
- 1.1.3 All Proposals with a generation component submitted in response to this RFP must utilize qualified renewable energy resource(s) as defined under the Hawai‘i Renewable Portfolio Standards (“RPS”) law.³ By statute, “Renewable Energy” means energy generated or produced using the following sources: (1) wind; (2) the sun; (3) falling water; (4) biogas, including landfill and sewage-based digester gas; (5) geothermal; (6) ocean water, currents, and waves, including ocean thermal energy conversion; (7) biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste; (8) biofuels; and (9) hydrogen produced from renewable energy sources.⁴
- 1.1.4 Proposers should review the Hawaiian Electric Companies’ Power Supply Improvement Plans, filed in Docket No. 2014-0183 on December 23, 2016 (“PSIP Update Report: December 2016” or “PSIP”). Consistent with the PSIP, the primary purpose of this RFP is to obtain variable renewable energy and energy storage so that the Company can continue to transform O‘ahu’s power supply portfolio from fossil fuel-based generation to renewable-based generation towards Hawai‘i’s 100% RPS requirement.

³ RPS requirements in Hawai‘i are codified in Hawai‘i Revised Statutes (“HRS”) §§ 269-91 through 269-95.

⁴ See HRS § 269-91.

1.2 Scope of the RFP

- 1.2.1 The Company does not have a predetermined preference for a particular renewable energy generation or storage technology.
- 1.2.2 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Project.
- 1.2.3 Proposals that will require system upgrades and the construction of which, in the reasonable judgment of the Company (in consultation with the Independent Observer), creates a significant risk that their Project's Guaranteed Commercial Operations Date ("GCOD") will not be met will not be considered in this RFP.
- 1.2.4 Projects submitted in response to this RFP must be located on the Island of O'ahu.
- 1.2.5 Proposers will determine their Project Site. Proposers have the option of submitting a Proposal using potential Sites offered and described in Section 3.11. Proposers must locate all Project infrastructure within areas of their Site that are outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017)⁵ and are not located within a Tsunami Evacuation Zone.⁶
- 1.2.6 Projects must interconnect to the Company's System at the 46 kV or 138 kV level.⁷
- 1.2.7 Projects must be greater than 5 MW. No single point of failure from the Facility shall result in a decrease in net electrical output greater than 135 MW. Additionally, in meeting the single point of failure requirement, if the Proposed Facility exceeds 135 MW, the Facility must be segmented in equally sized capacities (MW). Each segment must have its own point of interconnection into the Hawaiian Electric System that can be independently dispatched via the Company's energy management system. Revisions would need to be made to the RDG PPA or the ESPPA to account for multiple points of interconnection.
- 1.2.8 Contracts for projects that include a generation component selected through this RFP shall use the RDG PPA, as described in Section 3.8. Under the RDG PPA, the Company will maintain exclusive rights to fully direct dispatch of the Facility, subject to availability of the resource and Section 1.2.11 below.

⁵ Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. Hawai'i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai'i Department of Land and Natural Resources Contract No: 64064. This report is available at: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf

⁶ See Hawai'i Sea Level Rise Viewer at <https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>, and National Oceanic and Atmospheric Administration (NOAA) interactive map in partnership with the State of Hawai'i at <https://tsunami.coast.noaa.gov/#/>.

⁷ In this RFP, "transmission-level" circuits will refer to both 46 kV sub-transmission circuits and 138 kV transmission circuits on O'ahu.

- 1.2.9 Contracts for standalone energy storage projects selected through this RFP shall use the ESPPA, as described in Section 3.8. Under the ESPPA, the Company will maintain exclusive rights to fully direct the charging and discharging of the Facility. Additionally, due to the critical nature and usage of this to support the grid, the ability to control and tune the facility's response to certain grid events and conditions is an important aspect that will be required of these facilities.
- 1.2.10 Generation proposals may be submitted either with or without an energy storage component. The energy storage component can be charged during periods when full potential export of the generation Facility is not being dispatched by the Company, and the storage component can be used to provide energy to the Company during other times that are beneficial to the system. Generation proposals paired with an energy storage component may propose an additional contingency storage component to provide the Fast Frequency Response ("Contingency Storage") whose amount is to be specified by Proposer. An energy storage component that is paired with a generating Facility must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the RDG PPA. The Contingency Storage component must be at least 5 MW and sized to provide a minimum of 30 continuous minutes at the proposed MW amount throughout the term of the RDG PPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the RDG PPA. If a project proposes an additional 5 MW of Contingency Storage this component must be able to store and discharge at least 2.5 MWh of energy in a cycle throughout the term of the RDG PPA.

- 1.2.11 Energy storage components that are paired with a generation Facility must also be able to be charged from the grid at the direction of the Company as described in this section. To be eligible to meet this RFP's ~~MW storage requirement~~ Storage Requirement as specified in Section 4.7 energy storage components must be grid-chargeable to the amount specified by Proposer from the GCOD. Energy storage components eligible to meet this RFP's Fast Frequency Response need must be capable of being 100% charged from the grid from the GCOD.

For energy storage components that are paired with generating facilities, during the period that allows the Project to maximize and capture the benefits of the federal Investment Tax Credit ("ITC") for the energy storage system, the Proposer can design and specify the amount, if any, of grid charging for the energy storage system. However, after the 5-year ITC recapture period has lapsed, any energy storage component paired with generation must be capable of being 100% charged from the grid at the direction of the Company.

Energy storage components that are paired with generating facilities that are incapable of claiming the ITC must be capable of being 100% charged from the grid from the GCOD.

For example, during the 5-year ITC recapture period, a Proposer coupling an energy storage component with a solar facility can specify that its Facility can be charged from

the grid (at the direction of the Company) up to 20% of its annual total energy input. After the 5-year ITC recapture period has lapsed, the energy storage component must be capable of being charged up to 100% of its total energy input from the grid at the direction of the Company.

- 1.2.12 Proposals for standalone energy storage will provide ~~MW capacity~~the Storage Requirement and/or Contingency Storage to the Company during times that are deemed by the Company to be beneficial to the system. These facilities must be connected to the grid at all times, with the exception of allowed maintenance periods. Proposals for ~~MW capacity~~the Storage Requirement must be sized to support the Facility’s Allowed Capacity (in MW) for a minimum of ~~six (6)~~four (4) continuous hours throughout the term of the ESPPA. Any Contingency Storage component must be at least 5 MW and sized to provide a minimum of 30 continuous minutes at the proposed MW amount throughout the term of the ESPPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least ~~60~~40 MWh of energy in a cycle throughout the term of the ESPPA. If a project proposes an additional 5 MW of Contingency Storage this component must be able to store and discharge at least 2.5 MWh of energy in a cycle throughout the term of the ESPPA.

- 1.2.13 The amount of energy discharged from any energy storage component (standalone or one paired with a generation component) in a year will be limited to the energy storage contract capacity (in MWh) multiplied by the number of Days in that year.

- 1.2.14 The following GCOD shall apply:

1.2.14.1 Proposals for standalone energy storage or generation paired with energy storage that intend such storage to meet the Company’s ~~438,000 MWh energy storage~~Storage Requirement need must specify a GCOD no later than June 1, 2022.

1.2.14.2 Proposals for generation only or generation paired with energy storage not intended to meet the Company’s ~~438,000 MWh energy storage~~Storage Requirement need must specify a GCOD no later than December 31, 2025. However, Proposals with earlier GCODs will be given preference in scoring.

Project Technology	Generation Only	Generation Paired w/ Storage (not intended to meet energy storage <u>Storage Requirement</u> need)	Generation Paired w/ Storage (intended to meet energy storage <u>Storage Requirement</u> need)	Standalone Storage
GCOD	12/31/25	12/31/25	06/01/22	06/01/22

Grid Charging	N/A	As-bid during ITC period; 100% after ITC period	As-bid during ITC period; 100% after ITC period	100% at GCOD
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- 1.2.15 A Proposer’s GCOD set forth in its Proposal will be the GCOD in any resulting PPA⁸ if such Proposal is selected to the Final Award Group. Proposers will not be able to request a change in the GCOD set forth in their Proposals.
- 1.2.16 If selected, Proposers will be responsible for all costs throughout the term of the PPA, including but not limited to Project development, completion of an Interconnection Requirements Study (“IRS”), the cost of conducting a greenhouse gas analysis, land acquisition, permitting, financing, construction of the Facility and all Interconnection Facilities, and operations and maintenance (“O&M”).
- 1.2.17 If selected, Proposers will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the PPA, as described in Attachment G, Section 7 of the RDG PPA or ESPPA.
- 1.2.18 If selected, Proposers shall pursue all available applicable federal and state tax credits. Proposal pricing must be set to incorporate the benefit of such available federal tax credits. However, to mitigate the risk on Proposers due solely to potential changes to the state’s tax credit law before a selected project reaches commercial operations, Proposal pricing shall be set without including any state tax credits. If a Proposal is selected, the PPA for the project will require the Proposer to pursue the maximum available state tax credit and remit tax credit proceeds to the Company for customers’ benefit as described in Attachment J of the RDG PPA or ESPPA. The PPA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue the state tax credit.
- 1.2.19 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.3 Competitive Bidding Framework

Consistent with the Framework, this RFP outlines the Company’s requirements in relation to the resources being solicited and the procedures for conducting the RFP process. It also includes information and instructions to prospective Proposers participating in and responding to this RFP.

1.4 Role of the Independent Observer

- 1.4.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of

⁸ PPA throughout this RFP refers to either/both the RDG PPA or ESPPA.

the RFP process will be subject to the Independent Observer's oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that the RFP is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.

- 1.4.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:
- Monitor all steps in the competitive bidding process
 - Monitor communications (and communications protocols) with Proposers
 - Monitor adherence to the Company's Code of Conduct
 - Submit comments and recommendations, if any, to the PUC concerning the RFP
 - Review the Company's Proposal evaluation methodology, models, criteria, and assumptions
 - Review the Company's evaluation of Proposals
 - Advise the Company on its decision-making
 - Participate in dispute resolution as set forth in Section 1.10
 - Monitor contract negotiations with Proposers
 - Report to the PUC on monitoring results during each stage of the competitive bidding process
 - Provide an overall assessment of whether the goals of the RFP were achieved
- 1.4.3 The Independent Observer for this RFP is **Bates White, LLC**.
- 1.5 **Communications Between the Company and Proposers – Code of Conduct Procedures Manual**
- 1.5.1 Communications and other procedures under this RFP are governed by the "Code of Conduct Procedures Manual," (also referred to as the "Procedures Manual") developed by the Company as required by the Framework, and attached as Appendix C.
- 1.5.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company's RFP website, Electronic Procurement Platform and/or electronic mail ("Email") through the address specified in Section 1.6 (the "RFP Email Address"). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company's RFP website, or sent through either Email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen Days before the Proposal Due Date (RFP Schedule in Section 3.1, Items 7 and 8). The Company will endeavor to respond to all questions no later than five Days before the Proposal Due Date.
- 1.5.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).

- 1.5.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Stage 2 Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E.
- 1.5.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Ken Horita
Energy Contract Manager
Hawaiian Electric Company, Inc.
Central Pacific Plaza Building, Suite 2100
220 South King Street
Honolulu, Hawai‘i 96813

RFP Email Address: oahuvariablerfp@hawaiianelectric.com

1.7 Proposal Submission Requirements

- 1.7.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.
- 1.7.2 Detailed requirements regarding the form, submission, organization and information for the Proposal are set forth in Chapter 3 and Appendix B.
- 1.7.3 In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other unaffiliated person or entity. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company’s negotiating positions will not be shared with other Proposers or their respective Representatives.

~~Without limiting the foregoing, unaffiliated Proposers are prohibited from using shared legal counsel to prepare their Proposals or for contract negotiations with the Company where counsel is an individual person. If counsel is a law firm with multiple attorneys, unaffiliated Proposers may use the same firm only if (1) such firm assigns separate attorney(s) to each Proposer, (2) the attorney(s) are prohibited from (i) sharing a Proposer’s confidential information or the Company’s confidential information associated with such Proposer with others, or (ii) accessing another Proposer’s confidential information or Company’s confidential information associated with such~~

~~Proposer from another attorney in the firm, (3) the law firm has appropriate procedures, safeguards and policies in place to ensure that separations exist so that the attorney(s) assigned to a Proposer do not share or have access to confidential information of another Proposer or of the Company which was obtained through another attorney's representation of a Proposer, and (4) an authorized signatory of the law firm shall provide Company with a written certification in the form attached as Appendix B Attachment 1. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company's negotiating positions will not be shared with other Proposers or their respective Representatives.~~

In addition, in submitting a Proposal, a Proposer will be required to provide Company with its legal counsel's written certification in the form attached as Appendix B Attachment 1 certifying in relevant part that irrespective of any proposer's direction, waiver, or request to the contrary, that the attorney will not share a proposer's confidential information associated with such proposer with others, including, but not limited to, such information such as a proposer's or Company's negotiating positions. If legal counsel represents multiple unaffiliated proposers whose Proposals are selected for the Final Award Group, such counsel will also be required to submit a similar certification at the conclusion of power purchase agreement negotiations that he or she has not shared a proposer's confidential information or the Company's confidential information associated with such proposer with others, including but not limited to, such information as the a proposer's or Company's negotiating positions.

- 1.7.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai'i Standard Time (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. No hard copies of the Proposals will be accepted.⁹ It is the Proposer's sole responsibility to ensure that complete and accurate information has been submitted on time and within the instructions of this RFP. With this assurance, Company shall be entitled to rely upon the completeness and accuracy of every Proposal. Any errors identified by the Proposer or Company after the Proposal Due Date has passed may jeopardize further consideration and success of the Proposal. If an error or errors are later identified, Company, in consultation with the Independent Observer, may permit the error(s) to be corrected without further revision to the Proposal, or may require Proposer to adhere to terms of the Proposal as submitted without correction. Additionally, and in Company's sole discretion, if such error(s) would materially affect the Priority List or Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by milestone (7) Self-Build and Affiliate Proposal Due Date in Section 3.1 Table 1. The PowerAdvocate Platform automatically closes further submissions after milestone (8) IPP Proposal Due Date in Table 1.

⁹ Proposals for the SBO(s) and Affiliate Proposals have additional submission requirements to the PUC specified in Section 1.9 below.

1.8 Proposal Fee

- 1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of \$10,000 for each Proposal submitted. IPP and Affiliate proposers who propose projects located at the Company-owned site identified in Section 3.11.2 will have their Proposal Fee waived.
- 1.8.2 Proposers may submit multiple Proposal variations for a Project for a single Proposal Fee. If such Proposals are on different Sites or for different generation technologies, a separate Proposal Fee must be paid for each Proposal. The method of submitting multiple Proposals within this RFP is described in Appendix B.
- 1.8.3 Proposers may also submit up to a total of four (4) variations of their Proposal, one variation of which is the original base variation of the Proposal. In addition, for each of the 4 variations the Proposer may propose an additional variation with Contingency Storage, where the only change is the addition of a Contingency Storage component and any needed changes to account for the addition of the Contingency Storage.¹⁰ Variations of pricing terms, Facility size, with/without storage, or differing levels of grid-charging capabilities can be offered. All variations within a Proposal must be proposed on the same Site and using the same generation technology to avoid paying a separate Proposal Fee. Whether or not a separate Proposal Fee is required, all unique information for each variation of a Proposal, no matter how minor such variation is, must be clearly identified and separated by following the instructions in Appendix B Section 3.
- 1.8.4 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Hawaiian Electric Company, Inc." and must be delivered and received by the Company by 2:00 pm (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. The check should include a reference to the Proposal(s) for which the Proposal Fee is being provided. Proposers are strongly encouraged to utilize a delivery service method that provides proof of delivery to validate delivery date and time.

If the Proposal Fee is delivered by U.S. Postal Service (with registered, certified, receipt verification), the Proposer shall address it to:

Ken Horita
Energy Contract Manager
Hawaiian Electric Company, Inc.
Mail Code CP21-IU
PO Box 2750
Honolulu, Hawai'i 96840

If the Proposal Fee is delivered in person, or via an alternative registered, certified delivery service, the Proposer shall use the address specified in Section 1.6.

¹⁰ For each variation that includes Contingency Storage, it is to the Proposer's advantage to offer an identical variation without Contingency Storage as Proposals with Contingency Storage must be selected through both evaluation processes (energy/capacity and Contingency Storage) in order to advance to the Final Award Group.

1.9 Procedures for the Self-Build or Affiliate Proposals

The Competitive Bidding Framework allows the Company the option to offer a Proposal(s) in response to this RFP (“Self-Build Option” or “SBO”). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the SBO or members, agents or consultants of the Company formulating the SBO (the “Self-Build Team”); and (2) preferential access to proprietary information of the Self-Build Team. These requirements are specified in the Code of Conduct required under the Framework and implemented by certain rules and procedures found in the Procedures Manual submitted to the PUC in Docket No. 2017-0352 on April 1, 2019. A copy of the Procedures Manual is attached as Appendix C.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals to RFPs issued by the Company. All Self-Build and Affiliate Proposals are subject to the Company’s Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP Proposal, except that they are due at the same time as any Self-Build Proposal(s).

The Independent Observer will monitor adherence to the Company’s Code of Conduct and the Procedures Manual. Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Proposal for the SBO(s) and Affiliate Proposals be submitted electronically through the Electronic Procurement Platform and filed with the PUC in hard copy a minimum of one (1) Day before other Proposals are due. (A Proposal for the SBO or Affiliate will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by Milestone (7) Self-Build and Affiliate Proposal Due Date in RFP Table 1.)

Detailed requirements for an SBO Proposal can be found in Appendix G. These requirements are intended to provide a level playing field between SBO Proposals and third-party Proposals. Except where specifically noted, an SBO Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers, as well as certain PPA requirements, such as milestones and liquidated damages, as described in Appendix G. The non-negotiability of the Performance Standards shall apply to any SBO to the same extent it would for any other Proposal. Notwithstanding the fact that it will not be required to enter into an RDG PPA or ESPPA with the Company, a Self-Build Proposer will be required to note its exceptions, if any, to the RDG PPA and/or ESPPA in the same manner required of other Proposers, and will be held to such modified parameters if selected. In addition to its Proposal, the Self-Build Team will be required to submit Appendix G Attachment 1, Self-Build Option Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment

or information providing an impermissible competitive advantage to the Self-Build Team over other proposers responding to this RFP, as well as adherence to PPA terms and milestones required of all proposers and the SBO's proposed cost protection measures.

The cost recovery methods between a regulated utility SBO Proposal and IPP Proposals are fundamentally different due to the business environments they operate in. As a result, the Company has instituted a process to compare the two types of proposals for the initial evaluation of the price related criteria on a 'like' basis through comparative analysis.

At the core of an SBO Proposal are its total project capital cost and any associated annual operations and maintenance ("O&M") costs. During the RFP's initial pricing evaluation step, these capital costs¹¹ and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the project. The SBO revenue requirements are then used in a levelized price calculation to determine a Levelized Energy Price ("LEP") (\$/MWh), if for energy needs, or to determine an Energy Storage Only Levelized Price (\$/MWh), if for storage only or for Contingency Storage. ~~(\$/MW)~~. These price calculations will then be used for comparison to IPP Proposals.

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the SBO Proposal to ensure an appropriate level of customer cost protection measures are included in such Proposal.

In response to the ~~200 MW capacity~~ Storage Requirement and Fast Frequency Response needs, the Self-Build Team will only be permitted to submit a Proposal or group of Proposals (with up to a total of 4 variations for each Proposal) which collectively address this need, and no more. These Proposals are intended to serve as the Company's Parallel Plan, as described in the PUC's Framework for Competitive Bidding.¹² The Self-Build team will be allowed to submit one (1) additional Proposal (with up to a total of 4 variations) in response to the energy need.

The SBO will be permitted to submit a shared savings mechanism with its Proposal to share in any cost savings between the amount of cost bid in the SBO Proposal and the actual cost to construct the Project. If the SBO Proposal is selected to the Final Award Group, the proposed shared savings mechanism will need to be approved by the PUC. Submission of a shared savings mechanism is not required and will not be considered in the evaluation of the SBO Proposal.

1.10 Dispute Resolution Process

1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.

¹¹ Self-Build Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction ("EPC"), interconnection, overhead, and Allowance for Funds Used During Construction ("AFUDC").

¹² See Decision and Order No. 23121, filed December 8, 2006, in Docket No. 03-0372.

- 1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer (“Initial Meeting”). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.
- 1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential Mediation in Honolulu, Hawai‘i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. (“DPR”) (or its successor) or, in its absence, the American Arbitration Association then in effect (“Mediation”). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney’s fees.
- 1.10.4 If settlement of the dispute is not reached within sixty (60) Days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any unresolved disputes to Mediation, then as provided in the Framework, the Proposer may submit the dispute to the PUC in accordance with the Framework.
- 1.10.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the dispute within thirty (30) Days, as described in Parts III.B.8 and V of the Framework.¹³ There will be no right to hearing or appeal from this informal expedited dispute resolution process.
- 1.10.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 (e.g., a court proceeding), then such Proposer shall be responsible for any and all attorneys’ fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.11 No Protest or Appeal

Subject to Section 1.10, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

¹³ The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework’s process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework’s dispute resolution process applies to “Bidders” and there are no “Bidders” at this stage in the RFP process.

By submitting a Proposal in response to the RFP, the Proposer expressly agrees to the terms and conditions set forth in this RFP.

1.12 **Modification or Cancellation of the Solicitation Process**

- 1.12.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final execution of an RDG PPA or ESPPA, as may be applicable, in consultation with the Independent Observer, postpone, withdraw and/or cancel any requirement, term or condition of this RFP, including deferral of the award or negotiation of any contract, and/or cancellation of the award all together, all of which will be without any liability to the Company.
- 1.12.2 The Company may modify this RFP subject to requirements of the Framework, whereby the modified RFP will be reviewed by the Independent Observer and submitted to the PUC thirty (30) Days prior to its issuance, unless the PUC directs otherwise. See Framework Part IV.B.10. The Company will follow the same procedure with regard to any potential postponement, withdrawal or cancellation of the RFP or any portion thereof.

Chapter 2: Resource Needs and Requirements

2.1 **Performance Standards**

Proposals must meet the attributes set forth in this RFP and the requirements of the RDG PPA for proposals that include a generation component or the ESPPA for standalone energy storage proposals. This RFP and the RDG PPA or ESPPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP. Additional Performance Standards may be required based on the results of the IRS.

Facilities must be able to operate in grid-forming mode when directed by the Company as defined in the RDG PPA or ESPPA.

Black start capability is preferred for standalone energy storage or energy storage paired with generation facilities. Proposals will need to identify¹⁴ any incremental costs to enable their facility to be black start capable, if not already enabled.

For standalone energy storage or energy storage paired with generation facilities, the functionality and characteristics of the storage must be maintained throughout the term of the PPA. To be clear, Proposers may not propose any degradation for either capacity or efficiency in their Proposals.

¹⁴ If black start is not already enabled for the Proposal, any additional costs necessary to enable black start will be identified in the submission instructions defined in Appendix B.

2.2 Transmission System Information

- 2.2.1 Company information regarding an initial assessment of potential MW capacity of 46 kV and 138 kV transmission-level circuits providing possible points of interconnection has been developed for Sites included in the Land Request for Information (“Land RFI”) as described in [Section 3.11](#) and will be made available to Proposers only after execution of the Stage 2 NDA.¹⁵ Proposers should perform their own evaluation of project locations, and the Company does not guarantee any project output or ability to connect based on such information. Prior to submitting a proposal, Proposers are encouraged to inquire about the viability of interconnecting a proposed Project at a specific location. For example, a Project must interconnect through a minimum of two transmission lines and no single point of failure resulting in a loss of more than 135 MW; however, depending on but not limited to, factors such as location of the Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies, the Project may require more than two transmission line terminations. Please direct questions to the RFP Email Address in [Section 1.6](#).
- 2.2.2 While the Land RFI provides information regarding an initial assessment of potential MW capacity and possible points of interconnection for transmission-level circuits, Projects interconnecting to 138 kV circuits require additional analyses. The available capacity of a transmission line is dependent on many factors including location of the Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies. As a result, load flow analyses are required to confirm the available line capacities for various scenarios. Detailed load flow analyses will be performed as part of the project selection process. Prior to the RFP, developers may inquire as to viability of proposed real project locations for interconnection as well as specific requirements of that proposed 138 kV interconnection.
- 2.2.3 For Projects interconnecting to 46 kV circuits, the proposed Project output cannot exceed the available hosting capacity limit during the daytime hours of 8am to 5pm.¹⁶ The proposed Project output at all other hours (5pm to 8am) cannot exceed the identified conductor limit (less any existing or expected generation sources available during those hours prior to the GCOD). For example, a solar resource paired with storage may interconnect to a circuit with a stated hosting capacity of zero provided that no energy is exported during the hours of 8am and 5pm and the export of power does not exceed the conductor limit after 5pm. Specifically, as it pertains to interconnection to the 46 kV system, Proposers may inquire regarding the viability of upgrading 46 kV conductors to increase available capacity based on a specific location (direct questions to the RFP Email Address in [Section 1.6](#)). Prior to the RFP, developers may inquire as to viability of proposed real project locations for interconnection.

¹⁵ [Appendix E](#) contains the Mutual Confidentiality and Non-Disclosure Agreement for this RFP.

¹⁶ The available hosting capacity is not a final determination whether it is feasible to interconnect a Proposed Facility. The available hosting capacity provided in either the Land RFI or in response to inquiries to the Company represent the power system’s conditions at the time the analysis was conducted. This analysis examined steady-state thermal capacity and voltage issues during daytime minimum loading conditions only.

2.2.4 A detailed IRS, when performed, may reveal other adverse system impacts that may further limit a Project's ability to interconnect and/or further limit the net output of the Facility without upgrades.

2.3 **Interconnection to the Company System**

2.3.1 The Interconnection Facilities includes both: (1) Seller-Owned Interconnection Facilities; and (2) Company-Owned Interconnection Facilities.

2.3.2 All Proposals must include a description of the Proposer's plan to transmit power from the Facility to the Company System. The proposed Interconnection Facilities must be compatible with the Company System. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System.

2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point(s) of Interconnection with the Company System, and scheme of interconnection, must meet Company standards. The Company will provide its construction standards and procedures to the Proposer (Engineer, Procure, Construct Specifications for Hawaiian Electric Power Lines and Substations) if requested via the RFP Email Address in Section 1.6 and upon the execution of a Stage 2 NDA as specified in Section 3.12.1. These specifications are intended to illustrate the scope of work typically required to administer and perform the design and construction of a Hawaiian Electric substation and power line.

2.3.2.2 Interconnection Facilities must be designed such that, with the addition of the Facility, the Company System can meet all relevant Transmission Planning Criteria¹⁷ and any amendments thereto considering the Allowed Capacity and any Contingency Storage.

2.3.3 Tariff Rule No. 19, a copy of which is attached as Appendix I, establishes provisions for Interconnection and Transmission Upgrades. The tariff provisions are intended to simplify the rules regarding who pays for, installs, owns, and operates interconnection facilities in the context of competitive bidding. Proposers will be required to build the Company-Owned Interconnection Facilities, including the switching station and line work, except for any work in the Company's existing energized facilities and the final tap. Construction of Company-Owned Interconnection Facilities by the Proposer must comply with industry standards, laws, rules and licensing requirements, as well as the Company's specific construction standards and procedures that the Company will provide upon request. (See Section 2.3.1.) The Company uses the breaker-and-a-half scheme for its transmission switching station as shown in Attachment A of Appendix I – Rule 19 Tariff. Proposers should follow this scheme for purposes of their estimates.

2.3.4 The Proposer shall be responsible for all costs required to interconnect a Project to the Company System, including all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities.

¹⁷ Transmission Planning Criteria are further described in the PSIP beginning on page O-11 of Appendix O.

- 2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and transmission equipment or, if applicable, 46 kV circuit conductor upgrades expected to be required between their Facility and their proposed Point of Interconnection. Appendix H includes information related to Company-Owned Interconnection Facilities and costs that may be helpful to Proposers. Selected Proposers shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities, whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.
- 2.3.6 Proposers are required to include in their pricing proposal all costs for distribution-level service interconnection for station power.
- 2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. Proposals selected to the Final Award Group will be subject to further study in the form of an IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed PPA.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the "RFP Schedule"). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via Email or via the Electronic Procurement Platform to the Proposers.

**Table 1
Proposed RFP Schedule**

Milestone	Schedule Dates
(1) Status Conference held	February 7, 2019
(2) Draft RFP filed	April 1, 2019
(3) Status Conferences held	April 18, 2019 May 2, 2019
(4) Commission solicited Stakeholder and Company Comments by	May 20, 2019
(5) Proposed Final RFP filed	July 10, 2019
(6) Final RFP is Issued	August 9 22, 2019 ¹⁸
(7) Self-Build and Affiliate Proposal Due Date	October 21 November 4, 2019 at 2:00 pm HST ¹⁹
(8) IPP Proposal Due Date	October 22 November 5, 2019 at 2:00 pm HST
(9) Selection of Priority List	January 3 17, 2020
(10) BAFOs Due	January 10 24, 2020
(11) Selection of Final Award Group	April 24 May 8, 2020
(12) Contract Negotiations Start	May 1 15, 2020

3.2 Company RFP Website/Electronic Procurement Platform

3.2.1 The Company has established a website for general information to share with potential Proposers. The RFP website is located at the following link:

www.hawaiianelectric.com/competitivebidding

The Company will provide general notices, updates, schedules and other information on the RFP website throughout the process. Proposers should check the website frequently to stay abreast of any new developments. This website will also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

“Sourcing Intelligence” developed by Power Advocate is the Electronic Procurement Platform that the Company has licensed and will utilize for this RFP. Proposers who do not already have an existing account with PowerAdvocate and who intend to submit a Proposal for this RFP will need to register as a “Supplier” with PowerAdvocate.

¹⁸ ~~Per Section IV.B.6.e.ii of the Competitive Bidding Framework “[t]he utility shall have the right to issue the RFP if the Commission does not direct the utility to do otherwise within thirty (30) days after the Commission receives the proposed RFP and the Independent Observer’s comments and recommendations.” August 9, 2019 is based on this thirty (30) day timeline. However, this date and all subsequent dates in the proposed schedule are dependent on any further guidance provided by the PUC.~~

¹⁹ An SBO or Affiliate Proposal must also be filed in hard copy form with the PUC a minimum of one (1) Day before other Proposals are due.

- 3.2.2 There are no license fees, costs, or usage fees to Proposers for the use of the Electronic Procurement Platform.

See [Appendix D](#) for user information on and screenshots of PowerAdvocate's Sourcing Intelligence procurement platform.

3.3 Information Conferences

The Commission held three status conferences on February 7, 2019, April 18, 2019, and May 2, 2019 to allow the Companies to propose plans for their Stage 2 RFPs and to respond to questions from the Commission, the Consumer Advocate and stakeholders. The Companies' presentations were made available on the Companies' RFP Website. The Commission also solicited comments from stakeholders on the Companies' Stage 2 Draft RFPs on May 6, 2019 before releasing its Order No. 36356 providing guidance on the draft RFPs for dispatchable and renewable generation on June 10, 2019. On July 5, 2019, the Commission issued Order No. 36406 providing further clarification of Order No. 36356.

Prospective Proposers may continue submitting written questions regarding the RFP to the RFP Email Address set forth in [Section 1.6](#). The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website's Q&A section prior to submission of their Proposal. Duplicate questions will not be answered.

3.4 Preparation of Proposals

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer's Proposal, and the Proposer's anticipated performance under the RDG PPA or ESPPA. It is the Proposer's responsibility to ensure it understands all requirements of the RFP, to seek clarification if the RFP's requirements or Company's request is not clear, and to ask for any confirmation of receipt of submission of information. Under Section 1.7.4, the Proposer is solely responsible for all errors in its Proposal(s). The Company will not accept any explanation by a Proposer that it was incumbent on the Company to catch any error.
- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on information submitted by Proposers in response to this RFP. Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP.

3.4.3 Each Proposer shall be solely responsible for, and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and (5) investigation and research relating to its Proposal and this RFP. The Company will not reimburse any Proposer for any such costs, including the selected Proposer(s).

3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent²⁰ of the Proposer.

3.5 **Organization of the Proposal**

The Proposal must be organized as specified in Appendix B. It is the Proposer's responsibility to ensure the information requested in this RFP is submitted and contained within the defined Proposal sections as specified in Appendix B.

3.6 **Proposal Limitations**

Proposers expressly acknowledge that Proposals are submitted subject to the following limitations:

The RFP does not commit or require the Company to award a contract, pay any costs incurred by a Proposer in the preparation of a Proposal, or procure or contract for products or services of any kind whatsoever. The Company reserves the right, in consultation with the Independent Observer, to accept or reject, in whole or in part, any or all Proposals submitted in response to this RFP, to negotiate with any or all Proposers eligible to be selected for award, or to withdraw or modify this RFP in whole or in part at any time.

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.
- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the Stage 2 NDA.

²⁰ Proposer's officer or agent must be authorized to sign the Proposal. Such authorization must be in writing and may be granted via Proposer's organizational documents (i.e., Articles of Incorporation, Articles of Organization, By-laws, etc.), resolution, or similar documentation.

3.7 Proposal Compliance and Bases for Disqualification

Proposers may be deemed non-responsive and/or Proposals may not be considered for reasons including, but not limited to, the following:

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.5.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to a Company request for additional information to clarify the contents of its Proposal within the timelines specified by the Company.
- The Proposal contains misrepresentations or errors.

3.8 Power Purchase Agreement

- 3.8.1 The Power Purchase Agreement for proposals selected under this RFP that include a generation component will be in the form of the RDG PPA, attached as Appendix J and Appendix L.
- 3.8.2 The Power Purchase Agreement for standalone energy storage proposals selected under this RFP will be in the form of the Company's ESPPA, attached as Appendix K.
- 3.8.3 If selected, any Affiliate Proposers will be required to enter into the RDG PPA or ESPPA with the Company.
- 3.8.4 If selected, a Self-Build Proposer will not be required to enter into a PPA or ESPPA with the Company. ~~However~~However, the Self-Build Proposer will be held to the proposed modifications to the RDG PPA and/or ESPPA, if any, it submits as part of the SBO in accordance with Section 3.8.7. Moreover, the SBO will be held to the same performance metrics and milestones set forth in the RDG PPA and/or ESPPA to the same extent as all Proposers, as attested to in the SBO's Appendix G Attachment 1, Self-Build Option Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility for a Company-owned facility, the SBO will be permitted to adjust operational requirements and performance metrics with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to a PPA with PUC approval.

- 3.8.5 In general, under the RDG PPA, payment to the Seller contains two parts: a Lump Sum Payment component to cover the fixed costs of the Project and a Price for Purchase of Electric Energy component (\$/MWh component) to cover variable operations and maintenance costs (if applicable, depending on the resource). In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage (if applicable) and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch. Company shall not be obligated to accept nor shall it be required to pay for test energy generated by the Facility during acceptance testing or other test conditions.
- 3.8.6 In general, under the ESPPA, payment to the Seller consists of a Lump Sum Payment to cover dispatchability and availability of the Facility. In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch.
- 3.8.7 As described in Section 2.1, the Performance Standards identified in the applicable RDG PPAs or the ESPPA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Facility's ability to meet these Performance Standards is both a Threshold Requirement and a Non-Price Related Criteria under Sections 4.3 and 4.4.2, respectively. As such, the Performance Standards included in the RDG PPAs or ESPPA are non-negotiable- by a Self-Build Proposer or any other Proposer. Proposers may propose modifications to other sections of the RDG PPA or ESPPA but are encouraged to accept such terms as written in order to expedite the overall RFP process and potential contract negotiations. As a component of their respective Proposals, a Self-Build Proposer or any other Proposers who elect to propose modifications shall provide a Microsoft Word red-line version of the relevant document identifying specific proposed modifications to the model language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification.
- 3.8.7.1 General comments, drafting notes and footnotes such as "parties to discuss" are unacceptable and will be considered non-responsive. Proposed modifications to the RDG PPA and ESPPA will be evaluated as a non-price evaluation criterion as further described in Section 4.4.2. In order to facilitate this process, the Company will make available electronic versions of the model agreements on the RFP website and through the PowerAdvocate platform for the RFP. Any proposed modifications to the RDG PPA or ESPPA will be subject to negotiation between the Company and the Final Award Group. As stated above, since general comments, drafting notes, and footnotes without accompanying specific proposed language modifications are unacceptable and non-responsive, the Company will not negotiate provisions simply marked by such general comments, drafting notes and footnotes.

3.8.7.2 The Company has an interest in maintaining consistency for certain provisions of the RDG PPAs and ESPPA, such as the calculation of availability and payment terms. Therefore, for such provisions, the Company will endeavor to negotiate similar and consistent language across PPAs for the Final Award Group.

3.8.8 Proposals that do not include specific proposed modifications to the attached RDG PPAs or ESPPA will be deemed to have accepted the RDG PPA or ESPPA in its entirety.

3.9 Pricing Requirements

3.9.1 Proposers must submit pricing for each of their variations associated with each Proposal (if variations as described in Section 1.8.2 and 1.8.3 are submitted). Proposers are responsible for understanding the terms of the RDG PPA or ESPPA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy or receiving all Investment Tax Credits assumed).

3.9.2 Escalation in pricing over the term of the RDG PPA or the term of the ESPPA is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission). Pricing information contained anywhere else in a Proposal will not be considered during the evaluation process.

3.9.4 For projects that include a generation component, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount for full dispatchability of the Facility. Payment will be made in monthly increments.
- **Price for Purchase of Electric Energy (\$/MWh):** Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).
- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the portion of the Lump Sum Payment attributable to the Contingency Storage component.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the portion of the total project cost attributable to the Contingency Storage component.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

3.9.5 For standalone energy storage projects, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount assuming full availability and dispatchability. Payment will be made in monthly increments.
- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For standalone energy storage projects that include Contingency Storage, the portion of the Lump Sum Payment attributable to the Contingency Storage component.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.

- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For standalone energy storage projects that include Contingency Storage, the portion of the total project cost attributable to the Contingency Storage component.

See [Appendix G](#) for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

3.9.6 As identified in the Schedule of Defined Terms in the PPA under “BESS Allocated Portion of the Lump Sum Payment”, the allocated portion of the Lump Sum Payment specified for energy storage for the Facility is 50% and shall be a non-negotiable percentage in the PPA.

3.10 Project Description

3.10.1 Proposals that include a generation component are required to provide a NEP RFP Projection for the Project. The NEP RFP Projection associated with the proposed Project represents the estimated annual net energy (in MWh) that could be produced by the Facility and delivered to the Point of Interconnection over a ten-year period with a probability of exceedance of 95%. If the proposed Project includes an energy storage component, it should not be factored into the NEP RFP Projection. Any losses that may be incurred from energy being stored and then discharged from the energy storage component or any energy that may be diverted to the energy storage component due to generation in excess of the Facility’s Allowed Capacity should not be factored into the NEP RFP Projection. The NEP RFP Projection should assume that all energy is being directly exported to the Hawaiian Electric System. The NEP RFP Projection will be used in the RFP evaluation process and therefore Proposers will be held to their provided value.²¹

3.10.2 Proposers must provide all information pertaining to the design, development, and construction of the Interconnection Facilities as specified in [Appendix B](#).

3.10.3 Each Proposer must also agree to provide Project financial information, including proposed Project finance structure information specified in [Appendix B](#). Such information will be used to evaluate Threshold Requirements and non-price criteria (e.g., Financial Viability of Proposer, Financial Strength and Financing Plan, State of Project

²¹ If a Proposal is selected to the Final Award Group and a PPA is executed between the Company and the Proposer, the NEP RFP Projection will be further evaluated at several steps throughout the process as set forth in the RDG PPA, and adjustments to the Lump Sum Payment will be made accordingly. Additionally, because the Company will rely on an accurate representation of the NEP RFP Projection in the RFP evaluation, a one-time liquidated damage as described in the RDG PPA will be assessed if the First NEP benchmark is less than the Proposer’s NEP RFP Projection. After the Facility has achieved commercial operations, the performance of the Facility will be assessed on a continuing basis against key metrics identified in the RDG PPA. See [Article 2](#) and [Attachment U](#) of the RDG PPA.

Development and Schedule) set forth in Sections 4.3 and 4.4.2. Upon selection, the Final Award Group may be requested to provide further detailed cost information if requested by the PUC or the Consumer Advocate as part of the PPA approval process. If requested, such information would be provided to the PUC, Consumer Advocate and Company pursuant to a protective order in the docket.

- 3.10.4 The Proposer agrees that no material changes or additions to the Facility from what is submitted in its Proposal will be made without the Proposer first having obtained prior written consent from the Company. Evaluation of all Proposals in this RFP is based on the information submitted in each Proposal at the Proposal Due Date. If any Proposer requests any Proposal information to be changed after that date, the Company, in consultation with the Independent Observer, and in consideration of whether the evaluation is affected, will determine whether the change is permitted.

3.11 Sites Identified by the Company

- 3.11.1 As an alternative to a Site identified by the Proposer, the Company has identified potential Sites where landowners have expressed a willingness to negotiate a lease or purchase of the land to support a renewable energy project. These Sites were identified through a Land RFI. Proposers will be responsible for working directly with the land owner and must secure Site Control with such land owner prior to submitting a Proposal. Land RFI information is available to interested parties who sign the Stage 2 NDA. The Land RFI is further described in Appendix F.

Proposers are not required to select a Site identified in the Land RFI and as noted above may propose any Site for a Project. A Proposer may ask the Company questions as set forth in Section 2.2.1 if it would like to obtain similar information about the viability of interconnection at its proposed Site as identified for the Land RFI parcels.

- 3.11.2 Additionally, a Company-owned Site is being offered to Proposers of standalone energy storage Projects for their consideration. An approximately 9.5 acre area within the Kahe Generating Station property on the west side of O‘ahu, referred to as the Kahe Site, is further described in Appendix F.

Proposers proposing to use the Kahe Site shall be required to agree to specific terms and conditions for such use as provided for in an attachment to the PPA. Provisions providing for access to the site during construction and thereafter, during commercial operations, will be subject to current Company security policies and procedures. Physical, communication and internet security will be required consistent with Company policy. Additional measures may be required to limit/eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures and requirements may change as necessary during the term of the ESPPA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules or regulations. A draft copy of the proposed form of the Terms and Conditions for Use is attached as Attachment X to the model ESPPA. Limited sections (Section 4 Seller's Investigations of the Company-Owned Site, Section 5 Construction and Maintenance,

Section 7 Hazardous Substances, and Section 8 Archeological and Historic Items) of the TCU shall be negotiable.

The Company ~~plans to offer~~provided potential Proposers the opportunity to visit the Kahe Site. ~~The date, time, and requirements for this on August 6, 2019. Information from the~~ site visit will be posted ~~to~~on the Company’s RFP website.

- 3.11.3 To maintain the integrity of the transmission system, standalone energy storage Proposals or Proposals paired with energy storage that intend to meet the ~~needs of the~~ Company’s ~~438,000 MWh energy storage~~Storage Requirement should either be sited on land near or adjacent to one the following 138 kV substations available for interconnection. If the Proposer chooses a different site, the Proposer may be required to build a new substation that meets the Company transmission planning criteria for firm generation resources.

Substation	Address	Zip Code	TMK	Space Available
AES Substation	91-174A Hanua St	96707	9-1-026-018	Space for expansion
CEIP Substation	91-0550 Kalaeloa Blvd	96707	9-1-015-016	Open bay
Ewa Nui Substation	91-1440A Farrington Hwy	96707	9-1-018-001	Space for expansion
Halawa Substation	99-760 Moanalua Rd	96701	9-9-010-044	Space for expansion
Ko’olau Substation	45-580 Kionaole Rd	96744	4-5-042-007	Open bay

These 138 kV substations have the necessary infrastructure to meet the transmission planning criteria for firm generation resources. To maximize utilization of the Company Facilities, the Company prefers that Proposals that intend to interconnect to these 138 kV substations be sized to maximize utilization of the substation (e.g., projects sized in the range of 100 MW). Additional information regarding interconnection at these substations are provided in Appendix F.

Proposers must include the costs for use of the land and site preparation for a new Company substation as specified in Appendix H. The evaluation of these Projects is specified in Section 4.4. Proposers should contact the Company for additional information regarding the estimated interconnection facilities needed to satisfy the transmission planning criteria for firm generation resources.

3.12 Confidentiality

- 3.12.1 Each prospective Proposer must submit an executed Stage 2 NDA (specific to the O’ahu Variable Renewable Dispatchable Generation and Energy Storage RFP) in the form attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1. The form of the Stage 2 NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed Stage 2 NDA will be considered. NDAs that were fully executed for Stage 1 will not be accepted for Stage 2. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking every page of a Proposal as confidential. The Company will make reasonable efforts to protect

any such information that is clearly marked as confidential. Consistent with the terms of the Stage 2 NDA, the Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal and facilitating potential contract negotiations.

- 3.12.2 Proposers, in submitting any Proposal(s) to Company in response to this RFP, certify that such Proposer has not shared its Proposal(s), or any part thereof, with any other Proposer of a Proposal(s) responsive to this RFP.
- 3.12.3 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company and to be filed in a proceeding before the PUC. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the State of Hawai‘i Department of Commerce and Consumer Affairs, Division of Consumer Advocacy, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.13 **Credit Requirements Under the PPA**

- 3.13.1 Proposers with whom the Company concludes PPA contract negotiations must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank chartered in the United States as required and set forth in Article 14 of the RDG PPA or the ESPPA.
- 3.13.2 The Development Period Security and Operating Period Security identified in the RDG PPAs or the ESPPA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the RDG PPAs or the ESPPA.
- 3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States to guarantee Proposer’s payment of interconnection costs for all Company-Owned Interconnection Facilities in excess of the Total Estimated Interconnection Costs and/or all relocations costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the RDG PPAs or the ESPPA.
- 3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the RDG PPAs or ESPPA.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 and Figure 2 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company, in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements.²² If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business Days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation resulting in the development of a Priority List, followed by the opportunity for Priority List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

²² As a general rule, if a Proposer does not include a requested document, inadvertently excludes minor information or provides inconsistencies in its information, it may be given a chance to cure such deficiency. If a Proposer fails to provide material required information in its Proposal and providing the Proposer an opportunity to cure is deemed by the Company, in consultation with the Independent Observer, as an unfair advantage to such Proposer, the Proposal could be classified as non-conforming and eliminated for failure to meet the Eligibility Requirements.

Figure 1 – Evaluation Workflow

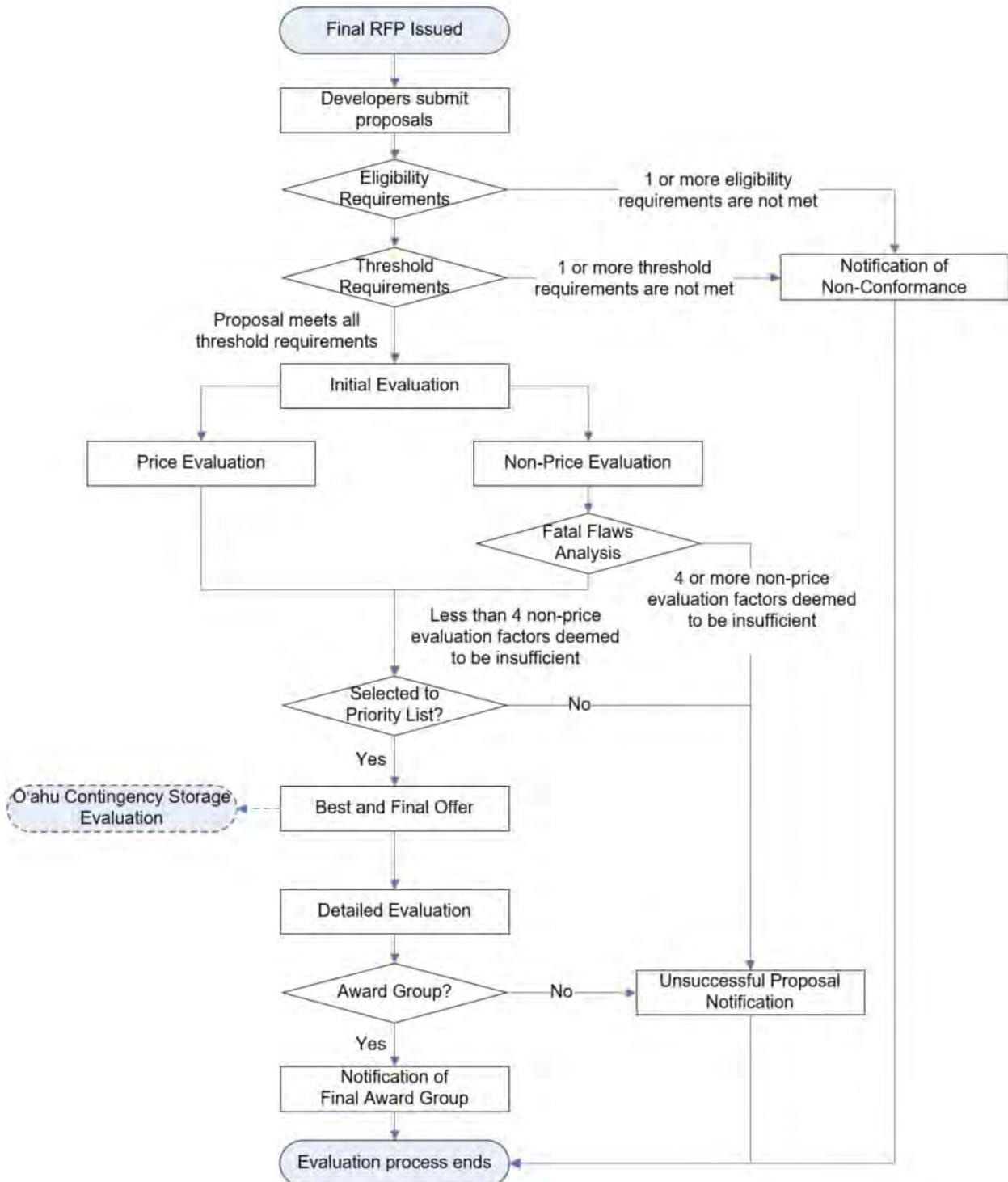
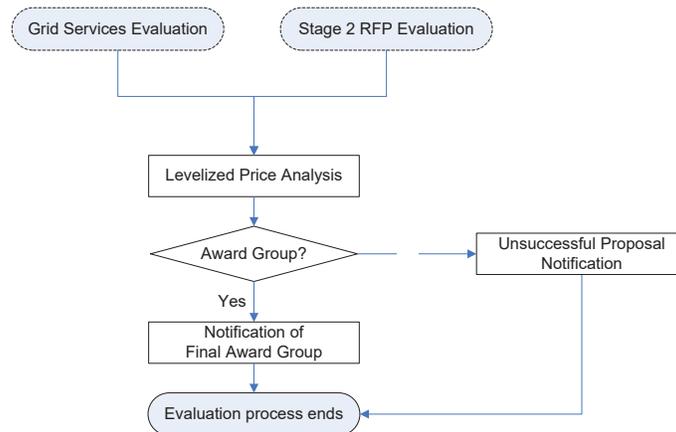


Figure 2 – O‘ahu Contingency Storage Evaluation Workflow



4.2 Eligibility Requirements Assessment

Upon receipt of the Proposals, each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements.

- The Proposal including required uploaded files must be received on time via the PowerAdvocate Platform.
- The Proposal Fee must be received on or before the Proposal Due Date.²³
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
- The Proposer must fully execute the agreements or other documents required pursuant to this RFP.
- The Proposer must provide a certificate of good standing from the State of Hawai‘i Department of Commerce and Consumer Affairs.
- The Proposer must provide federal and state tax clearance certificates for the Proposer.
- The Proposal must not be contingent upon changes to existing county, state, or federal laws or regulations.
- The proposed Project must be located on the island of O‘ahu.
- Project must be greater than 5 MW.
- No single point of failure from the Facility shall result in a decrease in net electrical output greater than 135 MW.
- Projects that interconnect to an existing Company substation (as identified in Section 3.11.3) must be a standalone energy storage Proposal or a Proposal paired with energy storage intending to meet the Company’s ~~identified energy storage needs~~ Storage Requirement.

²³ Proposal Fees will not be required for SBO Proposals or Proposals utilizing Company offered and owned sites.

- Project infrastructure and point of interconnection must be located outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017), and not located within a Tsunami Evacuation Zone.
- Proposals must meet the grid-charging requirements of Section 1.2.11.
- Standalone energy storage Proposals or Proposals for generation paired with energy storage that intend such storage to meet the Company’s ~~energy storage need~~Storage Requirement must specify a GCOD no later than required in Section 1.2.14.
- Generation only Proposals or generation paired with energy storage Proposals that are not intended to meet the Company’s ~~energy storage need~~Storage Requirement must specify a GCOD no later than required in Section 1.2.14.

4.3 Threshold Requirement Assessment

Proposals that meet all the Eligibility Requirements will then be evaluated to determine compliance with the Threshold Requirements, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to provide this information or meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer. The Threshold Requirements for this RFP are the following:

- **Site Control:** The Proposal must demonstrate that the Proposer has Site Control for all real property required for the successful implementation of a specific Proposal at a Site not controlled by the Company, including any Interconnection Facilities for which the Proposer is responsible. The need for a firm commitment is necessary to ensure that Proposals are indeed realistic and can be relied upon as the Company moves through the remainder of the RFP process. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified and will be considered in determining whether the Proposal meets the Site Control threshold.

To meet this Site Control requirement, Proposers must do one of the following:

- Provide documentation confirming (1) that the Proposer has an existing legally enforceable right to use and control the Site, either in fee simple or under leasehold for a term at least equal to the term of the PPA or ESPPA (“Site Control”) as specified in the Proposer’s Proposal (taking into account the timelines set forth in this RFP for selection, negotiation, and execution of a PPA or ESPPA and PUC approval), and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal; or
- Provide documentation confirming, at a minimum, (1) that the Proposer has an executed binding letter of intent, memorandum of understanding, option agreement, or similar document with the land owner (a “binding commitment”) which sets forth the general terms of a transaction that would

grant the Proposer the required Site Control, and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal. The binding commitment does not need to be exclusive to the Proposer at the time the Proposal is submitted and may be contingent upon selection of the Proposal to the Final Award Group. If multiple Projects are provided a binding commitment for the same Site, the documents granting the binding commitments must not prevent the Company from choosing the Proposal that otherwise would have been selected.

- **Government/Public Lands Only:** The above two bullet points may not be feasible where government or publicly-owned lands are part of the Site or are required for the successful implementation of the Proposal. In such a case, at a minimum the Proposer must provide a credible and viable plan, including evidence of any steps taken to date, to secure all necessary Site Control for the Proposal, including but not limited to evidence of sufficient progress toward approval by the government agency or other body vested with the authority to grant such approval (as demonstrated by records of the agency). The Proposer will still be required, however, to demonstrate Site Control as required in the applicable RDG PPA or ESPPA should the Proposal be selected to the Final Award Group.
- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the applicable RDG PPAs or the ESPPA. Proposals should include sufficient documentation to support the stated claim that the Facility will be able to meet the Performance Standards (including the Project's ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component). The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.
- **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications (i.e., a PPA) at the scale being proposed. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.
- **Experience of the Proposer:** The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer's Project team must have experience in financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one (1) electricity generation project, including all components of the project (i.e., storage or other attributes), similar in size, scope, technology, and structure to the Project being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information in its Proposal's RFP Appendix B

Section 2.13 tables demonstrating that at least one member of the Proposer's team (identified in the Proposal) has specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining projects similar to the Project being proposed.

- **Credit/Collateral Requirements:** Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- **Available Circuit Capacity:** The output capacity of the proposed Project (including Contingency Storage as applicable) must not exceed the available capacity of the 46 kV circuit to which it will interconnect except in cases where the Proposer will bear the cost of 46 kV transmission conductor upgrade as noted in Section 2.2.3. If a 138 kV transmission interconnection is proposed, the output capacity of the proposed Project must not exceed the thermal limit of that 138 kV-level circuit. (see Section 2.2.2).
- **Viability of Proposer's Financial Plan:** Proposers must provide a basic financial plan for the Project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for Project financing.
- **Financial Compliance:** The proposed Project must not cause the Company to be subject to consolidation, as set forth in Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 810, Consolidation ("ASC 810"), as issued and amended from time to time by FASB. Proposers are required to state to the best of their knowledge, with supporting information to allow the Company to verify such conclusion, that the Proposal will not result in the Seller under the PPA being a Variable Interest Entity ("VIE") and result in the Company being the primary beneficiary of the Seller that would trigger consolidation of the Seller's finances on to the Company's financial statements under FASB ASC 810. The Company will perform a preliminary consolidation assessment based on the Proposals received. The Company reserves the right to allow a Proposal to proceed through the evaluation process through selection of the Priority List and work with the Proposer on this issue prior to or during PPA negotiations.
- **Community Outreach:** Gaining community support is an important part of a Project's viability and success. A comprehensive community outreach and communications plan ("Community Outreach Plan") is an essential roadmap that guides a developer as they work with various communities and stakeholders to gain their support for a Project. Proposers must include a Community Outreach Plan that describes the Proposer's commitment to work with the neighboring community and stakeholders and to provide them timely Project information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, community scoping (including stakeholders and community concerns), Project benefits, government approvals, development process (including Project schedule), and a comprehensive communications plan.

Proposers need to also be mindful of the Projects' potential impacts to historical and cultural resources. At a minimum, Proposers should identify: (1) any valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist. Also, at a minimum, Proposers should have already contracted with a consultant with expertise in this field to begin a cultural impact assessment for the Project.

4.4 Initial Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Price-related criteria will account for sixty percent (60%) of the total score and non-price-related criteria will account for forty percent (40%) of the total score. The non-price criteria and methodology for applying the criteria are explained in [Section 4.4.2](#).

The Company will employ a closed-bidding process for this solicitation in accordance with [Part IV.H.3](#) of the Framework where the price and non-price evaluation models to be used will not be provided to Proposers. However, the Company will provide the Independent Observer with all necessary information to allow the Independent Observer to understand the evaluation models and to enable the Independent Observer to observe the entire analysis to ensure a fair process. The evaluation models will be finalized prior to the receipt of Proposals.

4.4.1 Initial Evaluation of the Price Related Criteria

For the initial price analysis, an equivalent energy price (Levelized \$/MWh) will be calculated for each renewable generation and renewable generation with energy storage proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), Price for Purchase of Electric Energy (\$/MWh), and the Net Energy Potential (“NEP”) RFP Projection (MWh) information defined in RFP Sections 3.9 and 3.10.

For energy storage only proposals, a levelized energy price (Levelized \$/MWh) will be calculated for each energy storage Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the facilities' energy arbitrage capability.

For standalone Contingency Storage Proposals, and for the Contingency Storage portion of a renewable energy project paired with storage, a ~~levelized~~ energy price (~~Levelized \$/MWh(\$/MW)~~) will be calculated for each Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the facility's Contingency Storage energy capability.

In order to fairly evaluate Proposals with different technologies and characteristics ~~while using an equivalent energy price in Levelized \$/MWh at this stage in the evaluation,~~ the Company will group Proposals into technology-based evaluation categories, as applicable. For example:²⁴ (1) Wind generation (MWh) only; (2) Wind generation (MWh) and Energy storage; (3) Solar generation (MWh) only; (4) Solar generation (MWh) and Energy storage; (5) Energy storage only; (6) Contingency storage only; (7) Energy storage and Contingency storage; (8) Wind generation (MWh), Energy Storage, and Contingency Storage; and (9) Solar generation (MWh), Energy storage, and Contingency Storage.

The Eligible Proposal with the lowest LEP in each evaluation category will receive 600 points. All other Eligible Proposals in that evaluation category will receive points based on a proportionate reduction using the percentage by which the Eligible Proposal's LEP exceeds the lowest LEP in that evaluation category. For example, if a Proposal's LEP is ten percent (10%) higher than the lowest LEP in that evaluation category, the Proposal will be awarded 540 points (that is, 600 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal within each evaluation category.

4.4.2 Initial Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated on each of the eight (8) non-price criteria categories set forth below:

- Community Outreach and Cultural Resource Impacts
- State of Project Development and Schedule
- Performance Standards
- Environmental Compliance and Permitting Plan
- Experience and Qualifications
- Financial Strength and Financing Plan
- RDG PPA or ESPPA Contract Exceptions
- Guaranteed Commercial Operations Date

Each of the first three criteria – Community Outreach and Cultural Resource Impacts, State of Project Development and Schedule, Performance Standards – will be weighted twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable).

²⁴ There may be other technologies that are offered in this RFP. This list is illustrative of how technology-based evaluation categories will be established for the Initial Evaluation.

The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each evaluation category with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level²⁵ for four (4) or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed Project.

The Companies' evaluation of the non-price criteria will be based on the materials provided by a Proposer in its Proposal. Acceptance of any Proposal into the Final Award Group shall not be assumed or construed to be an endorsement or approval that the materials provided by Proposer are complete, accurate or in compliance with applicable law. The Companies assume no obligation to correct, confirm or further research any of the materials submitted by Proposers. Proposers retain sole responsibility to ensure their Proposals are accurate and in compliance with all laws.

The non-price criteria are:

- **Community Outreach and Cultural Resource Impacts** – Gaining community support is an important part of a Project's viability and success. An effective Community Outreach Plan will call for early meaningful communications with stakeholders and will reflect a deep understanding and respect for the community's desire for information to enable them to make informed decisions about future projects in their communities. Therefore, Proposals will be evaluated on the quality of the Community Outreach Plan to inform the Project's impacted communities. Proposers need to also be mindful of the Project's potential impacts to historical and cultural resources. Proposers should at least identify (1) valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

At a minimum, Proposals should include a Community Outreach Plan that describes the Proposer's commitment to work with the neighboring community and stakeholders and to provide timely Project information during project development, construction and operation. The Community Outreach Plan shall include, but not be limited to the following:

²⁵ A score of 3 is the "meets minimum standards" level that a Proposal must achieve in at least five (5) criteria.

- 1) Project description. A thorough description including a map of the location of the Project. This information will help the community understand the impact that the Project may have on the community.
- 2) Community scoping. Identify stakeholders (individuals, community leaders, organizations), community issues and concerns, and community sentiment.
- 3) Project benefits. An explanation of the need for the Project. This will help the community to understand how the Project might benefit their community.
- 4) Government approvals. Required government permits and approvals, public hearings and other opportunities for public comment. This information will help the community to understand the level of public scrutiny and participation that might occur for the Project and the opportunities to provide public comments.
- 5) Development process. A Project schedule that identifies key milestones will facilitate the community's understanding of the development process.
- 6) Communications Plan. A communications plan including a detailed community outreach schedule that will keep the affected communities and stakeholders informed about the Project's outreach efforts during early Project development period through construction and operations.

Preference will be given to Proposers who have already identified established contacts to work with the local community, have used community input to incorporate changes to the final design of the Project and mitigate community concerns, have proposed a community benefits package (including details of the community recipients and benefits package), or have community consultants as part of the Project team doing business in Hawai'i that have successfully worked with communities in Hawai'i on the development of two or more energy projects or projects with similar community issues. These criteria are aligned with the Companies' community engagement expectation whereby all developers will be required to engage in community outreach prior to signing a PPA with the Companies. This process is also outlined in RFP Section 5.3.

Also, at a minimum, Proposers should have already contracted with a consultant with expertise in such field to begin a cultural impact assessment for the Project. Preference will be given to Proposals that are further along in the assessment process and are able to provide a mitigation/action plan or are able to provide a date for when a mitigation/action plan will be available that addresses any identified cultural resource issues.

- **State of Project Development and Schedule** – Projects that are further along in development generally have lower project execution risk and a greater probability of being able to be successfully placed into service prior to the GCOD (specifically identified in each Proposal). At a minimum, Projects should demonstrate how they plan to capture any ITC safe harbor and reach their GCOD specified, including identification of risks and schedule assumptions. (Schedules must identify the IRS completion date and PUC approval dates assumed.) Proposals should also demonstrate, via a detailed critical path schedule, that there is a high likelihood that the Project will be able to reach commercial operations as

specified. Proposals shall include a Gantt chart that clearly illustrates the overall schedule and demonstrates achievement of any ITC safe harbor, if applicable, and commercial operations by their specified GCOD. The Gantt chart shall include task durations and dependencies, identify tasks that will be fast tracked, and identifies slack time and contingencies. This criterion will also look at the high-level Project costs set forth in the Proposal including: costs for equipment, construction, engineering, Seller-Owned Interconnection Facilities, Company-Owned Interconnection Facilities, land, annual O&M, the reasonableness of such costs and the assumptions used for such costs. Project costs that do not appear reasonable for a project of the size proposed may result in a lower ranking for this criterion if the Company reasonably determines that the cost information is unrealistic based on prior experience in the market which may result in a risk that the Project can be built on time and for the price proposed by the Proposer. The Company reserves the right to discuss any cost and financial information with a Proposer to ensure the information provided is accurate and correct.

- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the RDG PPA or the ESPPA. The Company will review the Proposal information received, including design documents and operating procedures materials provided in the Proposal, and evaluate whether the Project as designed is able to meet the Performance Standards identified in the RDG PPA or ESPPA (including the Project's ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component) and in this RFP. At a minimum, in addition to meeting the Performance Standards, the Proposals should include sufficient documentation, provided in an organized manner, to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed on a timely basis. Preference will be given to Proposals that provide detailed technical and design information showing how each standard can be met by the proposed Facility. Preference will also be provided to proposed Projects that offer additional capabilities (e.g., Black-Start, Grid-Forming).
- **Environmental Compliance and Permitting Plan** – This criterion relates to the potential (short- and long-term) environmental impacts associated with each project, the quality of the plan offered by the Proposer to mitigate and manage any environmental impacts (including any pre-existing environmental conditions), and the plan of Proposers to remain in environmental compliance over the term of the contract. These impacts are reflected on a technology-specific basis. Completing any necessary environmental review and obtaining the required permitting in a timely manner is also important and Proposals will be evaluated on their plan to identify, apply for, and secure the required permits for the Project, any permitting activity that has been completed to date, including having initial discussions with U.S. Fish and Wildlife and the State of Hawai'i Department of Land and Natural Resources' Division of Forestry and Wildlife, to the extent applicable, prior to submitting a Proposal, and the degree of certainty offered by

the Proposer in securing the necessary permits.

At a minimum, proposed Projects should be expected to have minimal environmental impact for most areas and Proposals should provide a comprehensive plan to mitigate the identified potential or actual significant environmental impacts to remain in environmental compliance. The proposed mitigation plans should be included in the Project timeline. Preference will be given to Proposals that provide a more detailed plan as well as those that have proactively taken steps to mitigate potential environmental impacts.

Also, this criterion requires that, at a minimum, Proposers should have identified, and disclosed in their Proposal(s), all major permits, approvals, appurtenances and entitlements (including applicable access, rights of way and/or easements) (collectively, the “permits”) required and have a preliminary plan for securing such permits. Preference will be given to Proposals that are able to provide a greater degree of certainty that its plan to secure the required permits is realistic and achievable, or have already received all or a majority of the required permits. ~~The Proposer must provide a credible and viable plan, including evidence of any steps taken to date, The Proposer should disclose all identified (a) discretionary permits required, i.e., those requiring public or contested case hearings and/or review and discretionary approval by an appropriate government agency and (b) ministerial conditions without discretionary approval conditions. In all cases, the Proposer must provide a credible and viable plan~~ to secure all necessary and appropriate permits necessary for the project. For example, if the project is located within an agricultural district, the Proposer shall provide evidence of Proposer’s verification with the appropriate government agency that the project complies with HRS Section 205-2 and Section 205-4.5, relating to solar energy facilities placed on agricultural land, provided, however that ~~reliance upon an exemption to the requirements of HRS Section 205-2 and/or Section 205-4.5 available under HRS Section 205-6, shall not satisfy this requirement unless the exemption has already been granted for the desired use and Proposer is in possession of a valid, unexpired and nonappealable special use permit issued under such section at the time Proposer’s Proposal(s) is/are submitted in response to this RFP, and provided further, that reliance upon an amendment to land use district boundary lines available under HRS Section 205-4 shall also not satisfy this requirement unless such amendment has already been granted for the desired use and Proposer is in possession of a valid, unexpired and nonappealable order amending such land use district boundary or boundaries to permit Proposer’s desired use at the time Proposer’s Proposal(s) is/are submitted in response to this RFP where a special use permit (under Section 205-6), exemption (under Section 205-6), or amendment to land use district boundary lines (under Section 205-4) is required to secure such compliance, Proposer shall identify the need for such permit, exemption or amendment and provide a list of required prerequisites and/or conditions and a realistic timeline necessary to obtain such permit, exemption or amendment satisfactory for Proposer to still meet its designated GCOD.~~

- **Experience and Qualifications** –Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining projects (including all components of the project) of similar size, scope and technology. At a minimum, Proposals must show via the table format specified in RFP Appendix B Section 2.13 that at least one (1) member must have specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one electricity generation project including all components of the project similar to the Project being proposed. Preference will be given to Proposers with experience in successfully developing multiple projects that are similar to the one being proposed and/or that have prior experience successfully developing and interconnecting a utility scale project to the Company’s System.
- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the Project as well as assesses the financial strength and capability of the Proposer to develop the Project. A complete financial plan addresses the following issues: Project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the Project. The financial strength of Proposers or their credit support providers will be considered, including their credit ratings. The financing participants are expected to be reasonably strong financially. Developers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody’s, Fitch) will also be given preference, with those that have higher credit ratings ranked higher.
- **RDG PPA or ESPPA Contract Proposed Modifications** –Proposers are encouraged to accept the contract terms identified in the model agreements in their entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model agreements without edits will receive a higher score and will be the only proposals that can achieve the highest scoring for this non-price evaluation. Technology-specific or operating characteristic-required modifications, with adequate explanation as to the necessity of such modifications, will not jeopardize a project’s ability to achieve the highest score. Proposers who elect to propose modifications to the model agreements shall provide a Microsoft Word red-line version of the applicable document identifying specific proposed modifications to the model agreement language, as well as a detailed explanation and supporting rationale for each modification. General comments without proposed alternate language, drafting notes without explanation or alternate language, footnotes such as “parties to discuss,” or a reservation of rights to make additional modifications to the model agreements at a later time are unacceptable, will be considered unresponsive, and will result in a lower score. The Company and Independent Observer will evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal.

- **Guaranteed Commercial Operations Date:** The Company is procuring resources and incorporating projects onto its System in Stages as part of its long-term plan to meet RPS goals. Proposers will be held to the Guaranteed Commercial Operations Date identified in their Proposal. The GCOD will be a Guaranteed Milestone and will be inserted without amendment into the RDG PPAs or ESPPA, as applicable. Proposers that are able to design for and commit to an earlier GCOD will be given more favorable scoring. Proposers must have met the GCOD requirements of RFP Section 1.2.14 prior to being evaluated in this non-price criterion.

4.5 Selection of a Priority List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 60% price-related criteria / 40% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both price and non-price scores described above, will result in a ranking of proposals within each technology-based evaluation category.

The Company will determine a Priority List from the highest scoring Proposals for each technology-based evaluation category. Each Priority List will include a sufficient number of projects, but not less than two (2) Proposals per technology-based evaluation category, such that the Company can assemble portfolio combinations that meet or exceed the renewable energy MWh and storage MW and MWh targets for comparison in the Detailed Evaluation. The Companies will develop the Priority Lists in consultation with the Independent Observer. The Companies reserve the right, in consultation with the Independent Observer, to limit the projects allowed for further consideration in the initial evaluation to projects that fall within 15% of the lowest price proposed per technology-based evaluation category. Selection to the Priority List does not assure an eligible Project's inclusion in the selection of the Final Award Group.

4.6 Best and Final Offer (BAFO)

4.6.1 The Company will solicit a Best and Final Offer from Proposers selected to a Priority List in a technology-based evaluation category. If the SBO is selected to a Priority List, the SBO will not be eligible to provide a Best and Final Offer and the original pricing submitted in its Self-Build Proposal will be used in the Detailed Evaluation. All other Proposers selected to a Priority List will have the opportunity to update (downward only)²⁶ the pricing elements in their Proposal to improve the competitiveness of their Proposal prior to being further assessed in the Detailed Evaluation phase. At this time, updates may only be made to the following pricing elements:

- Lump Sum Payment (\$/year) amount
- Price for Purchase of Electric Energy (\$/MWh) amount. Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy

²⁶ Proposers will only be allowed to adjust pricing elements downward. No upward adjustment to the pricing elements will be permitted or considered. All other characteristics of the Proposal and Facility capabilities must remain valid and unchanged (e.g., NEP, GCOD, etc.)

Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).

Proposers will not be allowed to increase their price²⁷ but may elect to maintain the same pricing submitted in their original Proposal. Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

- 4.6.2 If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.²⁸

4.7 Detailed Evaluation

The Best and Final Offers of the Priority List Proposals, from this RFP, the Best and Final Offers of the Short List Proposals for contingency storage from the Grid Services RFP, as well as original Self-Build Proposals if advanced to the Priority Listed Proposals, will be further assessed in the Detailed Evaluation to identify the Priority List Proposals that meet the variable renewable dispatchable generation MWh, energy storage MW and MWh targets, and contingency storage MW targets to determine the Proposals selected to the Final Award Group.

The Initial Evaluation for the Grid Services RFP and this RFP will occur in parallel. A combined evaluation for Grid Services FFR-1 and this RFP's Contingency Storage Proposals will take place after the completion of the BAFO rounds for each RFP, which will ensure that the proposals being considered have met eligibility and threshold requirements, represent the highest overall ranked projects based on price and non-price criteria, and have incorporated Best and Final pricing. If possible based on the number and quality of Proposals received, the Company will attempt to include in the joint evaluation Projects totaling 50 MW of Contingency Storage on the Priority List for Contingency Storage for the Renewable RFP and 50 MW of FFR-1 on the Short List for the Grid Services RFP. An Energy Storage Only ~~Levelized-Price~~ (\$ / ~~MWh~~MW) will be calculated for each FFR-1 proposal and proposed Contingency Storage, including both standalone storage projects as well as storage projects paired with renewable generation. The Company will evaluate all FFR-1 and Contingency Storage proposals and rank them by lowest Energy Storage Only ~~Levelized-Price~~. The top-rated proposals (lowest cost) summing to 50 MW will be selected as Contingency Storage Proposal awardees. For renewable energy projects paired with storage which include a Contingency Storage option: a) if the project is selected as a Contingency Storage Proposal awardee, in order for the project to be confirmed to the Final Award Group (such confirmation is subject to the further considerations described below), it must also be included in the portfolio of projects selected to meet the energy requirements of this RFP; and b) if the project is not selected as a Contingency Storage Proposal awardee, a variation of the project without

²⁷ Proposers will not be allowed to increase the pricing in their Proposals to address interconnection and/or system upgrade costs or for any other reason.

²⁸ The Company reserves the right, in consultation with the Independent Observer, to adjust the parameters of the BAFO, in the unlikely event that system needs have evolved in a way that the Proposals received do not fully address.

contingency storage may still continue to be considered in this RFP as a renewable energy project paired with storage that meets the energy requirements of this RFP.

The Company will build Portfolios for evaluation that meet ~~both~~ the energy MWh target, the ~~storage MW and MWh~~ Storage Requirement target, and the Contingency Storage target of this RFP.

In order to ~~satisfy the storage MW and MWh~~ fulfill the Storage Requirement target, both ~~Projects that provide standalone energy storage only as well as Projects that provide both variable renewable dispatchable projects and generation MWh and energy projects paired with storage can satisfy intended to meet the storage requirement, in the manner described herein~~ Storage Requirement will be evaluated together. The Company expects that for Projects that provide energy storage only, such storage facilities will be charged by available grid resources. Such standalone storage projects that have a GCOD of June 1, 2022 or sooner and meet the interconnection requirements in Section 1.2.14 will be evaluated as meeting the ~~storage MW and MWh requirements~~ Storage Requirement of this RFP based on 100% of their respective proposed MW and MWh quantities. ~~Energy storage~~ Generation projects ~~that are~~ paired with ~~variable renewable dispatchable generation facilities~~ storage that have a GCOD of June 1, 2022 or sooner and meet the interconnection requirements in Section 1.2.14²⁹ will be evaluated as meeting the ~~storage MW and MWh requirements~~ Storage Requirement of this RFP based on a percentage of their respective proposed MW and MWh quantities, based on the maximum percentage of charging from the grid proposed to be allowed for the paired storage facility, as determined by the table below:³⁰

Paired Project Battery Allowed Percentage	Percentage of Paired Battery Rating towards Storage Requirements <u>Requirement</u>
Grid Charging	
0%	10%
5%	20%
10%	40%
15%	60%

²⁹ Standalone storage projects or storage projects paired with variable renewable dispatchable generation facilities that have a GCOD of June 1, 2022 or later, or that do not meet the interconnection requirements of Section 1.2.14 will not have any percentage of their paired battery MW rating counted towards ~~storage MW requirements~~ Storage Requirement.

³⁰ The Company acknowledges that the pricing proposed for a variable renewable dispatchable generation facility that is paired with a storage facility will vary depending on the amount of grid charging of the storage permitted in the proposal.

20%	80%
25%	100%

The detailed evaluation process will consist of assessment of combinations of Proposals from the Priority Lists that meet the energy, storage, and Contingency Storage targets of this RFP (“Portfolios”). A production simulation iteration will be created for each Portfolio to evaluate the Total Net Cost (Cost and Benefits) of integrating the Portfolio onto the Company’s System. Each Portfolio’s Total Net Cost will be compared against the Base Case, described further below.

The Company intends to use a computer model for this analysis. The evaluation will be based on the Total Net Cost (Costs and Benefits) to the Company of integrating the combination of Priority List Proposals onto the Company’s System which includes:

1. The cost to dispatch the combination of Projects and the energy and storage purchased;
2. The fuel cost savings (benefits) and any other direct savings (IPP savings from dispatchable fossil fuel savings) resulting from the displacement of generation by the Priority List Proposals, including consideration of round-trip efficiencies for facilities with storage;
3. The estimated increase (or decrease) in operating cost, if any, incurred by the Company to maintain system reliability; and
4. The cost of imputed debt, if applicable.

As noted, the Company will take into account the cost of rebalancing its capital structure resulting from any debt or imputed debt impacts associated with each Proposal (including any costs to be incurred by the Company, as described above, that are necessary in implementing the Proposal). The Company proposes to use the imputed debt methodology published by S&P that is applicable to the Proposal being evaluated. S&P views long-term PPAs as creating fixed, debt-like financial obligations that represent substitutes for debt-financed capital investments in generation capacity. By adjusting financial measures to incorporate PPA-fixed obligations, greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy new load are achieved.

During the Detailed Evaluation and before the Proposals advance to the Final Award Group, the Company will perform load flow analyses to determine if certain Project combinations introduce transmission circuit constraints that will factor into the selection process. This is to address the possibility that even though sufficient line capacity was identified for an individual Project, large Projects on separate transmission circuits that are in close proximity with each other could introduce additional transmission circuit constraints. The Projects selected must not have any additional constraints imposed based on the load flow analysis to advance to the Final Award Group. However, the Company reserves the right, in consultation with the Independent Observer, to allow minor modifications to a Proposal to avoid such additional constraints. If such

modification resulted in a reduced size of the Facility, the pricing proposed would also need to be revised. Under no circumstances would a Proposer be allowed to increase their price as a result of such minor modification.

Also in the Detailed Evaluation, other factors will be validated to ensure that the final combination of Projects provides the contemplated benefits that the Company seeks. The Company will evaluate the collateral consequences of the implementation of a combination of Projects, including consideration of the geographic diversity, resource diversity, interconnection complexity, and flexibility and latitude of operation control of the Projects.

The Company may assess additional combinations of Projects if requested by the Independent Observer and if the time and capability exist to perform such analyses.

4.8 **Selection of the Final Award Group**

Based on the results of the Detailed Evaluation and review of the results with the Independent Observer, the Company will select a Final Award Group from which to begin contract negotiations. The Company intends to select projects that meet the targeted needs and provide customer benefits. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in the Final Award Group.

Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of a PPA.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Priority List or the Final Award Group, the Company reserves the right, at any time prior to submission of the PPA Application with the PUC application, in consultation with the Independent Observer, to disqualify the Proposer from the RFP. If discovery of the incorrect or misrepresented information is made after the Company has filed its PUC application for approval of the PPA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a proposal, including failure to reach agreement to the PPA, the Company, taking into consideration the timing of such removal and the current status of the Company's needs under the RFP, in consultation with and concurrence from the Independent Observer, will review the Priority List to determine (1) if another proposal should be added to the Final Award Group; (2) if either of the Contingency Plan or Parallel Plan should be pursued; or (3) if the remaining proposals in the Final Award Group should remain unchanged.

Order No. 36536 "directs the Companies to work with the [Independent Observers] to increase bid transparency within the RFP process, while maintaining an appropriate level

of confidentiality regarding bids and bidders.” The Companies agree that it is desirable for the RFP process to be as transparent as possible while maintaining the confidentiality of Proposer and Proposal information. The type and quantity of information that can be disclosed will not be known until the Companies and the Independent Observer have a better understanding of the number and types of proposals received and whether such information can be easily anonymized. The Companies will work with the Independent Observers to determine an appropriate level of disclosure after Proposals are received with a goal of disclosing more information than was disclosed in Stage 1.

Chapter 5: Post Evaluation Process

5.1 Interconnection Requirements Study Process

A complete package of IRS Data Request worksheets and project single line diagram(s) shall be submitted with each Proposal. For Projects with a proposed GCOD in 2022, the models for equipment and controls, list(s) to clearly identify the components and respective files (for inverters and power plant controller), and complete documentation with instructions, shall be submitted within 60 days thereafter. See Section 2.11.1 of Appendix B. For all other Projects, the same complete submittal shall be due within 60 days after selection to the Final Award Group. PSSE Generic models, PSSE User models, and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the Company’s PPA performance requirements. These must be checked for functionality by the ~~bidder~~Proposer or its vendors and consultants prior to submission to the Company. Similar and fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company. PSSE generic models shall be provided promptly after the PSSE user models have been approved by the Company.

After proposals and models are submitted, the Company will inspect the data packages for general completeness. For any incomplete submissions, a list of missing or non-functional items will be provided. Proposers will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove Proposals from the Priority List or Final Award Group, or may terminate PPA negotiations or executed PPAs if their submission requirements are deemed incomplete for the lack of requested models. Proposals that are complete will be considered for further evaluation. A formal, technical model checkout will be deferred until a later date when IRS Agreements and deposits are in place, so that the expert subject matter work can be provided by the Company’s IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for each selected project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for each project, (b) any considerations that are specific to a particular project and location, and (c) system impact analyses of the projects as a group. Interconnection cost and schedule, including cost of any required system upgrades, will be determined in a subsequent Facilities Study.

The technical model checkouts will be conducted first. Upon identification of any functional problems or deficiencies, corrective action shall be taken immediately and on an interactive basis so that the problems or deficiencies can be resolved within 15 Days, including re-submission of data and updated models, or the Project shall be deemed withdrawn. At the discretion of the Company and provided that there is a demonstration of good faith action to minimize delay that would affect the schedule for IRS analyses, a second round of model checkout and problem solving may proceed. Thereafter, any notice that a Project is deemed withdrawn for lack of completeness shall be final. Subject to consultation with the Independent Observer, failure to provide all requested material within the time(s) specified, or changes to the data provided after the due date(s), shall result in elimination from the Final Award Group.

Proposers shall be responsible for the cost of the IRS, under separate agreements for the System Impact Study and the Facilities Study. The overall IRS will provide information including, but not limited to, an estimated cost and schedule for the required Interconnection Facilities for a particular Project and any required mitigation measures. Proposers will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. Upon reviewing the results of the IRS, Proposers will have the opportunity to declare the PPA null and void in the event that the estimated interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal. See Section 12.4 of the RDG PPA or Section 2.3(b) of the ESPPA.

5.2 **Contract Negotiation Process**

Within five (5) business Days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. Given the significant scope of the RFP, and depending on the number of Projects selected to the Final Award Group, the Company will prioritize which Projects to negotiate with first. The Company will first prioritize Projects intending to meet the identified 200 MW capacity need. Prioritization will take into consideration the GCOD of the Project, the benefits to and the needs of the Company's System, and extensiveness of the exceptions to the model PPA. While PPA negotiations and submission of executed PPAs for approval will take place on a rolling basis, the Company's goal is to begin to complete this process for the first projects within six (6) months of notification of intent to enter contract negotiations. The IRS may not be completed at such time. The Company intends to execute and file the PPA with the PUC for approval and later amend the PPA to include the results of the IRS.

5.3 **Community Outreach and Engagement**

The public meeting and comment solicitation process described in this Section and Section 29.21 of the PPA model RDG PPA or Section 27.17 of the model ESPPA

(Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by a Proposer. Within 30 Days of the start of PPA negotiations, Proposers shall have provided the Company with an updated comprehensive Community Outreach Plan to work with and inform neighboring communities and stakeholders and to provide them timely information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, Project stakeholders, community concerns and Proposer's efforts to address such concerns, Project benefits, government approvals, Project schedule, and a comprehensive communications plan. Upon selection to the Final Award Group, a Proposer's Community Outreach Plan shall be a public document available to the public on the Proposer's website and upon request. The Proposer shall also provide the Company with links to their Project website and Community Outreach Plan, which the Company will post on the Company's website. Prior to the execution date of the PPA, Proposers shall also host a public meeting in the community where the proposed Project is to be located for community and neighborhood groups in and around the vicinity of the Project Site that provided the neighboring community, stakeholders and the general public with: (i) a reasonable opportunity to learn about the proposed Project; (ii) an opportunity to engage in a dialogue about concerns, mitigation measures, and potential community benefits of the proposed Project; and (iii) information concerning the process and/or intent for the public's input and engagement, including advising attendees that they will have thirty (30) calendar days from the date of said public meeting to submit written comments to Company and/or Proposer for inclusion in the Company's submission to the PUC of its application for a satisfactory PUC Approval Order. The Proposer shall collect all public comments, and then provide the Company copies of all comments received in their original, unedited form, along with copies of all comments with personal information redacted and ready for filing. If a PPA is executed by the Proposer and the Company, the Company may submit any and all public comments (presented in its original, unedited form) as part of its PUC application for this Project. Proposers shall notify the public at least three weeks in advance of the meeting. The Company shall be informed of the meeting. The Company will provide Proposers with detailed instructions regarding the community meeting requirement after the selection of the Final Award Group. (For example, notice will be published in county or regional newspapers/media, as well as media with statewide distribution. The Proposer will be directed to notify certain individuals and organizations. The Proposer will be provided templates to use for the public meeting notices, agenda, and presentation.) Proposers must also comply with any other requirement set forth in the PPA relating to Community Outreach.

Following the submission of the PUC application for the Project, and prior to the date when the Parties' statements of position are to be filed in the docketed PUC proceeding for the Project, the Proposer shall provide another opportunity for the public to comment on the proposed Project. The Proposer's statement of position filed in the docket associated with the Project will contain an attachment including those comments.

The Proposer shall be responsible for community outreach and engagement for the Project, and that the public meeting and comment solicitation process described in this

section do not represent the only community outreach and engagement activities that can or should be performed.

5.4 **Greenhouse Gas Emissions Analysis**

Proposers whose Proposal(s) are selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or Company's consultant(s) upon request all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support of a PUC application for approval of the PPA for the project (the "GHG Review"). Proposers shall be responsible for the full cost of the GHG Review associated with their project under a separate agreement between the Proposer and the Company. The GHG Review is anticipated to address whether the GHG emissions that would result from approval of the PPA and subsequent to addition of the Project to the Company's system are greater than the GHG emissions that would result from the operations of the Company's System without the addition of the Project, whether the cost for renewable, dispatchable generation, and/or energy storage services as applicable under the PPA is reasonable in light of the potential for GHG emissions, and whether the terms of the PPA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 **PUC Approval of PPA**

Any signed PPA resulting from this RFP is subject to PUC approval as described in the RDG PPA, including Article 12 and Section 29.20 thereof, or Article 24 of the ESPPA.

5.6 **Facility In-Service**

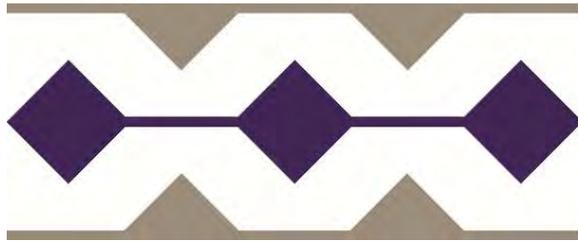
In order to facilitate the timely commissioning of the numerous projects required to meet the MW and MWh targets of this RFP, the Company requires the following be included with the 60% design drawings: relay settings and protection coordination study, including fuse selection and ac/dc schematic trip scheme.

For the Company to test the Facility, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire Facility must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the IPP and ready for operation prior to Company testing.

If approved drawings are not available, or if the Facility is otherwise not test ready as scheduled, the Project will be moved to the end of the Company's testing queue. If tests are not completed within the allotted scheduled testing time, the Project will be moved to the end of the Company's testing queue. The IPP will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to PPA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the PPA.

EXHIBIT 6

Redline of Final Renewable RFP for the Island of Maui
against July 10, 2019 Proposed Final Draft RFP



**Maui
Electric**

~~DRAFT~~ REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

AND

ENERGY STORAGE

ISLAND OF MAUI

~~JULY 10~~AUGUST 22, 2019

Docket No. 2017-0352

Table of Contents

Chapter 1: Introduction and General Information	1
1.1 Authority and Purpose of the Request for Proposals	2
1.2 Scope of the RFP	2
1.3 Competitive Bidding Framework	56
1.4 Role of the Independent Observer	6
1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual.....	6
1.6 Company Contact for Proposals	7
1.7 Proposal Submittal <u>Submission</u> Requirements	7
1.8 Proposal Fee.....	89
1.9 Procedures for the Self-Build or Affiliate Proposals	9
1.10 Dispute Resolution Process.....	11
1.11 No Protest or Appeal.....	12
1.12 Modification or Cancellation of the Solicitation Process	12
Chapter 2: Resource Needs and Requirements	13
2.1 Performance Standards	13
2.2 Transmission System Information	13
2.3 Interconnection to the Company System	14
Chapter 3: Instructions to Proposers	15
3.1 Schedule for the Proposal Process	15
3.2 Company RFP Website / Electronic Procurement Platform.....	16
3.3 Information Conferences	17
3.4 Preparation of Proposals	17
3.5 Organization of the Proposal	18
3.6 Proposal Limitations	18
3.7 Proposal Compliance and Bases for Disqualification.....	19 <u>18</u>
3.8 Power Purchase Agreement	19
3.9 Pricing Requirements.....	21
3.10 Project Description.....	22 <u>23</u>
3.11 Sites Identified by the Company.....	23 <u>24</u>
3.12 Confidentiality	24

3.13	Credit Requirements Under the PPA	25
Chapter 4: Evaluation Process and Evaluation Criteria		26
4.1	Proposal Evaluation and Selection Process	26
4.2	Eligibility Requirements Assessment	27
4.3	Threshold Requirements Assessment	28
4.4	Initial Evaluation – Price and Non-Price Analysis	31
4.5	Selection of a Priority List	37 <u>38</u>
4.6	Best and Final Offer (BAFO)	38
4.7	Detailed Evaluation.....	39
4.8	Selection of the Final Award Group	41
Chapter 5: Post Evaluation Process		42
5.1	Interconnection Requirements Study Process.....	42
5.2	Contract Negotiation Process.....	43
5.3	Community Outreach and Engagement	43
5.4	Greenhouse Gas Emissions Analysis.....	45
5.5	PUC Approval of PPA	45
5.6	Facility In-Service.....	45

List of Appendices

Appendix A	Definitions
Appendix B	Proposer's Response Package / IRS Data Sheet
Appendix C	Code of Conduct Procedures Manual
Appendix D	PowerAdvocate User Information
Appendix E	Mutual Confidentiality and Non-Disclosure Agreement
Appendix F	Description of Available Sites
Appendix G	Self-Build Option and Self-Build Option Team Certification Form
Appendix H	Interconnection Facilities and Cost Information
Appendix I	Rule 19 Tariff
Appendix J	Model PV RDG PPA
Appendix K	Model ESPPA
Appendix L	Model Wind RDG PPA

Chapter 1: Introduction and General Information

Maui Electric Company, Ltd. (“Maui Electric” or the “Company”) seeks proposals for the supply of qualified variable renewable dispatchable generation and energy storage for the Maui Electric System in accordance with this Request for Proposals (“RFP”).¹ The total amount of variable renewable dispatchable generation being solicited in this RFP is the capability to provide 295,000 megawatt hours (“MWh”) annually. The total amount of energy storage being solicited in this RFP is the capability to store and discharge ~~at least 58,400 MWh annually (energy equivalent to at least 160 MWh daily) per cycle~~ via a total nameplate capacity of at least 40 megawatts (“MW”). This MW and MWh storage capability is referred to herein as the “Storage Requirement.”

The Company or its Affiliate may submit a Proposal in response to this RFP subject to the requirements of this RFP.

The Company seeks variable renewable dispatchable generation projects paired with energy storage systems and standalone energy storage projects in this RFP. The Company intends to contract for variable renewable dispatchable generation projects paired with energy storage systems through this RFP using its Model Renewable Dispatchable Generation Power Purchase Agreement (“RDG PPA”), which treats variable generation facilities as fully dispatchable. The Company has created a photovoltaic (“PV”) version (the “PV RDG PPA”) and a wind version (the “Wind RDG PPA”) of its RDG PPA attached as Appendix J and Appendix L respectively.² If the proposed Project utilizes a technology other than PV or wind and/or contains components that are not encompassed by the RDG PPA, then the terms of the RDG PPA will be modified to address the specific technology and/or component.

The Company intends to contract for standalone energy storage projects through this RFP using its Model Energy Storage Power Purchase Agreement (“ESPPA”), pursuant to which Maui Electric will purchase energy storage services (i.e., capacity and ancillary services). The ESPPA is attached as Appendix K.²

Each successful Proposer will provide variable renewable dispatchable generation and/or energy storage to the Company pursuant to the terms of an RDG PPA or ESPPA, which will be subject to ~~PUC~~-review and approval by the State of Hawai‘i Public Utilities Commission (“PUC”).~~..~~

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4. The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Projects. The amount of generation and storage that the Company may acquire from this RFP depends on, among other things, the quality and cost-effectiveness of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company’s forecasts; transmission availability; and changes to regulatory or legal requirements. If attractive Proposals

¹ The Company is soliciting proposals for renewable dispatchable generation and energy storage in stages. The “Stage 1” RFPs were conducted in 2018. This is part of the “Stage 2” RFPs to be conducted in 2019.

² The RDG PPA for PV and Wind, and ESPPA for standalone energy storage, are available on the Company’s RFP website and through the PowerAdvocate platform for the RFP.

are received that will provide energy and energy storage in excess of the targeted amounts, the Company will consider selecting such Proposal(s) if benefits to customers are demonstrated.

All requirements necessary to submit a Proposal(s) are stated in this RFP. A description of the technical requirements for Proposers is included in the body of this RFP, Appendix B, and in the RDG PPA and ESPPA attached as Appendix J, K, and L.

All capitalized terms used in this RFP shall have the meaning set forth in the glossary of defined terms attached as Appendix A. Capitalized terms that are not included in Appendix A shall have the meaning ascribed in this RFP.

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. ~~3635636474~~ issued on ~~June 10~~ August 15, 2019 in Docket No. 2017-0352 as part of a procurement process established by the PUC.
- 1.1.2 This RFP is subject to Decision and Order (“D&O”) No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai‘i), which sets forth the PUC’s Framework for Competitive Bidding (“Framework” or “Competitive Bidding Framework”).
- 1.1.3 All Proposals with a generation component submitted in response to this RFP must utilize qualified renewable energy resource(s) as defined under the Hawai‘i Renewable Portfolio Standards (“RPS”) law.³ By statute, “Renewable Energy” means energy generated or produced using the following sources: (1) wind; (2) the sun; (3) falling water; (4) biogas, including landfill and sewage-based digester gas; (5) geothermal; (6) ocean water, currents, and waves, including ocean thermal energy conversion; (7) biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste; (8) biofuels; and (9) hydrogen produced from renewable energy sources.⁴
- 1.1.4 Proposers should review the Hawaiian Electric Companies’ Power Supply Improvement Plans, filed in Docket No. 2014-0183 on December 23, 2016 (“PSIP Update Report: December 2016” or “PSIP”). Consistent with the PSIP, the primary purpose of this RFP is to obtain variable renewable energy and energy storage so that the Company can continue to transform Maui’s power supply portfolio from fossil fuel-based generation to renewable-based generation ~~towards~~ to meet Hawai‘i’s 100% RPS requirement.

1.2 Scope of the RFP

- 1.2.1 The Company does not have a predetermined preference for a particular renewable energy generation or storage technology.

³ RPS requirements in Hawai‘i are codified in Hawai‘i Revised Statutes (“HRS”) §§ 269-91 through 269-95.

⁴ See HRS § 269-91.

- 1.2.2 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Project.
- 1.2.3 Proposals that will require system upgrades and the construction of which, in the reasonable judgment of the Company (in consultation with the Independent Observer), creates a significant risk that their Project's Guaranteed Commercial Operations Date ("GCOD") will not be met will not be considered in this RFP.
- 1.2.4 Projects submitted in response to this RFP must be located on the Island of Maui.
- 1.2.5 Proposers will determine their Project Site. Proposers have the option of submitting a Proposal using potential Sites offered and described in Section 3.11. Proposers must locate all Project infrastructure within areas of their Site that are outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017)⁵ and are not located within a Tsunami Evacuation Zone.⁶
- 1.2.6 Projects must interconnect to the Company's System at the 69 kV level.
- 1.2.7 Projects ~~Projects' size~~ must be greater than ~~5 MW~~ the threshold for a waiver from the Competitive Bidding Framework applicable to Maui. No single point of failure from the Facility shall result in a decrease in net electrical output greater than 20 MW. Additionally, in meeting the single point of failure requirement, if the proposed Facility exceeds 20 MW, the Facility must be segmented in equally sized capacities (MW). Each segment must have its own point of interconnection into the Maui Electric System that can be independently dispatched via the Company's energy management system. Revisions would need to be made to the RDG PPA or the ESPPA to account for multiple points of interconnection.
- 1.2.8 Contracts for projects that include a generation component selected through this RFP shall use the RDG PPA, as described in Section 3.8. Under the RDG PPA, the Company will maintain exclusive rights to fully direct dispatch of the Facility, subject to the availability of the resource and Section 1.2.11 below.
- 1.2.9 Contracts for standalone energy storage projects selected through this RFP shall use the ESPPA, as described in Section 3.8. Under the ESPPA, the Company will maintain exclusive rights to fully direct the charging and discharging of the Facility. Additionally, due to the critical nature and usage of the standalone energy storage to support the grid,

⁵ Hawai'i Climate Change Mitigation and Adaptation Commission. 2017. Hawai'i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai'i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai'i Department of Land and Natural Resources Contract No: 64064. This report is available at: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf

⁶ See Hawai'i Sea Level Rise Viewer at <https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>, and National Oceanic and Atmospheric Administration (NOAA) interactive map in partnership with the State of Hawai'i at <https://tsunami.coast.noaa.gov/#/>.

the ability to control and tune the Facility's response to certain grid events and conditions is an important aspect that will be required of these facilities.

- 1.2.10 Generation proposals must be submitted with an energy storage component. The energy storage component can be charged during periods when full potential export of the generation Facility is not being dispatched by the Company, and the storage component can be used to provide energy to the Company during other times that are beneficial to the system. An energy storage component that is paired with a generating Facility must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the RDG PPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the RDG PPA.

- 1.2.11 Energy storage components that are ~~coupled~~paired with a generation Facility must also be able to be charged from the grid at the direction of the Company as described in this section. To be eligible to meet this RFP's ~~MW storage requirement~~Storage Requirement as specified in Section 4.7, energy storage components must be grid-chargeable to the amount specified by Proposer from the ~~guaranteed commercial operation date~~ ("GCOD").GCOD.

For energy storage components that are ~~coupled~~paired with generating facilities, during the period that allows the Project to maximize and capture the benefits of the federal Investment Tax Credit ("ITC") for the energy storage system, the Proposer can design and specify the amount, if any, of grid charging for the energy storage system. However, after the 5-year ITC recapture period has lapsed, any energy storage component ~~coupled~~paired with generation must be capable of being 100% charged from the grid at the direction of the Company.

Energy storage components that are ~~coupled~~paired with ~~generation Projects~~generating facilities that are incapable of claiming the ITC must be capable of being 100% charged from the grid from the GCOD.

For example, during the 5-year ITC recapture period, a Proposer ~~coupling~~pairing an energy storage component with a solar facility can specify that its Facility can be charged from the grid (at the direction of the Company) up to 20% of its annual total energy input. After the 5-year ITC recapture period has lapsed, the energy storage component must be capable of being charged up to 100% of its total energy input from the grid at the direction of the Company.

- 1.2.12 Proposals for standalone energy storage will provide ~~MW capability and energy~~the Storage Requirement to the Company during times that are deemed by the Company to be beneficial to the system. These facilities must be connected to the grid at all times, with the exception of allowed maintenance periods, ~~and~~, Proposals for the Storage Requirement must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the ESPPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the ESPPA.

1.2.13 The amount of energy discharged from any energy storage component (standalone or one ~~coupled~~paired with a generation component) in a year will be limited to the energy storage contract capacity (in MWh) multiplied by the number of Days in that year.

1.2.14 The following GCOD shall apply:

1.2.14.1 Proposals for standalone energy storage or generation ~~coupled~~paired with energy storage that intend such storage to meet the Company’s ~~58,400 MWh energy storage~~Storage Requirement need must specify a GCOD no later than April 30, 2023.

1.2.14.2 Proposals for generation ~~coupled~~paired with energy storage not intended to meet the Company’s ~~58,400 MWh energy storage~~Storage Requirement need must specify a GCOD no later than December 31, 2025. However, Proposals with earlier GCODs will be given preference in scoring.

Project Technology	Generation Paired w/ Storage (not intended to meet energy storage <u>Storage Requirement</u> need)	Generation Paired w/Storage (intended to meet energy storage <u>Storage Requirement</u> need)	Standalone Storage
GCOD	December 31, 2025	April 30, 2023	April 30, 2023
Grid Charging	As bid during ITC period; 100% after ITC period	As bid during ITC period; 100% after ITC period	100% at GCOD

1.2.15 A Proposer’s GCOD set forth in its Proposal will be the GCOD in any resulting PPA⁷ if such Proposal is selected to the Final Award Group. Proposers will not be able to request a change in the GCOD set forth in their Proposals.

1.2.16 If selected, Proposers will be responsible for all costs throughout the term of the PPA, including but not limited to Project development, completion of an Interconnection Requirements Study (“IRS”), the cost of conducting a greenhouse gas analysis, land acquisition, permitting, financing, construction of the Facility and all Interconnection Facilities, and operations and maintenance (“O&M”).

⁷ PPA throughout this RFP refers to either/both the RDG PPA or the ESPPA.

- 1.2.17 If selected, Proposers will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the PPA, as described in Attachment G, Section 7 of the RDG PPA or ESPPA.
- 1.2.18 If selected, Proposers shall pursue all available applicable federal and state tax credits. Proposal pricing must be set to incorporate the benefit of such available federal tax credits. However, to mitigate the risk on Proposers due solely to potential changes to the state's tax credit law before a selected project reaches commercial operations, Proposal pricing shall be set without including any state tax credits. If a Proposal is selected, the PPA for the project will require the Proposer to pursue the maximum available state tax credit and remit tax credit proceeds to the Company for customers' benefit as described in Attachment J of the RDG PPA or ESPPA. The PPA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue the state tax credit.
- 1.2.19 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.3 Competitive Bidding Framework

Consistent with the Framework, this RFP outlines the Company's requirements in relation to the resources being solicited and the procedures for conducting the RFP process. It also includes information and instructions to prospective Proposers participating in and responding to this RFP.

1.4 Role of the Independent Observer

- 1.4.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of the RFP process will be subject to the Independent Observer's oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that the RFP is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.
- 1.4.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:
- Monitor all steps in the competitive bidding process
 - Monitor communications (and communications protocols) with Proposers
 - Monitor adherence to the Company's Code of Conduct
 - Submit comments and recommendations, if any, to the PUC concerning the RFP
 - Review the Company's Proposal evaluation methodology, models, criteria, and assumptions
 - Review the Company's evaluation of Proposals
 - Advise the Company on its decision-making

- Participate in dispute resolution as set forth in Section 1.10
- Monitor contract negotiations with Proposers
- Report to the PUC on monitoring results during each stage of the competitive bidding process
- Provide an overall assessment of whether the goals of the RFP were achieved

1.4.3 The Independent Observer for this RFP is **Navigant Consulting, Inc.**

1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual

1.5.1 Communications and other procedures under this RFP are governed by the “Code of Conduct Procedures Manual,” (also referred to as the “Procedures Manual”) developed by the Company as required by the Framework, and attached as Appendix C.

1.5.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company’s RFP website, Electronic Procurement Platform, and/or electronic mail (“Email”) through the address specified in Section 1.6 (the “RFP Email Address”). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company’s RFP website, or sent through either Email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen Days before the Proposal Due Date (RFP Schedule in Section 3.1, Items 7 and 8). The Company will endeavor to respond to all questions no later than five Days before the Proposal Due Date.

1.5.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).

1.5.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Stage 2 Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E.

1.5.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Jasmine Wong
Energy Contract Manager
Hawaiian Electric Company, Inc.
Central Pacific Plaza Building, Suite 2100
220 South King Street
Honolulu, Hawai'i 96813

RFP Email Address: mauivariablerfp@hawaiianelectric.com

1.7 Proposal Submission Requirements

- 1.7.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.
- 1.7.2 Detailed requirements regarding the form, submission, organization, and information for the Proposal are set forth in Chapter 3 and Appendix B.
- ~~1.7.3~~ In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other unaffiliated person or entity. The Proposer shall acknowledge this in the Response Package submitted with its Proposal.
- ~~1.7.3~~ Without limiting the foregoing, unaffiliated Proposers are prohibited from using shared legal counsel to prepare their Proposals or for contract negotiations with the Company where counsel is an individual person. If counsel is a law firm with multiple attorneys, unaffiliated Proposers may use the same firm only if (1) such firm assigns separate attorney(s) to each Proposer, (2) the attorney(s) are prohibited from (i) sharing a Proposer's confidential information or the Company's confidential information associated with such Proposer with others, or (ii) accessing another Proposer's confidential information or Company's confidential information associated with such Proposer from another attorney in the firm, (3) the law firm has appropriate procedures, safeguards, and policies in place to ensure that separations exist so that the attorney(s) assigned to a Proposer do not share or have access to confidential information of another Proposer or of the Company which was obtained through another attorney's representation of a Proposer, and (4) an authorized signatory of the law firm shall provide Company with a written certification in the form attached as Appendix B Attachment 1. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company's negotiating positions will not be shared with other Proposers or their respective Representatives.

In addition, in submitting a Proposal, a Proposer will be required to provide Company with its legal counsel's written certification in the form attached as Appendix B Attachment 1 certifying in relevant part that irrespective of any Proposer's direction, waiver, or request to the contrary, that the attorney will not share a Proposer's confidential information associated with such Proposer with others, including, but not limited to, information such as a Proposer's or Company's negotiating positions. If legal counsel represents multiple unaffiliated proposers whose Proposals are selected for the Final Award Group, such counsel will also be required to submit a similar certification at the conclusion of power purchase agreement negotiations that he or she has not shared a proposer's confidential information or the Company's confidential information associated with such proposer with others, including but not limited to, such information as the a proposer's or Company's negotiating positions.

- 1.7.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai'i Standard Time (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. No hard copies of the Proposals will be accepted.⁸ It is the Proposer's sole responsibility to ensure that complete and accurate information has been submitted on time and within the instructions of this RFP. With this assurance, Company shall be entitled to rely upon the completeness and accuracy of every Proposal. Any errors identified by the Proposer or Company after the Proposal Due Date has passed may jeopardize further consideration and success of the Proposal. If an error or errors are later identified, Company, in consultation with the Independent Observer, may permit the error(s) to be corrected without further revision to the Proposal, or may require Proposer to adhere to terms of the Proposal as submitted without correction. Additionally, and in Company's sole discretion, if such error(s) would materially affect the Priority List or Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by milestone (7) Self-Build and Affiliate Proposal Due Date in Section 3.1 Table 1. The PowerAdvocate Platform automatically closes further submissions after milestone (8) IPP Proposal Due Date in Table 1.

1.8 Proposal Fee

- 1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of \$10,000 for each Proposal submitted. IPP and Affiliate proposers who propose projects located at the Company-owned site identified in Section 3.11.2 will have their Proposal Fee waived.

⁸ Proposals for the SBO(s) and Affiliate Proposals have additional submission requirements to the PUC specified in Section 1.9 below.

- 1.8.2 Proposers may submit multiple Proposal variations for a Project- for a single Proposal Fee. If such Proposals are on different Sites or for different generation technologies, a separate Proposal Fee must be paid for each Proposal. The method of submitting multiple Proposals within this RFP is described in Appendix B.
- 1.8.3 Proposers may also submit up to three (3) minor variations ~~(e.g., of their base variation Proposal. Variations of pricing terms, Facility size, with/without or differing levels of grid-charging, or level of grid-charging capability)~~ capabilities can be offered. All variations within a Proposal must be proposed on the same Site and using the same generation technology without having to pay avoid paying a separate Proposal Fee for ~~these three (3) variations each variation~~. Whether or not a separate Proposal Fee is required, all unique information for each variation of a Proposal, no matter how minor such variation is, must be clearly identified and separated by following the instructions in Appendix B Section 3.
- 1.8.4 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Maui Electric Company, Ltd." and must be delivered and received by the Company by 2:00 pm (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. The check should include a reference to the Proposal(s) for which the Proposal Fee is being provided. Proposers are strongly encouraged to utilize a delivery service method that provides proof of delivery to validate delivery date and time.

If the Proposal Fee is delivered by U.S. Postal Service (with registered, certified, receipt verification), the Proposer shall address it to:

Jasmine Wong
Energy Contract Manager
Hawaiian Electric Company, Inc.
Mail Code CP21-IU
PO Box 2750
Honolulu, Hawai'i 96840

If the Proposal Fee is delivered in person, or via an alternative registered, certified delivery service, the Proposer shall use the address specified in Section 1.6.

1.9 Procedures for the Self-Build or Affiliate Proposals

The Competitive Bidding Framework allows the Company the option to offer a Proposal(s) in response to this RFP ("Self-Build Option" or "SBO"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the SBO or members, agents, or consultants of the Company formulating the SBO (the "Self-Build Team"); and (2) preferential access to proprietary information of the Self-Build Team. These requirements are specified in the Code of Conduct required under the Framework and implemented by certain rules and procedures found in the Procedures Manual submitted to the PUC in Docket No. 2017-0352 on April 1, 2019. A copy of the Procedures Manual is attached as Appendix C.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals to RFPs issued by the Company. All Self-Build and Affiliate Proposals are subject to the Company's Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP Proposal, except that they are due at the same time as any Self-Build Proposal(s).

The Independent Observer will monitor adherence to the Company's Code of Conduct and the Procedures Manual. Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Proposal for the SBO(s) and Affiliate Proposals be submitted electronically through the Electronic Procurement Platform and filed with the PUC in hard copy a minimum of one (1) Day before other Proposals are due. (A Proposal for the SBO or Affiliate will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by Milestone (7) Self-Build and Affiliate Proposal Due Date in RFP Table 1.)

Detailed requirements for an SBO Proposal can be found in Appendix G. These requirements are intended to provide a level playing field between SBO Proposals and third-party Proposals. Except where specifically noted, a SBO Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers, as well as certain PPA requirements, such as milestones and liquidated damages, as described in Appendix G. The non-negotiability of the Performance Standards shall apply to any SBO to the same extent it would for any other Proposal. Notwithstanding the fact that it will not be required to enter into an RDG PPA or ESPPA with the Company, a Self-Build Proposer will be required to note its exceptions, if any, to the RDG PPA and/or ESPPA in the same manner required of other Proposers, and will be held to such modified parameters if selected. In addition to its Proposal, the Self-Build Team will be required to submit Appendix G Attachment 1, Self-Build Option Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Self-Build Team over other proposers responding to this RFP, as well as adherence to PPA terms and milestones required of all proposers and the SBO's proposed cost protection measures.

The cost recovery methods between a regulated utility SBO Proposal and IPP Proposals are fundamentally different due to the business environments they operate in. As a result, the Companies have instated Company has instituted a process to compare the two types of proposals for the initial evaluation of the price related criteria on a 'like' basis through comparative analysis.

At the core of an SBO Proposal are its total project capital cost and any associated annual operations and maintenance ("O&M") costs. During the RFP's initial pricing evaluation

step, these capital costs⁹ and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the project. The SBO revenue requirements are then used in a levelized price calculation to determine a Levelized Energy Price (“LEP”) (\$/MWh), if for energy needs, or to determine an Energy Storage Only Levelized Price (\$/MWh), if for storage only needs. These price calculations will then be used for comparison to IPP Proposals.

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the SBO Proposal to ensure an appropriate level of customer cost protection measures are included in such Proposal.

In response to the ~~40 MW capacity need~~ Storage Requirement, the Self-Build Team will only be permitted to submit a Proposal or group of Proposals (with up to 3 variations for each base variation Proposal) which collectively address this need, and no more. These proposals for the ~~capacity needs~~ Storage Requirement are intended to serve as the Company’s Parallel Plan, as described in the PUC’s Framework for Competitive Bidding.¹⁰ The Self-Build team will be allowed to submit one (1) additional Proposal (with up to 3 variations) in response to the energy need.

The SBO will be permitted to submit a shared savings mechanism with its Proposal to share in any cost savings between the amount of cost bid in the SBO Proposal and the actual cost to construct the Project. If the SBO Proposal is selected to the Final Award Group, the proposed shared savings mechanism will need to be approved by the PUC. Submission of a shared savings mechanism is not required and will not be considered in the evaluation of the SBO Proposal.

1.10 Dispute Resolution Process

- 1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.
- 1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer (“Initial Meeting”). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.
- 1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential Mediation in Honolulu, Hawai‘i, pursuant to and in accordance with the Mediation Rules, Procedures, and

⁹ Self-Build Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction (“EPC”), interconnection, overhead, and Allowance for Funds Used During Construction (“AFUDC”).

¹⁰ See Decision and Order No. 23121, filed December 8, 2006, in Docket No. 03-0372.

Protocols of Dispute Prevention Resolution, Inc. (“DPR”) (or its successor) or, in its absence, the American Arbitration Association then in effect (“Mediation”). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney’s fees.

- 1.10.4 If settlement of the dispute is not reached within sixty (60) Days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any unresolved disputes to Mediation, then as provided in the Framework, the Proposer may submit the dispute to the PUC in accordance with the Framework.
- 1.10.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the dispute within thirty (30) Days, as described in Parts III.B.8 and V of the Framework.¹¹ There will be no right to hearing or appeal from this informal expedited dispute resolution process.
- 1.10.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 (e.g., a court proceeding), then such Proposer shall be responsible for any and all attorneys’ fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.11 No Protest or Appeal

Subject to Section 1.10, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

By submitting a Proposal in response to the RFP, the Proposer expressly agrees to the terms and conditions set forth in this RFP.

1.12 Modification or Cancellation of the Solicitation Process

- 1.12.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final execution of an RDG PPA or ESPPA, as may be applicable, in consultation with the Independent Observer, postpone, withdraw and/or cancel any requirement, term or condition of this RFP, including deferral of the award or negotiation of any contract, and/or cancellation of the award all together, all of which will be without any liability to the Company.

¹¹ The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework’s process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework’s dispute resolution process applies to “Bidders” and there are no “Bidders” at this stage in the RFP process.

- 1.12.2 The Company may modify this RFP subject to requirements of the Framework, whereby the modified RFP will be reviewed by the Independent Observer and submitted to the PUC thirty (30) Days prior to its issuance, unless the PUC directs otherwise. See Framework Part IV.B.10. The Company will follow the same procedure with regard to any potential postponement, withdrawal, or cancellation of the RFP or any portion thereof.

Chapter 2: Resource Needs and Requirements

2.1 Performance Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the RDG PPA for proposals that include a generation component or the ESPPA for standalone energy storage proposals. This RFP and the RDG PPA or ESPPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP. Additional Performance Standards may be required based on the results of the IRS.

Facilities must be able to operate in grid-forming mode when directed by the Company as defined in the RDG PPA or ESPPA.

Black start capability is preferred for standalone energy storage or energy storage ~~coupled~~paired with generation facilities. Proposals will need to identify¹² any incremental costs to enable their facility to be black start capable, if not already enabled.

For standalone energy storage or energy storage ~~coupled~~paired with generation facilities, the functionality and characteristics of the storage must be maintained throughout the term of the PPA. To be clear, Proposers may not propose any degradation ~~in~~for either storage capacity or storage efficiency in their Proposals.

2.2 Transmission System Information

- 2.2.1 Company information regarding an initial assessment of potential MW capacity of 69 kV transmission-level circuits providing possible points of interconnection has been developed for Sites included in the Land Request for Information (“Land RFI”) as described in Section 3.11 and will be made available to Proposers only after execution of the Stage 2 NDA.¹³ Proposers should perform their own evaluation of project locations, and the Company does not guarantee any project output or ability to connect based on such information. Prior to submitting a proposal, Proposers are encouraged to inquire about the viability of interconnecting a proposed Project at a specific location. For example, a Project must interconnect through a minimum of two transmission lines and no single point of failure resulting in a loss of more than 20 MW; however, depending on, but not limited to, factors such as location of the Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies, the Project may require

¹² If black start is not already enabled for the Proposal, any additional costs necessary to enable black start will be identified in the submission instructions defined in Appendix B.

¹³ Appendix E contains the Mutual Confidentiality and Non-Disclosure Agreement for this RFP.

more than two transmission line terminations. Please direct questions to the RFP Email Address in Section 1.6.

- 2.2.2 A detailed IRS, when performed, may reveal other adverse system impacts that may further limit a Project's ability to interconnect and/or further limit the net output of the Facility without upgrades.

2.3 Interconnection to the Company System

- 2.3.1 The Interconnection Facilities includes both: (1) Seller-Owned Interconnection Facilities; and (2) Company-Owned Interconnection Facilities.

- 2.3.2 All Proposals must include a description of the Proposer's plan to transmit power from the Facility to the Company System. The proposed Interconnection Facilities must be compatible with the Company System. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System.

- 2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point(s) of Interconnection with the Company System, and scheme of interconnection, must meet Company standards. The Company will provide its construction standards and procedures to the Proposer (Engineer, Procure, Construct Specifications for MauiHawaiian Electric Power Lines and Substations) if requested via the RFP Email Address in Section 1.6 and upon the execution of a Stage 2 NDA as specified in Section 3.12.1. These specifications are intended to illustrate the scope of work typically required to administer and perform the design and construction of a Maui Electric substation and power line.

- 2.3.2.2 Interconnection Facilities must be designed such that, with the addition of the Facility, the Company System can meet all relevant Transmission Planning Criteria¹⁴ and any amendments thereto.

- 2.3.3 Tariff Rule No. 19, a copy of which is attached as Appendix I, establishes provisions for Interconnection and Transmission Upgrades. The tariff provisions are intended to simplify the rules regarding who pays for, installs, owns, and operates interconnection facilities in the context of competitive bidding. Proposers will be required to build the Company-Owned Interconnection Facilities, including the switching station and line work, except for any work in the Company's existing energized facilities and the final tap. Construction of Company-Owned Interconnection Facilities by the Proposer must comply with industry standards, laws, rules, and licensing requirements, as well as the Company's specific construction standards and procedures that the Company will provide upon request. (See Section 2.3.1.) The Company uses the breaker-and-a-half scheme for its transmission switching station as shown in Attachment A of Appendix I – Rule 19 Tariff. Proposers should follow this scheme for purposes of their estimates.

¹⁴ Transmission Planning Criteria are further described in the PSIP beginning on page O-11 of Appendix O.

- 2.3.4 The Proposer shall be responsible for all costs required to interconnect a Project to the Company System, including all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities.
- 2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and transmission equipment expected to be required between their Facility and their proposed Point of Interconnection. Appendix H includes information related to Company-Owned Interconnection Facilities and costs that may be helpful to Proposers.

Selected Proposers shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities, whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.

- 2.3.6 Proposers are required to include in their pricing proposal all costs for distribution-level service interconnection for station power.
- 2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. Proposals selected to the Final Award Group will be subject to further study in the form of an IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed PPA.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the "RFP Schedule"). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via Email or via the Electronic Procurement Platform to the Proposers.

**Table 1
Proposed RFP Schedule**

Milestone	Schedule Dates
(1) Status Conference held	February 7, 2019
(2) Draft RFP filed	April 1, 2019
(3) Status Conferences held	April 18, 2019 May 2, 2019
(4) Commission solicited Stakeholder and Company Comments by	May 20, 2019
(5) Proposed Final RFP filed	July 10, 2019
(6) Final RFP is Issued	August 9 <u>22</u> , 2019 ¹⁵
(7) Self-Build and Affiliate Proposal Due Date	October 21 <u>November 4</u> , 2019 at 2:00 pm HST ¹⁶
(8) IPP Proposal Due Date	October 22 <u>November 5</u> , 2019 at 2:00 pm HST
(9) Selection of Priority List	January 31 <u>17</u> , 2020
(10) BAFOs Due	January 10 <u>24</u> , 2020
(11) Selection of Final Award Group	April 24 <u>May 8</u> , 2020
(12) Contract Negotiations Start	May 15 <u>15</u> , 2020

3.2 Company RFP Website/Electronic Procurement Platform

3.2.1 The Company has established a website for general information to share with potential Proposers. The RFP website is located at the following link:

www.mauielectric.com/competitivebidding

The Company will provide general notices, updates, schedules, and other information on the RFP website throughout the process. Proposers should check the website frequently to stay abreast of any new developments. This website will also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

“Sourcing Intelligence” developed by Power Advocate is the Electronic Procurement Platform that the Company has licensed and will utilize for this RFP. Proposers who do not already have an existing account with PowerAdvocate and who intend to submit a Proposal for this RFP will need to register as a “Supplier” with PowerAdvocate.

¹⁵ Per Section IV.B.6.e.ii of the Competitive Bidding Framework “[t]he utility shall have the right to issue the RFP if the Commission does not direct the utility to do otherwise within thirty (30) days after the Commission receives the proposed RFP and the Independent Observer's comments and recommendations.” August 9, 2019 is based on this thirty (30) day timeline. However, this date and all subsequent dates in the proposed schedule are dependent on any further guidance provided by the PUC.

¹⁶ An SBO or Affiliate Proposal must also be filed in hard copy form with the PUC a minimum of one (1) Day before other Proposals are due.

- 3.2.2 There are no license fees, costs, or usage fees to Proposers for the use of the Electronic Procurement Platform.

See [Appendix D](#) for user information on and screenshots of PowerAdvocate's Sourcing Intelligence procurement platform.

3.3 Information Conferences

The Commission held three status conferences on February 7, 2019, April 18, 2019, and May 2, 2019 to allow the Companies to propose plans for their Stage 2 RFPs and to respond to questions from the Commission, the Consumer Advocate, and stakeholders. The Companies' presentations were made available on the Companies' RFP Website. The Commission also solicited comments from stakeholders on the Companies' Stage 2 Draft RFPs on May 6, 2019 before releasing its Order No. 36356 providing guidance on the draft RFPs for dispatchable and renewable generation on June 10, 2019. On July 5, 2019, the Commission issued Order No. 36406 providing further clarification of Order No. 36356.

Prospective Proposers may continue submitting written questions regarding the RFP to the RFP Email Address set forth in [Section 1.6](#). The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website's Q&A section prior to submission of their Proposal. Duplicate questions will not be answered.

3.4 Preparation of Proposals

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer's Proposal, and the Proposer's anticipated performance under the RDG PPA or ESPPA. It is the Proposer's responsibility to ensure it understands all requirements of the RFP, to seek clarification if the RFP's requirements or Company's request is not clear, and to ask for any confirmation of receipt of submission of information. Under [Section 1.7.4](#), the Proposer is solely responsible for all errors in its Proposal(s). The Company will not accept any explanation by a Proposer that it was incumbent on the Company to catch any error.
- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on information submitted by Proposers in response to this RFP. Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP.

- 3.4.3 Each Proposer shall be solely responsible for, and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and (5) investigation and research relating to its Proposal and this RFP. The Company will not reimburse any Proposer for any such costs, including the selected Proposer(s).
- 3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent¹⁷ of the Proposer.

3.5 Organization of the Proposal

The Proposal must be organized as specified in Appendix B. It is the Proposer's responsibility to ensure the information requested in this RFP is submitted and contained within the defined Proposal sections as specified in Appendix B.

3.6 Proposal Limitations

Proposers expressly acknowledge that Proposals are submitted subject to the following limitations:

The RFP does not commit or require the Company to award a contract, pay any costs incurred by a Proposer in the preparation of a Proposal, or procure or contract for products or services of any kind whatsoever. The Company reserves the right, in consultation with the Independent Observer, to accept or reject, in whole or in part, any or all Proposals submitted in response to this RFP, to negotiate with any or all Proposers eligible to be selected for award, or to withdraw or modify this RFP in whole or in part at any time.

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.
- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the Stage 2 NDA.

¹⁷ Proposer's officer or agent must be authorized to sign the Proposal. Such authorization must be in writing and may be granted via Proposer's organizational documents (i.e., Articles of Incorporation, Articles of Organization, By-laws, etc.), resolution, or similar documentation.

3.7 Proposal Compliance and Bases for Disqualification

Proposers may be deemed non-responsive and/or Proposals may not be considered for reasons including, but not limited to, the following:

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.5.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to a Company request for additional information to clarify the contents of its Proposal within the timelines specified by the Company.
- The Proposal contains misrepresentations or errors.

3.8 Power Purchase Agreement

- 3.8.1 The Power Purchase Agreement for proposals selected under this RFP that include a generation component will be in the form of the RDG PPA, attached as Appendix J and Appendix L.
- 3.8.2 The Power Purchase Agreement for standalone energy storage proposals selected under this RFP will be in the form of the Company's ESPPA, attached as Appendix K.
- 3.8.3 If selected, any Affiliate Proposers will be required to enter into the RDG PPA or ESPPA with the Company.
- 3.8.4 If selected, a Self-Build Proposer will not be required to enter into a ~~PPA with the Company. However~~ RDG PPA or ESPPA with the Company. However, the Self-Build Proposer will be held to the proposed modifications to the RDG PPA and/or ESPPA, if any, it submits as part of the SBO in accordance with Section 3.8.7. Moreover, the SBO will be held to the same performance metrics and milestones set forth in the RDG PPA and/or ESPPA to the same extent as all Proposers, as attested to in the SBO's Appendix G, Attachment 1, Self-Build Option Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility for a Company-owned facility, the SBO will be permitted to adjust operational requirements and performance metrics with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to a PPA with PUC approval.

- 3.8.5 In general, under the RDG PPA, payment to the Seller contains two parts: a Lump Sum Payment component to cover the fixed costs of the Project and a Price for Purchase of Electric Energy component (\$/MWh component) to cover variable operations and maintenance costs (if applicable, depending on the resource). In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch. Company shall not be obligated to accept, nor shall it be required to pay for, test energy generated by the Facility during acceptance testing or other test conditions.
- 3.8.6 In general, under the ESPPA, payment to the Seller consists of a Lump Sum Payment to cover dispatchability and availability of the Facility. In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch.
- 3.8.7 As described in Section 2.1, the Performance Standards identified in the applicable RDG PPAs or the ESPPA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Facility's ability to meet these Performance Standards is both a Threshold Requirement and a Non-Price Related Criteria under Sections 4.3 and 4.4.2, respectively. As such, the Performance Standards included in the RDG PPAs or ESPPA are non-negotiable: by a Self-Build Proposer or any other Proposer. Proposers may propose modifications to other sections of the RDG PPA or ESPPA but are encouraged to accept such terms as written in order to expedite the overall RFP process and potential contract negotiations. As a component of their respective Proposals, a Self-Build Proposer or any other Proposers who elect to propose modifications shall provide a Microsoft Word red-line version of the relevant document identifying specific proposed modifications to the model language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification.
- 3.8.7.1 General comments, drafting notes and footnotes such as "parties to discuss" are unacceptable and will be considered non-responsive. Proposed modifications to the RDG PPA and ESPPA will be evaluated as a non-price evaluation eriteriacriterion as further described in Section 4.4.2. In order to facilitate this process, the Company will make available electronic versions of the model agreements on the RFP website and through the PowerAdvocate platform for the RFP. Any proposed modifications to the RDG PPA or ESPPA will be subject to negotiation between the Company and the Final Award Group. As stated above, since general comments, drafting notes, and footnotes without accompanying specific proposed language modifications are unacceptable and non-

responsive, the Company will not negotiate provisions simply marked by such general comments, drafting notes, and footnotes.

3.8.7.2 The Company has an interest in maintaining consistency for certain provisions of the RDG PPAs and ESPPA, such as the calculation of availability and payment terms. Therefore, for such provisions, the Company will endeavor to negotiate similar and consistent language across PPAs for the Final Award Group.

3.8.8 Proposals that do not include specific proposed modifications to the attached RDG PPAs or ESPPA will be deemed to have accepted the RDG PPA or ESPPA in its entirety.

3.9 Pricing Requirements

3.9.1 Proposers must submit pricing for each of their variations associated with each Proposal (if variations as described in Section 1.8.2 and 1.8.3 are submitted). Proposers are responsible for understanding the terms of the RDG PPA or ESPPA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy or receiving all Investment Tax Credits assumed).

3.9.2 Escalation in pricing over the term of the RDG PPA or the term of the ESPPA is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission). Pricing information contained anywhere else in a Proposal will not be considered during the evaluation process.

3.9.4 For projects that include a generation component, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount for full dispatchability of the Facility. Payment will be made in monthly increments.
- **Price for Purchase of Electric Energy (\$/MWh):** Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).
- **Black Start (\$):** For energy storage ~~coupled~~paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.

For Self-Build Proposals:

- **Total Project Capital Costs ~~(\$):(\$/year)~~:** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** For energy storage ~~coupled~~paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs, and Annual Revenue Requirement for the Self-Build Proposals.

3.9.5 For standalone energy storage projects, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount assuming full availability and dispatchability. Payment will be made in monthly increments.
- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.

For Self-Build Proposals:

- **Total Project Capital Costs ~~(\$):(\$/year)~~:** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs, and Annual Revenue Requirement for the Self-Build Proposals.

3.9.6 As identified in the Schedule of Defined Terms in the PPA under “BESS Allocated Portion of the Lump Sum Payment”, the allocated portion of the Lump Sum Payment specified for energy storage for the Facility is 50% and shall be a non-negotiable percentage in the PPA.

3.10 Project Description

- 3.10.1 Proposals that include a generation component are required to provide a NEP RFP Projection for the Project. The NEP RFP Projection associated with the proposed Project represents the estimated annual net energy (in MWh) that could be produced by the Facility and delivered to the Point of Interconnection over a ten-year period with a probability of exceedance of 95%. The proposed Project’s energy storage component should not be factored into the NEP RFP Projection. Any losses that may be incurred from energy being stored and then discharged from the energy storage component or any energy that may be diverted to the energy storage component due to generation in excess of the Facility’s Allowed Capacity should not be factored into the NEP RFP Projection. The NEP RFP Projection should assume that all energy is being directly exported to the Maui Electric System. The NEP RFP Projection will be used in the RFP evaluation process and therefore Proposers will be held to their provided value.¹⁸
- 3.10.2 Proposers must provide all information pertaining to the design, development, and construction of the Interconnection Facilities as specified in Appendix B.
- 3.10.3 Each Proposer must also agree to provide Project financial information, including proposed Project finance structure information specified in Appendix B. Such information will be used to evaluate Threshold Requirements and non-price criteria (e.g., Financial Viability of Proposer, Financial Strength and Financing Plan, State of Project Development and Schedule) set forth in Sections 4.3 and 4.4.2. Upon selection, the Final Award Group may be requested to provide further detailed cost information if requested by the PUC or the Consumer Advocate as part of the PPA approval process. If requested, such information would be provided to the PUC, Consumer Advocate, and Company pursuant to a protective order in the docket.
- 3.10.4 The Proposer agrees that no material changes or additions to the Facility from what is submitted in its Proposal will be made without the Proposer first having obtained prior written consent from the Company. Evaluation of all Proposals in this RFP is based on the information submitted in each Proposal at the Proposal Due Date. If any Proposer

¹⁸ If a Proposal is selected to the Final Award Group and a PPA is executed between the Company and the Proposer, the NEP RFP Projection will be further evaluated at several steps throughout the process as set forth in the RDG PPA, and adjustments to the Lump Sum Payment will be made accordingly. Additionally, because the Company will rely on an accurate representation of the NEP RFP Projection in the RFP evaluation, a one-time liquidated damage as described in the RDG PPA will be assessed if the First NEP benchmark is less than the Proposer’s NEP RFP Projection. After the Facility has achieved commercial operations, the performance of the Facility will be assessed on a continuing basis against key metrics identified in the RDG PPA. See Article 2 and Attachment U of the RDG PPA.

requests any Proposal information to be changed after that date, the Company, in consultation with the Independent Observer, and in consideration of whether the evaluation is affected, will determine whether the change is permitted.

3.11 Sites Identified by the Company

- 3.11.1 As an alternative to a Site identified by the Proposer, the Company has identified potential Sites where landowners have expressed a willingness to negotiate a lease or purchase of the land to support a renewable energy project. These Sites were identified through a Land RFI. Proposers will be responsible for working directly with the land owner and must secure Site Control with such land owner prior to submitting a Proposal. Land RFI information is available to interested parties who sign the Stage 2 NDA. The Land RFI is further described in Appendix F.

Proposers are not required to select a Site identified in the Land RFI and as noted above may propose any Site for a Project. A Proposer may ask the Company questions as set forth in Section 2.2.1 if it would like to obtain similar information about the viability of interconnection at its proposed Site as identified for the Land RFI parcels.

- 3.11.2 Additionally, a Company-owned Site is being offered to Proposers of standalone energy storage Projects for their consideration. An approximately 1.8 acre area within the Company's Waena property in central Maui, referred to as the Waena Storage Site, is further described in Appendix F.

Proposers proposing to use the Waena Storage Site shall be required to agree to specific terms and conditions for such use as provided for in ~~an~~ Attachment X (Company-Owned Sites) to the ESPPA. Provisions providing for access to the site during construction and thereafter, during commercial operations, will be subject to current Company security policies and procedures. Physical, communication, and internet security will be required consistent with Company policy. Additional measures may be required to limit ~~or~~ eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures, and requirements may change as necessary during the term of the ESPPA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules, or regulations. ~~A draft copy~~ Limited sections of ~~the proposed form of the Terms and Conditions for Use is attached as~~ Attachment X to the ESPPA. ~~Limited sections~~ (Section 4 Seller's Investigations of the Company-Owned Site, Section 5 Construction and Maintenance, Section 7 Hazardous Substances, and Section 8 Archeological and Historic Items) ~~of the TCU~~ shall be negotiable.

The Company ~~plans to offer~~ provided potential Proposers ~~the an~~ opportunity to visit the Waena Storage Site. ~~The date, time, and requirements for this on August 8, 2019.~~ Information from the site visit will be posted ~~to on~~ the Company's RFP website.

3.12 Confidentiality

- 3.12.1 Each prospective Proposer must submit an executed Stage 2 NDA (specific to the Maui Variable Renewable Dispatchable Generation and Energy Storage RFP) in the form

attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1. The form of the Stage 2 NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed Stage 2 NDA will be considered. NDAs that were fully executed for Stage 1 will not be accepted for Stage 2. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking every page of a Proposal as confidential. The Company will make reasonable efforts to protect any such information that is clearly marked as confidential. Consistent with the terms of the Stage 2 NDA, the Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal and facilitating potential contract negotiations.

- 3.12.2 Proposers, in submitting any Proposal(s) to Company in response to this RFP, certify that such Proposer has not shared its Proposal(s), or any part thereof, with any other Proposer of a Proposal(s) responsive to this RFP.
- 3.12.3 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company and to be filed in a proceeding before the PUC. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the State of Hawai'i Department of Commerce and Consumer Affairs, Division of Consumer Advocacy, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.13 Credit Requirements Under the PPA

- 3.13.1 Proposers with whom the Company concludes PPA contract negotiations must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank chartered in the United States as required and set forth in Article 14 of the RDG PPA or the ESPPA.
- 3.13.2 The Development Period Security and Operating Period Security identified in the RDG PPAs or the ESPPA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the RDG PPAs or the ESPPA.
- 3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States to guarantee Proposer's payment of interconnection costs for all Company-Owned Interconnection Facilities in excess of the Total Estimated Interconnection Costs and/or all ~~relocations~~relocation costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the RDG PPAs or the ESPPA.

- 3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the RDG PPAs or ESPPA.

Chapter 4: Evaluation Process and Evaluation Criteria

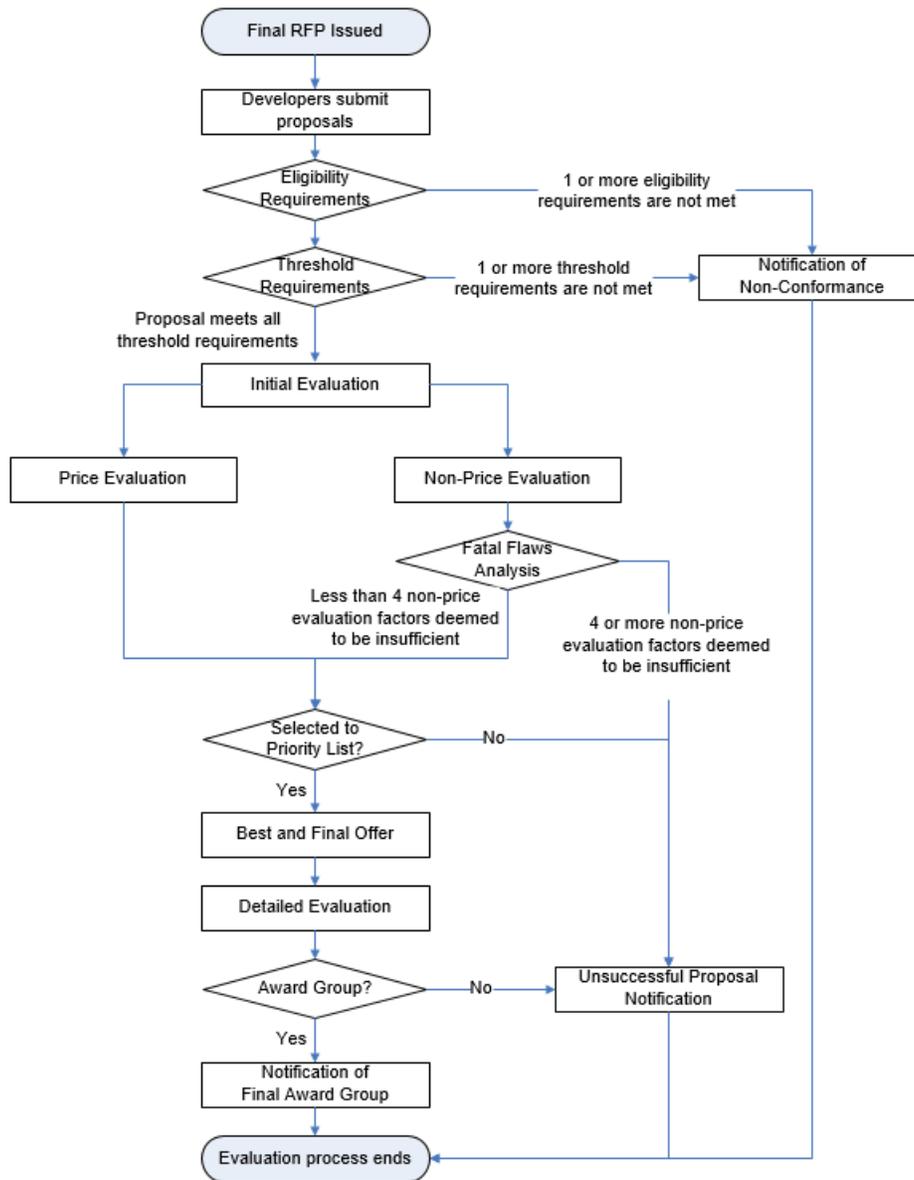
4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company, in coordination with the Independent Observer, will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements.¹⁹ If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business Days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation resulting in the development of a Priority List, followed by the opportunity for Priority List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

¹⁹ As a general rule, if a Proposer does not include a requested document, inadvertently excludes minor information, or provides inconsistencies in its information, it may be given a chance to cure such deficiency. If a Proposer fails to provide material required information in its Proposal and providing the Proposer an opportunity to cure is deemed by the Company, in consultation with the Independent Observer, as an unfair advantage to such Proposer, the Proposal could be classified as non-conforming and eliminated for failure to meet the Eligibility Requirements.

Figure 1 – Evaluation Workflow



4.2 Eligibility Requirements Assessment

Upon receipt of the Proposals, each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements.

- The Proposal, including required uploaded files, must be received on time via the PowerAdvocate Platform.

- The Proposal Fee must be received on or before the Proposal Due Date.²⁰
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
- The Proposer must fully execute the agreements or other documents required pursuant to this RFP.
- The Proposer must provide a certificate of good standing from the State of Hawai'i Department of Commerce and Consumer Affairs.
- The Proposer must provide federal and state tax clearance certificates for the Proposer.
- The Proposal must not be contingent upon changes to existing county, state, or federal laws or regulations.
- The proposed Project must be located on the island of Maui.
- Project size must be greater than ~~5 MW~~the threshold for a waiver from the Competitive Bidding Framework applicable to Maui.
- No single point of failure from the Facility shall result in a decrease in net electrical output greater than 20 MW.
- Project infrastructure and point of interconnection must be located outside the 3.2 foot sea level rise exposure area (SLR-XA) as described in the Hawai'i Sea Level Rise Vulnerability and Adaptation Report (2017), and not located within a Tsunami Evacuation Zone.
- Proposals must meet the grid-charging requirements of Section 1.2.11.
- Standalone energy storage Proposals or Proposals for generation ~~coupled/paired~~ with energy storage that intend such storage to meet the Company's ~~energy storage need~~Storage Requirement must specify a GCOD no later than required in Section 1.2.14.
- Generation ~~coupled/paired~~ with energy storage Proposals that are not intended to meet the Company's ~~energy storage need~~Storage Requirement must specify a GCOD no later than required in Section 1.2.14.

4.3 Threshold ~~Requirements~~Requirement Assessment

Proposals that meet all the Eligibility Requirements will then be evaluated to determine compliance with the Threshold Requirements, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to provide this information or meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer. The Threshold Requirements for this RFP are the following:

- **Site Control:** The Proposal must demonstrate that the Proposer has Site Control for all real property required for the successful implementation of a specific

²⁰ Proposal Fees will not be required for SBO Proposals or Proposals utilizing Company offered and owned sites.

Proposal at a Site not controlled by the Company, including any Interconnection Facilities for which the Proposer is responsible. The need for a firm commitment is necessary to ensure that Proposals are indeed realistic and can be relied upon as the Company moves through the remainder of the RFP process. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified and will be considered in determining whether the Proposal meets the Site Control threshold.

To meet this Site Control requirement, Proposers must do one of the following:

- Provide documentation confirming (1) that the Proposer has an existing legally enforceable right to use and control the Site, either in fee simple or under leasehold, for a term at least equal to the term of the PPA or ESPPA (“Site Control”) as specified in the Proposer’s Proposal (taking into account the timelines set forth in this RFP for selection, negotiation, and execution of a PPA or ESPPA and PUC approval), and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal; or
 - Provide documentation confirming, at a minimum, (1) that the Proposer has an executed binding letter of intent, memorandum of understanding, option agreement, or similar document, with the land owner (a “binding commitment”) which sets forth the general terms of a transaction that would grant the Proposer the required Site Control, and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal. The binding commitment does not need to be exclusive to the Proposer at the time the Proposal is submitted and may be contingent upon selection of the Proposal to the Final Award Group. If multiple Projects are provided a binding commitment for the same Site, the documents granting the binding commitments must not prevent the Company from choosing the Proposal that otherwise would have been selected.
 - Government/Public Lands Only: The above two bullet points may not be feasible where government or publicly-owned lands are part of the Site or are required for the successful implementation of the Proposal. In such a case, at a minimum the Proposer must provide a credible and viable plan, including evidence of any steps taken to date, to secure ~~the~~all necessary Site Control for the Proposal, including but not limited to evidence of sufficient progress toward approval by the government agency or other body vested with the authority to grant such approval (as demonstrated by records of the agency). The Proposer will still be required, however, to demonstrate Site Control as required in the applicable RDG PPA or ESPPA should the Proposal be selected to the Final Award Group.
-
- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the applicable RDG PPAs or the ESPPA. Proposals should include sufficient documentation to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required

to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.

- **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications (i.e., a PPA) at the scale being proposed. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.
- **Experience of the Proposer:** The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer's Project team must have experience in financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one (1) electricity generation project, including all components of the project (i.e., storage or other attributes), similar in size, scope, technology, and structure to the Project being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information in its Proposal's RFP Appendix B Section 2.13 tables demonstrating that at least one member of the Proposer's team (identified in the Proposal) has specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining projects similar to the Project being proposed.
- **Credit/Collateral Requirements:** Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- **Available Circuit Capacity:** The output capacity of the proposed Project must not exceed the available capacity of the 69 kV circuit to which it will interconnect.
- **Viability of Proposer's Financial Plan:** Proposers must provide a basic financial plan for the Project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for Project financing.
- **Financial Compliance:** The proposed Project must not cause the Company to be subject to consolidation, as set forth in Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 810, Consolidation ("ASC 810"), as issued and amended from time to time by FASB. Proposers are required to state to the best of their knowledge, with supporting information to allow the Company to verify such conclusion, that the Proposal will not result in the Seller under the PPA being a Variable Interest Entity ("VIE") and result in the Company being the primary beneficiary of the Seller that would trigger consolidation of the Seller's finances on to the Company's financial statements under FASB ASC 810. The Company will perform a preliminary consolidation assessment based on the Proposals received. The Company reserves the right to allow a Proposal to proceed through the evaluation process through selection of the Priority List and work with the Proposer on this issue prior to or during PPA negotiations.

- **Community Outreach:** Gaining community support is an important part of a Project’s viability and success. A comprehensive community outreach and communications plan (“Community Outreach Plan”) is an essential roadmap that guides a developer as they work with various communities and stakeholders to gain their support for a Project. Proposers must include a Community Outreach Plan that describes the Proposer’s commitment to work with the neighboring community and stakeholders and to provide them timely Project information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, community scoping (including stakeholders and community concerns), Project benefits, government approvals, development process (including Project schedule), and a comprehensive communications plan.

Proposers need to also be mindful of the Projects’ potential impacts to historical and cultural resources. At a minimum, Proposers should identify: (1) any valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist. Also, at a minimum, Proposers should have already contracted with a consultant with expertise in this field to begin a cultural impact assessment for the Project.

4.4 Initial Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Price-related criteria will account for sixty percent (60%) of the total score and non-price-related criteria will account for forty percent (40%) of the total score. The non-price criteria and methodology for applying the criteria are explained in [Section 4.4.2](#).

The Company will employ a closed-bidding process for this solicitation in accordance with [Part IV.H.3](#) of the Framework where the price and non-price evaluation models to be used will not be provided to Proposers. However, the Company will provide the Independent Observer with all necessary information to allow the Independent Observer to understand the evaluation models and to enable the Independent Observer to observe the entire analysis to ensure a fair process. The evaluation models will be finalized prior to the receipt of Proposals.

4.4.1 Initial Evaluation of the Price Related Criteria

For the initial price analysis, an equivalent energy price (Levelized \$/MWh) will be calculated for each renewable generation and renewable generation with energy storage proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), Price for Purchase of Electric Energy (\$/MWh), and the Net Energy Potential (“NEP”) RFP Projection (MWh) information defined in RFP Sections 3.9 and 3.10.

For energy storage only proposals, a levelized energy price (Levelized \$/MWh) will be calculated for each energy storage Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the ~~facilities’~~facility’s energy arbitrage capability.

In order to fairly evaluate Proposals with different technologies and characteristics while using an equivalent energy price in Levelized \$/MWh at this stage in the evaluation, the Company will group Proposals into technology-based evaluation categories, as applicable. For example²¹: (1) Wind generation (MWh) and Energy storage; (2) Solar generation (MWh) and Energy storage; (3) Energy storage only.

The Eligible Proposal with the lowest LEP in each evaluation category will receive 600 points. All other Eligible Proposals in that evaluation category will receive points based on a proportionate reduction using the percentage by which the Eligible Proposal’s LEP exceeds the lowest LEP in that evaluation category. For example, if a Proposal’s LEP is ten percent (10%) higher than the lowest LEP in that evaluation category, the Proposal will be awarded 540 points (that is, 600 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal within each evaluation category.

4.4.2 Initial Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated ~~based~~ on each of the eight (8) non-price criteria categories set forth below:

- Community Outreach and Cultural Resource Impacts
- State of Project Development and Schedule
- Performance Standards
- Environmental Compliance and Permitting Plan
- Experience and Qualifications
- Financial Strength and Financing Plan
- RDG PPA or ESPPA Contract ~~Exceptions~~Proposed Modifications
- Guaranteed Commercial Operations Date

Each of the first three criteria – Community Outreach and Cultural Resource Impacts, State of Project Development and Schedule, Performance Standards – will be weighted

²¹ There may be other technologies that are offered in this RFP. This list is illustrative of how technology-based evaluation categories will be established for the Initial Evaluation.

twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable).

The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each evaluation category with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level²² for four (4) or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed Project.

The Companies' evaluation of the non-price criteria will be based on the materials provided by a Proposer in its Proposal. Acceptance of any Proposal into the Final Award Group shall not be assumed or construed to be an endorsement or approval that the materials provided by Proposer are complete, accurate, or in compliance with applicable law. The Companies assume no obligation to correct, confirm, or further research any of the materials submitted by Proposers. Proposers retain sole responsibility to ensure their Proposals are accurate and in compliance with all laws.

The non-price criteria are:

- **Community Outreach and Cultural Resource Impacts** – Gaining community support is an important part of a Project's viability and success. An effective Community Outreach Plan will call for early meaningful communications with stakeholders and will reflect a deep understanding and respect for the community's desire for information to enable them to make informed decisions about future projects in their communities. Therefore, Proposals will be evaluated on the quality of the Community Outreach Plan to inform the Project's impacted communities. Proposers need to also be mindful of the Project's potential impacts to historical and cultural resources. Proposers should at least identify (1) valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

²² A score of 3 is the "meets minimum standards" level that a Proposal must achieve in at least five (5) criteria.

At a minimum, Proposals should include a Community Outreach Plan that describes the Proposer's commitment to work with the neighboring community and stakeholders and to provide timely Project information during project development, construction, and operation. The Community Outreach Plan shall include, but not be limited to, the following:

- 1) Project description. A thorough description including a map of the location of the Project. This information will help the community understand the impact that the Project may have on the community.
- 2) Community scoping. Identify stakeholders (individuals, community leaders, organizations), community issues and concerns, and community sentiment.
- 3) Project benefits. An explanation of the need for the Project. This will help the community to understand how the Project might benefit their community.
- 4) Government approvals. Required government permits and approvals, public hearings, and other opportunities for public comment. This information will help the community to understand the level of public scrutiny and participation that might occur for the Project and the opportunities to provide public comments.
- 5) Development process. A Project schedule that identifies key milestones will facilitate the community's understanding of the development process.
- 6) Communications Plan. A communications plan including a detailed community outreach schedule that will keep the affected communities and stakeholders informed about the Project's outreach efforts during the early Project development period through construction and operations.

Preference will be given to Proposers who have already identified established contacts to work with the local community, have used community input to incorporate changes to the final design of the Project and mitigate community concerns, have proposed a community benefits package (including details of the community recipients and benefits package), or have community consultants as part of the Project team doing business in Hawai'i that have successfully worked with communities in Hawai'i on the development of two or more energy projects or projects with similar community issues. These criteria are aligned with the Companies' community engagement expectation whereby all developers will be required to engage in community outreach prior to signing a PPA with the Companies. This process is also outlined in RFP Section 5.3.

Also, at a minimum, Proposers should have already contracted with a consultant with expertise in such field to begin a cultural impact assessment for the Project. Preference will be given to Proposals that are further along in the assessment process and are able to provide a mitigation/action plan or are able to provide a date for when a mitigation/action plan will be available that addresses any identified cultural resource issues.

- **State of Project Development and Schedule** – Projects that are further along in development generally have lower project execution risk and a greater probability of being able to be successfully placed into service prior to the GCOD

(specifically identified in each Proposal). At a minimum, Projects should demonstrate how they plan to capture any ITC safe harbor and reach their GCOD specified, including identification of risks and schedule assumptions. (Schedules must identify the IRS completion date and PUC approval dates assumed.) Proposals should also demonstrate, via a detailed critical path schedule, that there is a high likelihood that the Project will be able to reach commercial operations as specified. Proposals shall include a Gantt chart that clearly illustrates the overall schedule and demonstrates achievement of any ITC safe harbor, if applicable, and commercial operations by their specified GCOD. The Gantt chart shall include task durations and dependencies, identify tasks that will be fast tracked, and identifies slack time and contingencies. This criterion will also look at the high-level Project costs set forth in the Proposal including: costs for equipment, construction, engineering, Seller-Owned Interconnection Facilities, Company-Owned Interconnection Facilities, land, annual O&M, the reasonableness of such costs and the assumptions used for such costs. Project costs that do not appear reasonable for a project of the size proposed may result in a lower ranking for this criterion if the Company reasonably determines that the cost information is unrealistic based on prior experience in the market which may result in a risk that the Project can be built on time and for the price proposed by the Proposer. The Company reserves the right to discuss any cost and financial information with a Proposer to ensure the information provided is accurate and correct.

- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the RDG PPA or the ESPPA. The Company will review the Proposal information received, including design documents and operating procedures materials provided in the Proposal, and evaluate whether the Project as designed is able to meet the Performance Standards identified in the RDG PPA or ESPPA and in this RFP. At a minimum, in addition to meeting the Performance Standards, the Proposals should include sufficient documentation, provided in an organized manner, to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed on a timely basis. Preference will be given to Proposals that provide detailed technical and design information showing how each standard can be met by the proposed Facility. Preference will also be provided to proposed Projects that offer additional capabilities (e.g., Black-Start, Grid-Forming).
- **Environmental Compliance and Permitting Plan** – This criterion relates to the potential (short- and long-term) environmental impacts associated with each project, the quality of the plan offered by the Proposer to mitigate and manage any environmental impacts (including any pre-existing environmental conditions), and the plan of Proposers to remain in environmental compliance over the term of the contract. These impacts are reflected on a technology-specific basis. Completing any necessary environmental review and obtaining the required permitting in a timely manner is also important and Proposals will be evaluated on their plan to identify, apply for, and secure the required permits for the Project,

any permitting activity that has been completed to date, including having initial discussions with U.S. Fish and Wildlife and the State of Hawai'i Department of Land and Natural Resources' Division of Forestry and Wildlife, to the extent applicable, prior to submitting a Proposal, and the degree of certainty offered by the Proposer in securing the necessary permits.

At a minimum, proposed Projects should be expected to have minimal environmental impact for most areas and Proposals should provide a comprehensive plan to mitigate the identified potential or actual significant environmental impacts to remain in environmental compliance. The proposed mitigation plans should be included in the Project timeline. Preference will be given to Proposals that provide a more detailed plan as well as those that have proactively taken steps to mitigate potential environmental impacts.

Also, this criterion requires that, at a minimum, Proposers should have identified, and disclosed in their Proposal(s), all major permits, approvals, appurtenances, and entitlements (including applicable access, rights of way and/or easements) (collectively, the "permits") required and have a preliminary plan for securing such permits. Preference will be given to Proposals that are able to provide a greater degree of certainty that its plan to secure the required permits is realistic and achievable, or have already received all or a majority of the required permits. The Proposer should disclose all identified (a) discretionary permits required, i.e., those requiring public or contested case hearings and/or review and discretionary approval by an appropriate government agency and (b) ministerial conditions without discretionary approval conditions. In all cases, the Proposer must provide a credible and viable plan, including evidence of any steps taken to date, to secure all necessary and appropriate permits necessary for the project. For example, if the project is located within an agricultural district, the Proposer shall provide evidence of Proposer's verification with the appropriate government agency that the project complies with HRS Section 205-2 and Section 205-4.5, relating to solar energy facilities placed on agricultural land, provided, however ~~that reliance upon an exemption to the requirements of HRS Section 205-2 and/or Section 205-4.5 available under HRS Section 205-6, shall not satisfy this requirement unless the exemption has already been granted for the desired use and Proposer is in possession of a valid, unexpired, and nonappealable special use permit issued under such section at the time Proposer's Proposal(s) is/are submitted in response to this RFP, and provided further, that reliance upon an amendment to land use district boundary lines available under HRS Section 205-4 shall also not satisfy this requirement unless such amendment has already been granted for the desired use and Proposer is in possession of a valid, unexpired, and nonappealable order amending such land use district boundary or boundaries to permit Proposer's desired use at the time Proposer's Proposal(s) is/are submitted in response to this RFP, that where a special use permit (under Section 205-6), exemption (under Section 205-6), or amendment to land use district boundary lines (under Section 205-4) is required to secure such compliance, Proposer shall identify the need for such permit, exemption, or amendment and provide a list of required prerequisites and/or conditions and a realistic timeline necessary to obtain such permit,~~

exemption, or amendment satisfactory for Proposer to still meet its designated GCOD.

- **Experience and Qualifications** – Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining projects (including all components of the project) of similar size, scope, and technology. At a minimum, Proposals must show via the table format specified in RFP Appendix B Section 2.13 that at least one (1) member must have specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one electricity generation project including all components of the project similar to the Project being proposed. Preference will be given to Proposers with experience in successfully developing multiple projects that are similar to the one being proposed and/or that have prior experience successfully developing and interconnecting a utility scale project to the Company's System.
- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the Project as well as assesses the financial strength and capability of the Proposer to develop the Project. A complete financial plan addresses the following issues: Project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the Project. The financial strength of Proposers or their credit support providers will be considered, including their credit ratings. The financing participants are expected to be reasonably strong financially. Developers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody's, Fitch) will also be given preference, with those that have higher credit ratings ranked higher.
- **RDG PPA or ESPPA Contract Proposed Modifications** – Proposers are encouraged to accept the contract terms identified in the model agreements in their entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model agreements without edits will receive a higher score and will be the only proposals that can achieve the highest scoring for this non-price evaluation. Technology-specific or operating characteristic-required modifications, with adequate explanation as to the necessity of such modifications, will not jeopardize a project's ability to achieve the highest score. Proposers who elect to propose modifications to the model agreements shall provide a Microsoft Word red-line version of the applicable document identifying specific proposed modifications to the model agreement language, as well as a detailed explanation and supporting rationale for each modification. General comments without proposed alternate language, drafting notes without explanation or alternate language, footnotes such as "parties to discuss," or a reservation of rights to make additional modifications to the model agreements at a later time are unacceptable, will be considered unresponsive, and will result in a lower score. The Company and Independent Observer will

evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal.

- **Guaranteed Commercial Operations Date:** The Company is procuring resources and incorporating projects onto its System in Stages as part of its long-term plan to meet RPS goals. Proposers will be held to the Guaranteed Commercial Operations Date identified in their Proposal. The GCOD will be a Guaranteed Milestone and will be inserted without amendment into the RDG PPAs or ESPPA, as applicable. Proposers that are able to design for and commit to an earlier GCOD will be given more favorable scoring. Proposers must have met the GCOD requirements of RFP Section 1.2.14 prior to being evaluated in this non-price criterion.

4.5 Selection of a Priority List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 60% price-related criteria/40% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both price and non-price scores described above, will result in a ranking of proposals within each technology-based evaluation category.

The Company will determine a Priority List from the highest scoring Proposals for each technology-based evaluation category. Each Priority List will include a sufficient number of projects, but not less than two (2) Proposals per technology-based evaluation category, such that the Company can assemble portfolio combinations that meet or exceed the ~~Renewable Energy~~renewable energy MWh and ~~Storage~~storage MW and MWh targets for comparison in the Detailed Evaluation. The Companies will develop the Priority Lists in consultation with the Independent Observer. The Companies reserve the right, in consultation with the Independent Observer, to limit the projects allowed for further consideration in the initial evaluation to projects that fall within 15% of the lowest price proposed per technology-based evaluation category. Selection to the Priority List does not assure an eligible Project's inclusion in the selection of the Final Award Group.

4.6 Best and Final Offer (BAFO)

- 4.6.1 The Company will solicit a Best and Final Offer from Proposers selected to a Priority List in a technology-based evaluation category. If the SBO is selected to a Priority List, the SBO will not be eligible to provide a Best and Final Offer and the original pricing submitted in its Self-Build Proposal will be used in the Detailed Evaluation. All other Proposers selected to a Priority List will have the opportunity to update (downward only)²³ the pricing elements in their Proposal to improve the competitiveness of their Proposal prior to being further assessed in the Detailed Evaluation phase. At this time, updates may only be made to the following pricing elements:

²³ Proposers will only be allowed to adjust pricing elements downward. No upward adjustment to the pricing elements will be permitted or considered. All other characteristics of the Proposal and Facility capabilities must remain valid and unchanged (e.g., NEP, GCOD, etc.)

- Lump Sum Payment (\$/year) amount
- Price for Purchase of Electric Energy (\$/MWh) amount. Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).

Proposers will not be allowed to increase their price²⁴ but may elect to maintain the same pricing submitted in their original Proposal. Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

- 4.6.2 If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.²⁵

4.7 Detailed Evaluation

The Best and Final Offers of the Priority List Proposals, as well as original Self-Build Proposals if advanced to the Priority Listed Proposals, will be further assessed in the Detailed Evaluation to identify the Priority List Proposals that meet the variable renewable dispatchable generation MWh and energy storage MW and MWh targets to determine the Proposals selected to the Final Award Group.

The Company will build Portfolios for evaluation that meet ~~both~~ the energy MWh target and the ~~storage MW and MWh requirements~~ Storage Requirement target. ~~Both Projects that provide In order to fulfill the Storage Requirement target, both standalone energy storage only as well as Projects that provide both variable renewable dispatchable projects and generation MWh and energy projects paired with storage can satisfy the storage requirement, intended to meet the manner described herein~~ Storage Requirement will be evaluated together. The Company expects that for Projects that provide energy storage only, such storage facilities will be charged by available grid resources. Such standalone storage projects that have a GCOD of April 30, 2023 or sooner and meet the interconnection requirements in Section 1.2.14 will be evaluated as meeting the ~~storage MW and MWh requirements~~ Storage Requirement of this RFP based on 100% of their respective proposed MW and MWh quantities. ~~Energy storage~~ Generation projects ~~that are paired with variable renewable dispatchable generation facilities~~ storage that have a GCOD of April 30, 2023 or sooner and meet the interconnection requirements in Section 1.2.14²⁶ will be evaluated as meeting the ~~storage MW and MWh requirements~~ Storage Requirement.

²⁴ Proposers will not be allowed to increase the pricing in their Proposals to address interconnection and/or system upgrade costs or for any other reason.

²⁵ The Company reserves the right, in consultation with the Independent Observer, to adjust the parameters of the BAFO, in the unlikely event that system needs have evolved in a way that the Proposals received do not fully address.

²⁶ Standalone storage projects or storage projects paired with variable renewable dispatchable generation facilities that have a GCOD of May 1, 2023 or later, or that do not meet the interconnection requirements of Section 1.2.14 will not have any percentage of their paired battery MW rating counted towards ~~storage MW requirements~~ the Storage Requirement.

Requirement of this RFP based on a percentage of their respective proposed MW and MWh quantities, based on the maximum percentage of charging from the grid proposed to be allowed for the paired storage facility, as determined by the table below:²⁷

Paired Project Battery Allowed Percentage	Percentage of Paired Battery Rating towards Storage <u>Requirements Requirement</u>
Grid Charging	
0%	10%
5%	20%
10%	40%
15%	60%
20%	80%
25%	100%

The detailed evaluation process will consist of assessment of combinations of Proposals from the Priority Lists that meet the energy and storage targets of this RFP (“Portfolios”). A production simulation iteration will be created for each Portfolio to evaluate the Total Net Cost (Cost and Benefits) of integrating the Portfolio onto the Company’s System. Each Portfolio’s Total Net Cost will be compared against the Base Case, described further below.

The Company intends to use a computer model for this analysis. The evaluation will be based on the Total Net Cost (Costs and Benefits) to the Company of integrating the combination of Priority List Proposals onto the Company’s System which includes:

1. The cost to dispatch the combination of Projects and the energy and storage purchased;
2. The fuel cost savings (benefits) and any other direct savings (IPP savings from dispatchable fossil fuel savings) resulting from the displacement of generation by the Priority List Proposals, including consideration of round-trip efficiencies for facilities with storage;
3. The estimated increase (or decrease) in operating cost, if any, incurred by the Company to maintain system reliability; and
4. The cost of imputed debt, if applicable.

As noted, the Company will take into account the cost of rebalancing its capital structure resulting from any debt or imputed debt impacts associated with each Proposal (including

²⁷ The Company acknowledges that the pricing proposed for a variable renewable dispatchable generation facility that is paired with a storage facility will vary depending on the amount of grid charging of the storage permitted in the proposal.

any costs to be incurred by the Company, as described above, that are necessary in implementing the Proposal). The Company proposes to use the imputed debt methodology published by S&P that is applicable to the Proposal being evaluated. S&P views long-term PPAs as creating fixed, debt-like financial obligations that represent substitutes for debt-financed capital investments in generation capacity. By adjusting financial measures to incorporate PPA fixed obligations, greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy new load are achieved.

During the Detailed Evaluation and before the Proposals advance to the Final Award Group, the Company will perform load flow analyses to determine if certain Project combinations introduce transmission circuit constraints that will factor into the selection process. This is to address the possibility that even though sufficient line capacity was identified for an individual Project, large Projects on separate transmission circuits that are in close proximity with each other could introduce additional transmission circuit constraints. The Projects selected must not have any additional constraints imposed based on the load flow analysis to advance to the Final Award Group. However, the Company reserves the right, in consultation with the Independent Observer, to allow minor modifications to a Proposal to avoid such additional constraints. If such modification resulted in a reduced size of the Facility, the pricing proposed would also need to be revised. Under no circumstances would a Proposer be allowed to increase their price as a result of such minor modification.

Also in the Detailed Evaluation, other factors will be validated to ensure that the final combination of Projects provides the contemplated benefits that the Company seeks. The Company will evaluate the collateral consequences of the implementation of a combination of Projects, including consideration of the geographic diversity, resource diversity, interconnection complexity, and flexibility and latitude of operation control of the Projects.

The Company may assess additional combinations of Projects if requested by the Independent Observer and if the time and capability exist to perform such analyses.

4.8 Selection of the Final Award Group

Based on the results of the Detailed Evaluation and review of the results with the Independent Observer, the Company will select a Final Award Group from which to begin contract negotiations. The Company intends to select projects that meet the targeted needs and provide customer benefits. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in the Final Award Group.

Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of a PPA.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Priority List or the Final

Award Group, the Company reserves the right, at any time prior to submission of the PPA Application with the PUC application, in consultation with the Independent Observer, to disqualify the Proposer from the RFP. If discovery of the incorrect or misrepresented information is made after the Company has filed its PUC application for approval of the PPA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a ~~proposal~~Proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a ~~proposal~~Proposal, including failure to reach agreement to the PPA, the Company, taking into consideration the timing of such removal and the current status of the Company's needs under the RFP, in consultation with and concurrence from the Independent Observer, will review the Priority List to determine (1) if another ~~proposal~~Proposal should be added to the Final Award Group; (2) if either of the Contingency Plan or Parallel Plan should be pursued; or (3) if the remaining ~~proposals~~Proposals in the Final Award Group should remain unchanged.

Order No. 36536 "directs the Companies to work with the [Independent Observers] to increase bid transparency within the RFP process, while maintaining an appropriate level of confidentiality regarding bids and bidders." The Companies agree that it is desirable for the RFP process to be as transparent as possible while maintaining the confidentiality of Proposer and Proposal information. The type and quantity of information that can be disclosed will not be known until the Companies and the Independent Observer have a better understanding of the number and types of ~~proposals~~Proposals received and whether such information can be easily anonymized. The Companies will work with the Independent Observers to determine an appropriate level of disclosure after Proposals are received with a goal of disclosing more information than was disclosed in Stage 1.

Chapter 5: Post Evaluation Process

5.1 Interconnection Requirements Study Process

A complete package of IRS Data Request worksheets and project single line diagram(s) shall be submitted with each Proposal. For Projects with a proposed GCOD in 2022, the models for equipment and controls, list(s) to clearly identify the components and respective files (for inverters and power plant controller), and complete documentation with instructions, shall be submitted within 60 days thereafter. See Section 2.11.1 of Appendix B. For all other Projects, the same complete submittal shall be due within 60 days after selection to the Final Award Group. PSSE Generic models, PSSE User models, and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the Company's PPA performance requirements. These must be checked for functionality by the ~~bidder~~Proposer or its vendors and consultants prior to submission to the Company. Similar and fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company. PSSE generic models shall be provided promptly after the PSSE user models have been approved by the Company.

After proposals and models are submitted, the Company will inspect the data packages for general completeness. For any incomplete submissions, a list of missing or non-functional items will be provided. Proposers will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove Proposals from the Priority List or Final Award Group, or may terminate PPA negotiations or executed PPAs, if their submission requirements are deemed incomplete for the lack of requested models. Proposals that are complete will be considered for further evaluation. A formal, technical model checkout will be deferred until a later date when IRS Agreements and deposits are in place, so that the expert subject matter work can be provided by the Company's IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for each selected project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for each project, (b) any considerations that are specific to a particular project and location, and (c) system impact analyses of the projects as a group. Interconnection cost and schedule, including cost of any required system upgrades, will be determined in a subsequent Facilities Study.

The technical model checkouts will be conducted first. Upon identification of any functional problems or deficiencies, corrective action shall be taken immediately and on an interactive basis so that the problems or deficiencies can be resolved within 15 Days, including re-submission of data and updated models, or the Project shall be deemed withdrawn. At the discretion of the Company and provided that there is a demonstration of good faith action to minimize delay that would affect the schedule for IRS analyses, a second round of model checkout and problem solving may proceed. Thereafter, any notice that a Project is deemed withdrawn for lack of completeness shall be final. Subject to consultation with the Independent Observer, failure to provide all requested material within the time(s) specified, or changes to the data provided after the due date(s), shall result in elimination from the Final Award Group.

Proposers shall be responsible for the cost of the IRS, under separate agreements for the System Impact Study and the Facilities Study. The overall IRS will provide information including, but not limited to, an estimated cost and schedule for the required Interconnection Facilities for a particular Project and any required mitigation measures. Proposers will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. Upon reviewing the results of the IRS, Proposers will have the opportunity to declare the PPA null and void in the event that the estimated interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal. See Section 12.4 of the RDG PPA or Section 2.3(b) of the ESPPA.

5.2 Contract Negotiation Process

Within five (5) business Days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend

to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. Given the significant scope of the RFP, and depending on the number of Projects selected to the Final Award Group, the Company will prioritize which Projects to negotiate with first. The Company will first prioritize Projects intending to meet the identified ~~20040~~ MW ~~energy storage~~Storage Requirement need. Prioritization will take into consideration the GCOD of the Project, the benefits to and the needs of the Company's System, and extensiveness of the exceptions to the model PPA. While PPA negotiations and submission of executed PPAs for approval will take place on a rolling basis, the Company's goal is to begin to complete this process for the first projects within six (6) months of notification of intent to enter contract negotiations. The IRS may not be completed at such time. The Company intends to execute and file the PPA with the PUC for approval and later amend the PPA to include the results of the IRS.

5.3 Community Outreach and Engagement

The public meeting and comment solicitation process described in this Section and Section 29.21 of the PPA model RDG PPA or Section 27.17 of the model ESPPA (Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by a Proposer. Within 30 Days of the start of PPA negotiations, Proposers shall have provided the Company with an updated comprehensive Community Outreach Plan to work with and inform neighboring communities and stakeholders and to provide them timely information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, Project stakeholders, community concerns and Proposer's efforts to address such concerns, Project benefits, government approvals, Project schedule, and a comprehensive communications plan. Upon selection to the Final Award Group, a Proposer's Community Outreach Plan shall be a public document available to the public on the Proposer's website and upon request. The Proposer shall also provide the Company with links to their Project website and Community Outreach Plan, which the Company will post on the Company's website. Prior to the execution date of the PPA, Proposers shall also host a public meeting in the community where the proposed Project is to be located for community and neighborhood groups in and around the vicinity of the Project Site that provided the neighboring community, stakeholders, and the general public with: (i) a reasonable opportunity to learn about the proposed Project; (ii) an opportunity to engage in a dialogue about concerns, mitigation measures, and potential community benefits of the proposed Project; and (iii) information concerning the process and/or intent for the public's input and engagement, including advising attendees that they will have thirty (30) calendar days from the date of said public meeting to submit written comments to Company and/or Proposer for inclusion in the Company's submission to the PUC of its application for a satisfactory PUC Approval Order. The Proposer shall collect all public comments, and then provide the Company copies of all comments received in their original, unedited form, along with copies of all comments with personal information redacted and ready for filing. If a PPA is executed by the Proposer and the Company, the Company may submit any and all public comments (presented in its original, unedited form) as part of its PUC application for this

Project. Proposers shall notify the public at least three weeks in advance of the meeting. The Company shall be informed of the meeting. The Company will provide Proposers with detailed instructions regarding the community meeting requirement after the selection of the Final Award Group. (For example, notice will be published in county or regional newspapers/media, as well as media with statewide distribution. The Proposer will be directed to notify certain individuals and organizations. The Proposer will be provided templates to use for the public meeting notices, agenda, and presentation.) Proposers must also comply with any other requirement set forth in the PPA relating to Community Outreach.

Following the submission of the PUC application for the Project, and prior to the date when the Parties' statements of position are to be filed in the docketed PUC proceeding for the Project, the Proposer shall provide another opportunity for the public to comment on the proposed Project. The Proposer's statement of position filed in the docket associated with the Project will contain an attachment including those comments.

The Proposer shall be responsible for community outreach and engagement for the Project, and that the public meeting and comment solicitation process described in this section do not represent the only community outreach and engagement activities that can or should be performed.

5.4 Greenhouse Gas Emissions Analysis

Proposers whose Proposal(s) are selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or Company's consultant(s) upon request all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support of a PUC application for approval of the PPA for the project (the "GHG Review"). Proposers shall be responsible for the full cost of the GHG Review associated with their project under a separate agreement between the Proposer and the Company. The GHG Review is anticipated to address whether the GHG emissions that would result from approval of the PPA and subsequent to addition of the Project to the Company's system are greater than the GHG emissions that would result from the operations of the Company's System without the addition of the Project, whether the cost for renewable, dispatchable generation, and/or energy storage services as applicable under the PPA is reasonable in light of the potential for GHG emissions, and whether the terms of the PPA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval of PPA

Any signed PPA resulting from this RFP is subject to PUC approval as described in the RDG PPA, including Article 12 and Section 29.20 thereof, or Article 24 of the ESPPA.

5.6 Facility In-Service

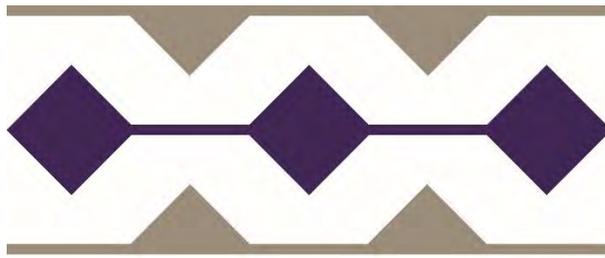
In order to facilitate the timely commissioning of the numerous projects required to meet the MW and MWh targets of this RFP, the Company requires the following be included with the 60% design drawings: relay settings and protection coordination study, including fuse selection and ac/dc schematic trip scheme.

For the Company to test the Facility, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire Facility must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the IPP and ready for operation prior to Company testing.

If approved drawings are not available, or if the Facility is otherwise not test ready as scheduled, the Project will be moved to the end of the Company's testing queue. If tests are not completed within the allotted scheduled testing time, the Project will be moved to the end of the Company's testing queue. The IPP will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to PPA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the PPA.

EXHIBIT 7

Redline of Final Renewable RFP for the Island of Hawai'i
against July 26, 2019 Proposed Final Draft RFP



**Hawai'i
Electric
Light**

~~DRAFT~~ REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

AND

ENERGY STORAGE

ISLAND OF HAWAI'I

~~JULY 26~~ AUGUST 22, 2019

Docket No. 2017-0352

Table of Contents

Chapter 1: Introduction and General Information	1
1.1 Authority and Purpose of the Request for Proposals	2
1.2 Scope of the RFP	2
1.3 Competitive Bidding Framework	7
1.4 Role of the Independent Observer	7
1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual.....	8
1.6 Company Contact for Proposals	8
1.7 Proposal Submittal Requirements.....	8
1.8 Proposal Fee.....	10
1.9 Procedures for the Self-Build or Affiliate Proposals	11
1.10 Dispute Resolution Process.....	13
1.11 No Protest or Appeal.....	14
1.12 Modification or Cancellation of the Solicitation Process	14
Chapter 2: Resource Needs and Requirements	14
2.1 Performance Standards	14
2.2 Transmission System	15
2.3 Interconnection to the Company System	15
Chapter 3: Instructions to Proposers	17
3.1 Schedule for the Proposal Process	17
3.2 Company RFP Website / Electronic Procurement Platform.....	17
3.3 Information Conferences	18
3.4 Preparation of Proposals	18
3.5 Organization of the Proposal	19
3.6 Proposal Limitations	19
3.7 Proposal Compliance and Bases for Disqualification.....	20
3.8 Power Purchase Agreement	20
3.9 Pricing Requirements.....	22
3.10 Project Description.....	24
3.11 Sites Identified by the Company.....	25
3.12 Confidentiality	26

3.13	Credit Requirements Under the PPA	27
Chapter 4: Evaluation Process and Evaluation Criteria		27
4.1	Proposal Evaluation and Selection Process	27
4.2	Eligibility Requirements Assessment	29
4.3	Threshold Requirements Assessment	30
4.4	Initial Evaluation – Price and Non-Price Analysis	33
4.5	Selection of a Priority List	39
4.6	Best and Final Offer (BAFO)	40
4.7	Detailed Evaluation.....	40
4.8	Selection of the Final Award Group	42
Chapter 5: Post Evaluation Process		43
5.1	Interconnection Requirements Study	43
5.2	Contract Negotiation Process.....	45
5.3	Community Outreach and Engagement	45
5.4	Greenhouse Gas Emissions Analysis	46
5.5	PUC Approval of PPA	47
5.6	Facility In-Service.....	47

List of Appendices

Appendix A	Definitions
Appendix B	Proposer's Response Package / IRS Data Sheet
Appendix C	Code of Conduct Procedures Manual
Appendix D	PowerAdvocate User Information
Appendix E	Mutual Confidentiality and Non-Disclosure Agreement
Appendix F	Description of Available Sites
Appendix G	Self-Build Option and Self Build Option Team Certification Form
Appendix H	Interconnection Facilities and Cost Information
Appendix I	Rule 19 Tariff
Appendix J	Model PV RDG PPA
Appendix K	Model ESPPA
Appendix L	Model Wind RDG PPA

Chapter 1: Introduction and General Information

Hawai‘i Electric Light Company, Inc. (“Hawai‘i Electric Light” or the “Company”) seeks proposals for the supply of qualified variable renewable dispatchable generation and energy storage for the Hawai‘i Electric Light System in accordance with this Request for Proposals (“RFP”).¹ The total amount of variable renewable dispatchable generation being solicited in this RFP is the capability to provide up to 444,000 megawatt hours (“MWh”) annually. Additionally a total of 18 megawatts (“MW”) of Fast Frequency Response (as defined in [Appendix J, K, and L](#)) is being solicited which may either be fulfilled through standalone contingency reserve storage projects or generation projects paired with storage proposed in response to this RFP or through Fast Frequency Response 1 (“FFR-1”) capability on Hawai‘i island bid into the Companies’ RFP for Delivery of Grid Services from Customer-Sited Distributed Energy Resources (“Grid Services RFP”).

The Company or its Affiliate may submit a Proposal in response to this RFP subject to the requirements of this RFP.

The Company seeks variable renewable dispatchable generation projects (with or without storage systems) and standalone energy storage projects in this RFP. However any photovoltaic (“PV”) projects must be paired with a storage component. The Company intends to contract for variable renewable dispatchable generation projects through this RFP using its Model Renewable Dispatchable Generation Power Purchase Agreement (“RDG PPA”), which treats variable generation facilities as fully dispatchable. The Company has created a photovoltaic (“PV”) version (the “PV RDG PPA”) and a wind version (the “Wind RDG PPA”) of its RDG PPA attached as [Appendix J](#) and [Appendix L](#) respectively.² If the proposed Project utilizes a technology other than PV or wind and/or contains components that are not encompassed by the RDG PPA, then the terms of the RDG PPA will be modified to address the specific technology and/or component.

The Company intends to contract for standalone energy storage projects through this RFP using its Model Energy Storage Power Purchase Agreement (“ESPPA”), pursuant to which Hawai‘i Electric Light will purchase energy storage services (i.e., Fast Frequency Response and ancillary services). The ESPPA is attached as [Appendix K](#).²

Each successful Proposer will provide variable renewable dispatchable generation and/or energy storage to the Company pursuant to the terms of an RDG PPA or ESPPA, which will be subject to PUC review and approval by the State of Hawai‘i Public Utilities Commission (“PUC”).

The Company will evaluate Proposals using the evaluation and selection process described in [Chapter 4](#). The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Projects. The amount of generation and storage that the Company may acquire from this RFP depends on, among other things, the quality and cost-effectiveness of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company’s forecasts;

¹ The Company is soliciting proposals for renewable dispatchable generation and energy storage in stages. The “Stage 1” RFPs were conducted in 2018. This is part of the “Stage 2” RFPs to be conducted in 2019.

² The RDG PPA for PV and Wind, and ESPPA for standalone energy storage, are available on the Company’s RFP website and through the PowerAdvocate platform for the RFP.

transmission availability; and changes to regulatory or legal requirements. If attractive Proposals are received that will provide energy and energy storage in excess of the targeted amounts, the Company will consider selecting such Proposal(s) if benefits to customers are demonstrated.

All requirements necessary to submit a Proposal(s) are stated in this RFP. A description of the technical requirements for Proposers is included in the body of this RFP, Appendix B, and in the RDG PPA and ESPPA attached as Appendix J, K, and L.

All capitalized terms used in this RFP shall have the meaning set forth in the glossary of defined terms attached as Appendix A. Capitalized terms that are not included in Appendix A shall have the meaning ascribed in this RFP.

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. ~~3635636474~~ issued on ~~June 10~~ August 15, 2019 in Docket No. 2017-0352 as part of a procurement process established by the PUC.
- 1.1.2 This RFP is subject to Decision and Order (“D&O”) No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai‘i), which sets forth the PUC’s Framework for Competitive Bidding (“Framework” or “Competitive Bidding Framework”).
- 1.1.3 All Proposals with a generation component submitted in response to this RFP must utilize qualified renewable energy resource(s) as defined under the Hawai‘i Renewable Portfolio Standards (“RPS”) law.³ By statute, “Renewable Energy” means energy generated or produced using the following sources: (1) wind; (2) the sun; (3) falling water; (4) biogas, including landfill and sewage-based digester gas; (5) geothermal; (6) ocean water, currents, and waves, including ocean thermal energy conversion; (7) biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste; (8) biofuels; and (9) hydrogen produced from renewable energy sources.⁴
- 1.1.4 Proposers should review the Hawaiian Electric Companies’ Power Supply Improvement Plans, filed in Docket No. 2014-0183 on December 23, 2016 (“PSIP Update Report: December 2016” or “PSIP”). Consistent with the PSIP, the primary purpose of this RFP is to obtain variable renewable energy and energy storage so that the Company can continue to transform Hawai‘i’s power supply portfolio from fossil fuel-based generation to renewable-based generation ~~towards~~ to meet Hawai‘i’s 100% RPS requirement.

1.2 Scope of the RFP

- 1.2.1 Proposers should note and will be required to expressly acknowledge in their Proposals that the Company reserves the right, per PUC Order 36536, to select less than the full amount of generation solicited in this RFP in the event that specific HELCO system needs (e.g. as a result of the availability of either or both of the Puna Geothermal

³ RPS requirements in Hawai‘i are codified in Hawai‘i Revised Statutes (“HRS”) §§ 269-91 through 269-95.

⁴ See HRS § 269-91.

Ventures (“PGV”) and Hu Honua Bioenergy (“Hu Honua”) facilities) are revised during the course of the RFP process.

- 1.2.2 The Company does not have a predetermined preference for a particular renewable energy generation or storage technology.
- 1.2.3 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Project.
- 1.2.4 Proposals that will require system upgrades and the construction of which, in the reasonable judgment of the Company (in consultation with the Independent Observer), creates a significant risk that their Project’s Guaranteed Commercial Operations Date (“GCOD”) will not be met will not be considered in this RFP.
- 1.2.5 Projects submitted in response to this RFP must be located on the Island of Hawai‘i.
- 1.2.6 Proposers will determine their Project Site. Proposers have the option of submitting a Proposal using potential Sites offered and described in Section 3.11. Proposers must locate all Project infrastructure within areas of their Site that are outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017)⁵ and are not located within a Tsunami Evacuation Zone.⁶
- 1.2.7 Projects must interconnect to the Company’s System at the 69 kV level, with the exception of standalone storage projects proposed at the Company-owned Puna Site which may interconnect to the Company system at the 13.8 kV level as described in Appendix F.
- 1.2.8 Projects’ size must be greater than the threshold for a waiver from the Competitive Bidding Framework applicable to Hawai‘i island. No single point of failure from the Facility shall result in a decrease in net electrical output greater than 30 MW. Additionally, in meeting the single point of failure requirement, if the Facility exceeds 30 MW, the Facility must be segmented in equally sized capacities (MW). Each segment must have its own point of interconnection into the Hawai‘i Electric Light system that can be independently dispatched via the Company’s energy management system. Revisions would need to be made to the RDG PPA or the ESPPA to account for multiple points of interconnection.

⁵ Hawai‘i Climate Change Mitigation and Adaptation Commission. 2017. Hawai‘i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai‘i Department of Land and Natural Resources Contract No: 64064. This report is available at: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf

⁶ See Hawai‘i Sea Level Rise Viewer at <https://www.pacioos.hawaii.edu/shoreline/slr-hawaii/>, and National Oceanic and Atmospheric Administration (NOAA) interactive map in partnership with the State of Hawai‘i at <https://tsunami.coast.noaa.gov/#/>.

- 1.2.9 Standalone contingency reserve energy storage projects must be 3 MW, 6 MW, 9 MW, or 12 MW in size.
- 1.2.10 Standalone contingency reserve energy storage projects must also support a switchable mode of operation to allow it to also be used for energy.
- 1.2.11 Contracts for projects that include a generation component selected through this RFP shall use the RDG PPA, as described in Section 3.8. Under the RDG PPA, the Company will maintain exclusive rights to fully direct dispatch of the Facility, subject to availability of the resource and Section 1.2.13 below.
- 1.2.12 Contracts for standalone contingency reserve energy storage projects selected through this RFP shall use the ESPPA, as described in Section 3.8. Under the ESPPA, the Company will maintain exclusive rights to fully direct the charging and discharging of the Facility. Additionally, due to the critical nature and usage of this to support the grid, the ability to control and tune the facility's response to certain grid events and conditions is an important aspect that will be required of these facilities.
- 1.2.13 Generation proposals may be submitted either with or without an energy storage component. However PV projects must be paired with an energy storage component. The energy storage component can be charged during periods when full potential export of the generation Facility is not being dispatched by the Company, and the storage component can be used to provide energy to the Company during other times that are beneficial to the system. Generation proposals paired with an energy storage component may propose an additional contingency storage component to provide the Fast Frequency Response ("Contingency Storage") whose amount is to be specified by Proposer. The amount of Contingency Storage must be 3 MW, 6 MW, 9 MW, or 12 MW in size. The energy storage component must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the PPA.⁷ The Contingency Storage component must be sized to provide a minimum of one (1) continuous hour at the proposed MW amount throughout the term of the PPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the PPA. If a project proposes an additional 3 MW of Contingency Storage this component must be able to store and discharge at least 3 MWh of energy in a cycle throughout the term of the PPA.

- 1.2.14 Generation proposals that include Contingency Storage must be segregated such that the contingency capacity (FFR mode) is held separate from the load shifting capacity as set forth in Appendix B to the RDG PPA.
- 1.2.15 Generation proposals with Contingency Storage will require a separate interface to control and separately manage the Fast Frequency Response portion to be charged and held in reserve.

⁷ PPA throughout this RFP refers to either/both the RDG PPA or ESPPA.

- 1.2.16 Energy storage components that are paired with a generation Facility must also be able to be charged from the grid at the direction of the Company as described in this section. To be eligible to meet this RFP's Fast Frequency Response need the Contingency Storage must be grid-chargeable from the guaranteed commercial operation date ("GCOD").

For energy storage components that are paired with generating facilities, during the period that allows the Project to maximize and capture the benefits of the federal Investment Tax Credit ("ITC") for the energy storage system, the Proposer can design and specify the amount, if any, of grid charging for the energy storage system. However, after the 5-year ITC recapture period has lapsed, any energy storage component ~~coupled~~paired with generation must be capable of being 100% charged from the grid at the direction of the Company.

Energy storage components that are paired with generating facilities that are incapable of claiming the ITC must be capable of being 100% charged from the grid from the GCOD.

For example, during the 5-year ITC recapture period, a Proposer ~~coupling~~pairing an energy storage component with a solar facility can specify that its Facility can be charged from the grid (at the direction of the Company) up to 20% of its annual total energy input. After the 5-year ITC recapture period has lapsed, the energy storage component must be capable of being charged up to 100% of its total energy input from the grid at the direction of the Company.

- 1.2.17 Proposals for standalone energy storage will provide contingency reserve and energy to the Company during times that are deemed by the Company to be beneficial to the system. These facilities must be connected to the grid at all times, with the exception of allowed maintenance periods, ~~and~~. Proposals must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of one (1) continuous hour throughout the term of the ESPPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 10 MWh of energy in a cycle throughout the term of the ESPPA.

- 1.2.18 The amount of energy discharged in a year from an energy storage component paired with a generation component will be limited to the energy storage contract capacity (in MWh) multiplied by the number of Days in that year.

- 1.2.19 For standalone contingency reserve storage or Contingency Storage, the storage technology will be selected based on the required charging/discharging duty for the provision of disturbance frequency response. This response will require fast response outside of a specified frequency deadband (setable between .1-.5 Hz), in accordance with specified droop and time parameters. Historical frequency data for 2 second data resolution samples will be provided to bidders and is summarized in Attachment 1 of the Companies' Reliability Standards Working Group Monthly Report in Docket 2011-0206. Additionally, Proposers with an executed Non-Disclosure Agreement with the Company in the form of RFP Appendix E may request the raw data used to create the summary plots included in the monthly reports. Proposers should carefully review such data to

ensure their Proposal meets the needs of the Company System. The proposed Facility’s ability to meet the Company’s Fast Frequency Response need will be evaluated as a part of the Performance Standards non-price criterion.

- 1.2.20 Proposals for standalone contingency reserve energy storage and generation projects with Contingency Storage must specify a GCOD no later than December 31, 2022.
- 1.2.21 Proposals for generation only or generation paired with energy storage must specify a GCOD no later than December 31, 2025. However, Proposals with earlier GCODs will be given preference in scoring.

Project Technology	Generation Only	Generation Paired w/ Storage	Generation Paired w/ Contingency Storage	Standalone Contingency Reserve Storage
GCOD	December 31, 2025	December 31, 2025	December 31, 2022	December 31, 2022
Grid Charging	N/A	100% after ITC period	100% at GCOD for Contingency Storage 100% after ITC period for energy storage	100% at GCOD

- 1.2.22 A Proposer’s GCOD set forth in its Proposal will be the GCOD in any resulting PPA if such Proposal is selected to the Final Award Group. Proposers will not be able to request a change in the GCOD set forth in their Proposals.
- 1.2.23 If selected, Proposers will be responsible for all costs throughout the term of the PPA, including but not limited to Project development, completion of an Interconnection Requirements Study (“IRS”), the cost of conducting a greenhouse gas analysis, land acquisition, permitting, financing, construction of the Facility and all Interconnection Facilities, and operations and maintenance (“O&M”).
- 1.2.24 If selected, Proposers will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the PPA, as described in Attachment G, Section 7 of the RDG PPA or ESPPA.
- 1.2.25 If selected, Proposers shall pursue all available applicable federal and state tax credits. Proposal pricing must be set to incorporate the benefit of such available federal tax credits. However, to mitigate the risk on Proposers due solely to potential changes to the state’s tax credit law before a selected project reaches commercial operations, Proposal pricing shall be set without including any state tax credits. If a Proposal is selected, the PPA for the project will require the Proposer to pursue the maximum available state tax credit and remit tax credit proceeds to the Company for customers’ benefit as described in Attachment J of the RDG PPA or ESPPA. The PPA will also

provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue the state tax credit.

- 1.2.26 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.3 Competitive Bidding Framework

Consistent with the Framework, this RFP outlines the Company's requirements in relation to the resources being solicited and the procedures for conducting the RFP process. It also includes information and instructions to prospective Proposers participating in and responding to this RFP.

1.4 Role of the Independent Observer

- 1.4.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of the RFP process will be subject to the Independent Observer's oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that the RFP is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.
- 1.4.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:
- Monitor all steps in the competitive bidding process
 - Monitor communications (and communications protocols) with Proposers
 - Monitor adherence to the Company's Code of Conduct
 - Submit comments and recommendations, if any, to the PUC concerning the RFP
 - Review the Company's Proposal evaluation methodology, models, criteria, and assumptions
 - Review the Company's evaluation of Proposals
 - Advise the Company on its decision-making
 - Participate in dispute resolution as set forth in Section 1.10
 - Monitor contract negotiations with Proposers
 - Report to the PUC on monitoring results during each stage of the competitive bidding process
 - Provide an overall assessment of whether the goals of the RFP were achieved
- 1.4.3 The Independent Observer for this RFP is **Bates White, LLC**.

1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual

- 1.5.1 Communications and other procedures under this RFP are governed by the “Code of Conduct Procedures Manual,” (also referred to as the “Procedures Manual”) developed by the Company as required by the Framework, and attached as Appendix C.
- 1.5.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company’s RFP website, Electronic Procurement Platform and/or electronic mail (“Email”) through the address specified in Section 1.6 (the “RFP Email Address”). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company’s RFP website, or sent through either Email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen Days before the Proposal Due Date (RFP Schedule in Section 3.1, Items 7 and 8). The Company will endeavor to respond to all questions no later than five Days before the Proposal Due Date.
- 1.5.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).
- 1.5.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Stage 2 Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E.
- 1.5.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Reese Yorimoto
Energy Contract Manager
Hawaiian Electric Company, Inc.
Central Pacific Plaza Building, Suite 2100
220 South King Street
Honolulu, Hawai‘i 96813

RFP Email Address: hawaiivariablyrfp@hawaiianelectric.com

1.7 Proposal Submission Requirements

- 1.7.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and

provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.

- 1.7.2 Detailed requirements regarding the form, submission, organization and information for the Proposal are set forth in Chapter 3 and Appendix B.
- 1.7.3 In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other unaffiliated person or entity. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company's negotiating positions will not be shared with other Proposers or their respective Representatives.

~~Without limiting the foregoing, unaffiliated Proposers are prohibited from using shared legal counsel to prepare their Proposals or for contract negotiations with the Company where counsel is an individual person. If counsel is a law firm with multiple attorneys, unaffiliated Proposers may use the same firm only if (1) such firm assigns separate attorney(s) to each Proposer, (2) the attorney(s) are prohibited from (i) sharing a Proposer's confidential information or the Company's confidential information associated with such Proposer with others, or (ii) accessing another Proposer's confidential information or Company's confidential information associated with such Proposer from another attorney in the firm, (3) the law firm has appropriate procedures, safeguards and policies in place to ensure that separations exist so that the attorney(s) assigned to a Proposer do not share or have access to confidential information of another Proposer or of the Company which was obtained through another attorney's representation of a Proposer, and (4) an authorized signatory of the law firm shall provide Company with a written certification in the form attached as Appendix B Attachment 1. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company's negotiating positions will not be shared with other Proposers or their respective Representatives.~~

In addition, in submitting, a Proposal, a Proposer will be required to provide Company with its legal counsel's written certification in the form attached as Appendix B Attachment 1 certifying in relevant part that irrespective of any proposer's direction, waiver, or request to the contrary, that the attorney will not share a proposer's confidential information associated with such proposer with others, including, but not limited to, such information such as a proposer's or Company's negotiating positions. If legal counsel represents multiple unaffiliated proposers whose Proposals are selected for the Final Award Group, such counsel will also be required to submit a similar certification at the conclusion of power purchase agreement negotiations that he or she has not shared a proposer's confidential information or the Company's confidential information associated with such proposer with others, including but not limited to, such information as the a proposer's or Company's negotiating positions.

- 1.7.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai'i Standard Time (HST) on the Proposal Due Date shown in the RFP Schedule in

Section 3.1. No hard copies of the Proposals will be accepted.⁸ It is the Proposer's sole responsibility to ensure that complete and accurate information has been submitted on time and within the instructions of this RFP. With this assurance, Company shall be entitled to rely upon the completeness and accuracy of every Proposal. Any errors identified by the Proposer or Company after the Proposal Due Date has passed may jeopardize further consideration and success of the Proposal. If an error or errors are later identified, Company, in consultation with the Independent Observer, may permit the error(s) to be corrected without further revision to the Proposal, or may require Proposer to adhere to terms of the Proposal as submitted without correction. Additionally, and in Company's sole discretion, if such error(s) would materially affect the Priority List or Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by milestone (7) Self-Build and Affiliate Proposal Due Date in Section 3.1 Table 1. The PowerAdvocate Platform automatically closes further submissions after milestone (8) IPP Proposal Due Date in Table 1.

1.8 Proposal Fee

- 1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of \$10,000 for each Proposal submitted. IPP and Affiliate proposers who propose projects located at the Company-owned site identified in Section 3.11.2 will have their Proposal Fee waived.
- 1.8.2 Proposers may submit multiple Proposal variations for a Project for a single Proposal Fee. If such Proposals are on different Sites or for different generation technologies, a separate Proposal Fee must be paid for each Proposal. The method of submitting multiple Proposals within this RFP is described in Appendix B.
- 1.8.3 Proposers may also submit up to a total of four (4) variations of their Proposal, one variation of which is the ~~original~~base variation of the Proposal. In addition, for each of the 4 variations the Proposer may propose an additional variation with Contingency Storage, where the only change is the addition of a Contingency Storage component and any needed changes to account for the addition of the Contingency Storage.⁹ Variations of pricing terms, Facility size, or with/without storage can be offered. All variations within a Proposal must be proposed on the same Site and using the same generation technology to avoid paying a separate Proposal Fee. Whether or not a separate Proposal Fee is required, all unique information for each variation of a Proposal, no matter how

⁸ Proposals for the SBO(s) and Affiliate Proposals have additional submission requirements to the PUC specified in Section 1.9 below.

⁹ For each variation that includes Contingency Storage, it is to the Proposer's advantage to offer an identical variation without Contingency Storage as Proposals with Contingency Storage must be selected through both evaluation processes (energy and Contingency Storage) in order to advance to the Final Award Group.

minor such variation is, must be clearly identified and separated by following the instructions in Appendix B Section 3.

- 1.8.4 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Hawai'i Electric Light Company, Inc." and must be delivered and received by the Company by 2:00 pm (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. The check should include a reference to the Proposal(s) for which the Proposal Fee is being provided. Proposers are strongly encouraged to utilize a delivery service method that provides proof of delivery to validate delivery date and time.

If the Proposal Fee is delivered by U.S. Postal Service (with registered, certified, receipt verification), the Proposer shall address it to:

Reese Yorimoto
Energy Contract Manager
Hawaiian Electric Company, Inc.
Mail Code CP21-IU
PO Box 2750
Honolulu, Hawai'i 96840

If the Proposal Fee is delivered in person, or via an alternative registered, certified delivery service, the Proposer shall use the address specified in Section 1.6.

1.9 Procedures for the Self-Build or Affiliate Proposals

The Competitive Bidding Framework allows the Company the option to offer a Proposal(s) in response to this RFP ("Self-Build Option" or "SBO"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the SBO or members, agents or consultants of the Company formulating the SBO (the "Self-Build Team"); and (2) preferential access to proprietary information of the Self-Build Team. These requirements are specified in the Code of Conduct required under the Framework and implemented by certain rules and procedures found in the Procedures Manual submitted to the PUC in Docket No. 2017-0352 on April 1, 2019. A copy of the Procedures Manual is attached as Appendix C.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals to RFPs issued by the Company. All Self-Build and Affiliate Proposals are subject to the Company's Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP proposal, except that they are due at the same time as any Self-Build Proposal(s).

The Independent Observer will monitor adherence to the Company's Code of Conduct and the Procedures Manual. Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Proposal for the SBO(s) and Affiliate Proposals be submitted electronically through the Electronic Procurement Platform and filed with the PUC in hard copy a minimum of one (1) Day before other Proposals are due. (A Proposal for the SBO or Affiliate will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by Milestone (7) Self-Build and Affiliate Proposal Due Date in RFP Table 1.)

Detailed requirements for an SBO Proposal can be found in Appendix G. These requirements are intended to provide a level playing field between SBO Proposals and third-party Proposals. Except where specifically noted, ~~an~~ SBO Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers, as well as certain PPA requirements, such as milestones and liquidated damages, as described in Appendix G. The non-negotiability of the Performance Standards shall apply to any SBO to the same extent it would for any other Proposal. Notwithstanding the fact that it will not be required to enter into an RDG PPA or ESPPA with the Company, a Self-Build Proposer will be required to note its exceptions, if any, to the RDG PPA and/or ESPPA in the same manner required of other Proposers, and will be held to such modified parameters if selected. In addition to its Proposal, the Self-Build Team will be required to submit Appendix G Attachment 1, Self-Build Option Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Self-Build Team over other proposers responding to this RFP, as well as adherence to PPA terms and milestones required of all proposers and the SBO's proposed cost protection measures.

The cost recovery methods between a regulated utility SBO Proposal and IPP Proposals are fundamentally different due to the business environments they operate in. As a result, the Company has instituted a process to compare the two types of proposals for the initial evaluation of the price related criteria on a 'like' basis through comparative analysis.

At the core of an SBO Proposal are its total project capital cost and any associated annual operations and maintenance ("O&M") costs. During the RFP's initial pricing evaluation step, these capital costs¹⁰ and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the project. The SBO revenue requirements are then used in a levelized price calculation to determine a Levelized Energy Price ("LEP") (\$/MWh), if for energy needs, or to determine an Energy Storage

¹⁰ Self-Build Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction (~~("EPC")~~), interconnection, overhead, and Allowance for Funds Used During Construction (~~("AFUDC")~~).

Only ~~Levelized~~ Price ($\$/\text{MWhMW}$), if for Fast Frequency Response needs. These price calculations will then be used for comparison to IPP Proposals.

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the SBO Proposal to ensure an appropriate level of customer cost protection measures are included in such Proposal.

In response to the 18 MW Fast Frequency Response need, the Self-Build Team will only be permitted to submit a Proposal or group of Proposals (with up to a total of 4 ~~variations~~ variations for each Proposal) which collectively address this need, and no more. These Proposals are intended to serve as the Company's Parallel Plan, as described in the PUC's Framework for Competitive Bidding.¹¹ The Self-Build team will be allowed to submit one (1) additional Proposal (with up to a total of 4 variations) in response to the energy need.

The SBO will be permitted to submit a shared savings mechanism with its Proposal to share in any cost savings between the amount of cost bid in the SBO Proposal and the actual cost to construct the Project. If the SBO Proposal is selected to the Final Award Group, the proposed shared savings mechanism will need to be approved by the PUC. Submission of a shared savings mechanism is not required and will not be considered in the evaluation of the SBO Proposal.

1.10 Dispute Resolution Process

- 1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.
- 1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer ("Initial Meeting"). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.
- 1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential Mediation in Honolulu, Hawai'i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. ("DPR") (or its successor) or, in its absence, the American Arbitration Association then in effect ("Mediation"). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney's fees.

¹¹ See Decision and Order No. 23121, filed December 8, 2006, in Docket No. 03-0372.

- 1.10.4 If settlement of the dispute is not reached within sixty (60) Days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any unresolved disputes to Mediation, then as provided in the Framework, the Proposer may submit the dispute to the PUC in accordance with the Framework.
- 1.10.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the dispute within thirty (30) Days, as described in Parts III.B.8 and V of the Framework.¹² There will be no right to hearing or appeal from this informal expedited dispute resolution process.
- 1.10.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 (e.g., a court proceeding), then such Proposer shall be responsible for any and all attorneys' fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.11 No Protest or Appeal

Subject to Section 1.10, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

By submitting a Proposal in response to the RFP, the Proposer expressly agrees to the terms and conditions set forth in this RFP.

1.12 Modification or Cancellation of the Solicitation Process

- 1.12.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final execution of an RDG PPA or ESPPA, as may be applicable, in consultation with the Independent Observer, postpone, withdraw and/or cancel any requirement, term or condition of this RFP, including deferral of the award or negotiation of any contract, and/or cancellation of the award all together, all of which will be without any liability to the Company.
- 1.12.2 The Company may modify this RFP subject to requirements of the Framework, whereby the modified RFP will be reviewed by the Independent Observer and submitted to the PUC thirty (30) Days prior to its issuance, unless the PUC directs otherwise. See Framework Part IV.B.10. The Company will follow the same procedure with regard to any potential postponement, withdrawal or cancellation of the RFP or any portion thereof.

¹² The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework's process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework's dispute resolution process applies to "Bidders" and there are no "Bidders" at this stage in the RFP process.

Chapter 2: Resource Needs and Requirements

2.1 Performance Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the RDG PPA for proposals that include a generation component or the ESPPA for standalone energy storage proposals. This RFP and the RDG PPA or ESPPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP. Additional Performance Standards may be required based on the results of the IRS.

Facilities must be able to operate in grid-forming mode when directed by the Company as defined in the RDG PPA or ESPPA.

Black start capability is preferred for standalone energy contingency reserve storage or energy storage paired with generation facilities. Proposals will need to identify¹³ any incremental costs to enable their facility to be black start capable, if not already enabled.

For standalone energy storage or energy storage paired with generation facilities, the functionality and characteristics of the storage must be maintained throughout the term of the PPA. To be clear Proposers may not propose any degradation for either capacity or efficiency in their Proposals.

2.2 Transmission System Information

- 2.2.1 Company information regarding an initial assessment of potential MW capacity of 69 kV transmission-level circuits providing possible points of interconnection has been developed for Sites included in the Land Request for Information (“Land RFI”) as described in Section 3.11 and will be made available to Proposers only after execution of the Stage 2 NDA.¹⁴ This initial assessment was performed using the assumption that both the PGV and Hu Honua facilities would be placed into service and the potential capacity information indicated may be different in the case that either or both of the PGV and Hu Honua facilities are not placed into service. Proposers should perform their own evaluation of project locations, and the Company does not guarantee any project output or ability to connect based on such information. Prior to submitting a proposal, Proposers are encouraged to inquire about the viability of interconnecting a proposed Project at a specific location. For example, a Project must interconnect through a minimum of two transmission lines and no single point of failure resulting in a loss of more than 30 MW; however depending on but not limited to, factors such as location of the Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies, the Project may require more than two transmission line terminations. Please direct questions to the RFP Email Address in Section 1.6.

¹³ If black start is not already enabled for the Proposal, any additional costs necessary to enable black start will be identified in the submission instructions defined in Appendix B.

¹⁴ Appendix E contains the Mutual Confidentiality and Non-Disclosure Agreement for this RFP.

2.2.2 A detailed IRS, when performed, may reveal other adverse system impacts that may further limit a Project's ability to interconnect and/or further limit the net output of the Facility without upgrades.

2.3 Interconnection to the Company System

2.3.1 The Interconnection Facilities includes both: (1) Seller-Owned Interconnection Facilities; and (2) Company-Owned Interconnection Facilities.

2.3.2 All Proposals must include a description of the Proposer's plan to transmit power from the Facility to the Company System. The proposed Interconnection Facilities must be compatible with the Company System. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System.

2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point(s) of Interconnection with the Company System, and scheme of interconnection, must meet Company standards. The Company will provide its construction standards and procedures to the Proposer (Engineer, Procure, Construct Specifications for ~~Hawai'i~~Hawaiian Electric ~~Light~~ Power Lines and Substations) if requested via the RFP Email Address in Section 1.6 and upon the execution of a Stage 2 NDA as specified in Section 3.12.1. These specifications are intended to illustrate the scope of work typically required to administer and perform the design and construction of a ~~Hawaiian~~Hawai'i Electric Light substation and power line.

2.3.2.2 Interconnection Facilities must be designed such that, with the addition of the Facility, the Company System can meet all relevant Transmission Planning Criteria¹⁵ and any amendments thereto considering the Allowed Capacity and any Contingency Storage.

2.3.3 Tariff Rule No. 19, a copy of which is attached as Appendix I, establishes provisions for Interconnection and Transmission Upgrades. The tariff provisions are intended to simplify the rules regarding who pays for, installs, owns, and operates interconnection facilities in the context of competitive bidding. Proposers will be required to build the Company-Owned Interconnection Facilities, including the switching station and line work, except for any work in the Company's existing energized facilities and the final tap. Construction of Company-Owned Interconnection Facilities by the Proposer must comply with industry standards, laws, rules and licensing requirements, as well as the Company's specific construction standards and procedures that the Company will provide upon request. (See Section 2.3.1.) The Company uses the breaker-and-a-half scheme for its transmission switching station as shown in Attachment A of Appendix I – Rule 19 Tariff. Proposers should follow this scheme for purposes of their estimates.

2.3.4 The Proposer shall be responsible for all costs required to interconnect a Project to the Company System, including all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities.

¹⁵ Transmission Planning Criteria are further described in the PSIP beginning on page O-11 of Appendix O.

- 2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and transmission equipment expected to be required between their Facility and their proposed Point of Interconnection. Appendix H includes information related to Company-Owned Interconnection Facilities and costs that may be helpful to Proposers.

Selected Proposers shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities, whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.

- 2.3.6 Proposers are required to include in their pricing proposal all costs for distribution-level service interconnection for station power.
- 2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. Proposals selected to the Final Award Group will be subject to further study in the form of an IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed PPA.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the "RFP Schedule"). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via ~~email~~Email or via the Electronic Procurement Platform to the Proposers.

**Table 1
Proposed RFP Schedule**

Milestone	Schedule Dates
(1) Status Conference held	February 7, 2019
(2) Draft RFP filed	April 1, 2019
(3) Status Conferences held	April 18, 2019 May 2, 2019
(4) Commission solicited Stakeholder and Company Comments by	May 20, 2019
(5) Proposed Final RFP filed	July 10, 2019
(6) Final RFP is Issued	August 9 <u>22</u> , 2019 ¹⁶
(7) Self-Build or Affiliate Proposal Due Date	October 21 <u>November 4</u> , 2019 at 2:00 pm HST ¹⁷
(8) IPP Proposal Due Date	October 22 <u>November 5</u> , 2019 at 2:00 pm HST
(9) Selection of Priority List	January 3 <u>17</u> , 2020
(10) BAFOs Due	January 10 <u>24</u> , 2020
(11) Selection of Final Award Group	April 24 <u>May 8</u> , 2020
(12) Contract Negotiations Start	May 1 <u>15</u> , 2020

3.2 Company RFP Website/Electronic Procurement Platform

3.2.1 The Company has established a website for general information to share with potential Proposers. The RFP website is located at the following link:

www.hawaiielectriclight.com/competitivebidding

The Company will provide general notices, updates, schedules and other information on the RFP website throughout the process. Proposers should check the website frequently to stay abreast of any new developments. This website will also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

“Sourcing Intelligence” developed by Power Advocate is the Electronic Procurement Platform that the Company has licensed and will utilize for this RFP. Proposers who do not already have an existing account with PowerAdvocate and who intend to submit a Proposal for this RFP will need to register as a “Supplier” with PowerAdvocate.

¹⁶ ~~Per Section IV.B.6.e.ii of the Competitive Bidding Framework “[t]he utility shall have the right to issue the RFP if the Commission does not direct the utility to do otherwise within thirty (30) days after the Commission receives the proposed RFP and the Independent Observer's comments and recommendations.” August 9, 2019 is based on this thirty (30) day timelines. However, this date and all subsequent dates in the proposed schedule are dependent on any further guidance provided by the PUC.~~

¹⁷ An SBO or Affiliate Proposal must also be filed in hard copy form with the PUC a minimum of one (1) Day before other Proposals are due.

- 3.2.2 There are no license fees, costs, or usage fees to Proposers for the use of the Electronic Procurement Platform.

See [Appendix D](#) for user information on and screenshots of PowerAdvocate's Sourcing Intelligence procurement platform.

3.3 Information Conferences

The Commission held three status conferences on February 7, 2019, April 18, 2019, and May 2, 2019 to allow the Companies to propose plans for their Stage 2 RFPs and to respond to questions from the Commission, the Consumer Advocate and stakeholders. The Companies' presentations were made available on the Companies' RFP Website. The Commission also solicited comments from stakeholders on the Companies' Stage 2 Draft RFPs on May 6, 2019 before releasing its Order No. 36356 providing guidance on the draft RFPs for dispatchable and renewable generation on June 10, 2019. On July 5, 2019, the Commission issued Order No. 36406 providing further clarification of Order No. 36356.

Prospective Proposers may continue submitting written questions regarding the RFP to the RFP Email Address set forth in [Section 1.6](#). The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website's Q&A section prior to submission of their Proposal. Duplicate questions will not be answered.

3.4 Preparation of Proposals

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer's Proposal, and the Proposer's anticipated performance under the RDG PPA or ESPPA. It is the Proposer's responsibility to ensure it understands all requirements of the RFP, to seek clarification if the RFP's requirements or Company's request is not clear, and to ask for any confirmation of receipt of submission of information. Under Section 1.7.4, the Proposer is solely responsible for all errors in its Proposal(s). The Company will not accept any explanation by a Proposer that it was incumbent on the Company to catch any error.
- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on information submitted by Proposers in response to this RFP. Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP.

- 3.4.3 Each Proposer shall be solely responsible for, and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and (5) investigation and research relating to its Proposal and this RFP. The Company will not reimburse any Proposer for any such costs, including the selected Proposer(s).
- 3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent¹⁸ of the Proposer.

3.5 Organization of the Proposal

The Proposal must be organized as specified in Appendix B. It is the Proposer's responsibility to ensure the information requested in this RFP is submitted and contained within the defined Proposal sections as specified in Appendix B.

3.6 Proposal Limitations

Proposers expressly acknowledge that Proposals are submitted subject to the following limitations:

The RFP does not commit or require the Company to award a contract, pay any costs incurred by a Proposer in the preparation of a Proposal, or procure or contract for products or services of any kind whatsoever. The Company reserves the right, in consultation with the Independent Observer, to accept or reject, in whole or in part, any or all Proposals submitted in response to this RFP, to negotiate with any or all Proposers eligible to be selected for award, or to withdraw or modify this RFP in whole or in part at any time.

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.
- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the Stage 2 NDA.

¹⁸ Proposer's officer or agent must be authorized to sign the Proposal. Such authorization must be in writing and may be granted via Proposer's organizational documents (i.e., Articles of Incorporation, Articles of Organization, By-laws, etc.), resolution, or similar documentation.

3.7 Proposal Compliance and Bases for Disqualification

Proposers may be deemed non-responsive and/or Proposals may not be considered for reasons including, but not limited to, the following:

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.5.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to a Company request for additional information to clarify the contents of its Proposal within the timelines specified by the Company.
- The Proposal contains misrepresentations or errors.

3.8 Power Purchase Agreement

- 3.8.1 The Power Purchase Agreement for proposals selected under this RFP that include a generation component will be in the form of the RDG PPA, attached as Appendix J and Appendix L.
- 3.8.2 The Power Purchase Agreement for standalone energy storage proposals selected under this RFP will be in the form of the Company's ESPPA, attached as Appendix K.
- 3.8.3 If selected, any Affiliate Proposers will be required to enter into the RDG PPA or ESPPA with the Company.
- 3.8.4 If selected, a Self-Build Proposer will not be required to enter into a PPA ~~with the Company. However~~ or ESPPA with the Company. However, the Self-Build Proposer will be held to the proposed modifications to the RDG PPA and/or ESPPA, if any, it submits as part of the SBO in accordance with Section 3.8.7. Moreover, the SBO will be held to the same performance metrics and milestones set forth in the RDG PPA and/or ESPPA to the same extent as all Proposers, as attested to in the SBO's Appendix G, Attachment 1, Self Build Option Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility for a Company-owned facility, the SBO will be permitted to adjust operational requirements and performance metrics with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to a PPA with PUC approval.

- 3.8.5 In general, under the RDG PPA, payment to the Seller contains two parts: a Lump Sum Payment component to cover the fixed costs of the Project and a Price for Purchase of Electric Energy component (\$/MWh component) to cover variable operations and maintenance costs (if applicable, depending on the resource). In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage (if applicable) and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch. Company shall not be obligated to accept nor shall it be required to pay for test energy generated by the Facility during acceptance testing or other test conditions.
- 3.8.6 In general, under the ESPPA, payment to the Seller consists of a Lump Sum Payment to cover dispatchability and availability of the Facility. In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch.
- 3.8.7 As described in Section 2.1, the Performance Standards identified in the applicable RDG PPAs or the ESPPA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Facility's ability to meet these Performance Standards is both a Threshold Requirement and a Non-Price Related Criteria under Sections 4.3 and 4.4.2, respectively. As such, the Performance Standards included in the RDG PPAs or ESPPA are non-negotiable- by a Self-Build Proposer or any other Proposer. Proposers may propose modifications to other sections of the RDG PPA or ESPPA but are encouraged to accept such terms as written in order to expedite the overall RFP process and potential contract negotiations. As a component of their respective Proposals, a Self-Build Proposer or any other Proposers who elect to propose modifications shall provide a Microsoft Word red-line version of the relevant document identifying specific proposed modifications to the model language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification.
- 3.8.7.1 General comments, drafting notes and footnotes such as "parties to discuss" are unacceptable and will be considered non-responsive. Proposed modifications to the ~~Wind~~ RDG PPA and ESPPA will be evaluated as a non-price evaluation criterion as further described in Section 4.4.2. In order to facilitate this process, the Company will make available electronic versions of the model agreements on the RFP website and through the PowerAdvocate platform for the RFP. Any proposed modifications to the RDG PPA or ESPPA will be subject to negotiation between the Company and the Final Award Group. As stated above, since general comments, drafting notes, and footnotes without accompanying specific proposed language modifications are unacceptable and non-responsive, the Company will not negotiate provisions simply marked by such general comments, drafting notes and footnotes.

3.8.7.2 The Company has an interest in maintaining consistency for certain provisions of the RDG PPAs and ESPPA, such as the calculation of availability and payment terms. Therefore, for such provisions, the Company will endeavor to negotiate similar and consistent language across PPAs for the Final Award Group.

3.8.8 Proposals that do not include specific proposed modifications to the attached RDG PPAs or ESPPA will be deemed to have accepted the RDG PPA or ESPPA in its entirety.

3.9 Pricing Requirements

3.9.1 Proposers must submit pricing for each of their variations associated with each Proposal (if variations as described in Section 1.8.2 and 1.8.3 are submitted). Proposers are responsible for understanding the terms of the RDG PPA or ESPPA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy or receiving all Investment Tax Credits assumed).

3.9.2 Escalation in pricing over the term of the RDG PPA or the term of the ESPPA is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission). Pricing information contained anywhere else in a Proposal will not be considered during the evaluation process.

3.9.4 For projects that include a generation component, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount for full dispatchability of the Facility. Payment will be made in monthly increments.
- **Price for Purchase of Electric Energy (\$/MWh):** Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).
- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the portion of the Lump Sum Payment attributable to the Contingency Storage.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (~~ARR~~) (\$/year):** ~~Revenue~~Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the share of the Total Project Capital Costs, Annual O&M Costs, and Annual Revenue Requirement to provide Contingency Storage.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

3.9.5 For standalone energy storage projects, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount assuming full availability and dispatchability. Payment will be made in monthly increments.
- **Black Start (\$):** For energy storage coupled with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (~~ARR~~) (\$/year):** ~~Revenue~~Annual revenue requirements (ARR) calculated for each year.

- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

- 3.9.6 As identified in the Schedule of Defined Terms in the PPA under “BESS Allocated Portion of the Lump Sum Payment”, the allocated portion of the Lump Sum Payment specified for energy storage for the Facility is 50% and shall be a non-negotiable percentage in the PPA.

3.10 Project Description

- 3.10.1 Proposals that include a generation component are required to provide a **NEP RFP Projection** for the Project. The NEP RFP Projection associated with the proposed Project represents the estimated annual net energy (in MWh) that could be produced by the Facility and delivered to the Point of Interconnection over a ten-year period with a probability of exceedance of 95%. If the proposed Project includes an energy storage component, it should not be factored into the NEP RFP Projection. Any losses that may be incurred from energy being stored and then discharged from the energy storage component or any energy that may be diverted to the energy storage component due to generation in excess of the Facility’s Allowed Capacity should not be factored into the NEP RFP Projection. The NEP RFP Projection should assume that all energy is being directly exported to the Hawaii Electric Light System. The NEP RFP Projection will be used in the RFP evaluation process and therefore Proposers will be held to their provided value.¹⁹
- 3.10.2 Proposers must provide all information pertaining to the design, development, and construction of the Interconnection Facilities as specified in Appendix B.
- 3.10.3 Each Proposer must also agree to provide Project financial information, including proposed Project finance structure information specified in Appendix B. Such information will be used to evaluate Threshold Requirements and non-price criteria (e.g., Financial Viability of Proposer, Financial Strength and Financing Plan, State of Project Development and Schedule) set forth in Sections 4.3 and 4.4.2. Upon selection, the Final Award Group may be requested to provide further detailed cost information if requested by the PUC or the Consumer Advocate as part of the PPA approval process. If requested,

¹⁹ If a Proposal is selected to the Final Award Group and a PPA is executed between the Company and the Proposer, the NEP RFP Projection will be further evaluated at several steps throughout the process as set forth in the RDG PPA, and adjustments to the Lump Sum Payment will be made accordingly. Additionally, because the Company will rely on an accurate representation of the NEP RFP Projection in the RFP evaluation, a one-time liquidated damage as described in the RDG PPA will be assessed if the First NEP benchmark is less than the Proposer’s NEP RFP Projection. After the Facility has achieved commercial operations, the performance of the Facility will be assessed on a continuing basis against key metrics identified in the RDG PPA. See Article 2 and Attachment U of the RDG PPA.

such information would be provided to the PUC, Consumer Advocate and Company pursuant to a protective order in the docket.

- 3.10.4 The Proposer agrees that no material changes or additions to the Facility from what is submitted in its Proposal will be made without the Proposer first having obtained prior written consent from the Company. Evaluation of all Proposals in this RFP is based on the information submitted in each Proposal at the Proposal Due Date. If any Proposer requests any Proposal information to be changed after that date, the Company, in consultation with the Independent Observer, and in consideration of whether the evaluation is affected, will determine whether the change is permitted.

3.11 Sites Identified by the Company

- 3.11.1 As an alternative to a Site identified by the Proposer, the Company has identified potential Sites where landowners have expressed a willingness to negotiate a lease or purchase of the land to support a renewable energy project. These Sites were identified through a Land RFI. Proposers will be responsible for working directly with the land owner and must secure Site Control with such land owner prior to submitting a Proposal. Land RFI information is available to interested parties who sign the Stage 2 NDA. The Land RFI is further described in Appendix F.

Proposers are not required to select a Site identified in the Land RFI and as noted above may propose any Site for a Project. A Proposer may ask the Company questions as set forth in Section 2.2.1 if it would like to obtain similar information about the viability of interconnection at its proposed Site as identified for the Land RFI parcels.

- 3.11.2 Additionally, two Company-owned Sites are being offered to Proposers of standalone energy storage Projects for their consideration. An area within the Keahole Generating Station, referred to as the Keahole Site, and an area within the Puna Generating Station, referred to as the Puna Site, are further described in Appendix F.

Proposers proposing to use either the Keahole or Puna Sites shall be required to agree to conditions for such use as provided for in an attachment to the PPA. Provisions providing for access to the Sites during construction and thereafter, during commercial operations, will be subject to current Company security policies and procedures. Physical, communication and internet security will be required consistent with Company policy. Additional measures may be required to limit/eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures and requirements may change as necessary during the term of the ESPPA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules or regulations. A draft copy of the proposed form of the Terms and Conditions for Use (“TCU”) is included as Attachment X to the model ESPPA. Limited sections (Section 4 Seller’s Investigation of the Company-Owned Site, Section 5 Construction and Maintenance, Section 7 Hazardous Substances, and Section 8 Archeological and Historic Items) of the TCU shall be negotiable.

The Company ~~plans to offer site visits for~~ provided potential Proposers an opportunity to see visit both sites ~~and to ask questions about a potential project at either site. The dates, times, and requirements for these on August 7, 2019. Information from the~~ site visits will be posted ~~to~~ on the Company's RFP website.

3.12 Confidentiality

- 3.12.1 Each prospective Proposer must submit an executed Stage 2 NDA (specific to the Hawai'i Variable Renewable Dispatchable Generation and Energy Storage RFP) in the form attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1. The form of the Stage 2 NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed Stage 2 NDA will be considered. NDAs that were fully executed for Stage 1 will not be accepted for Stage 2. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking every page of a Proposal as confidential. The Company will make reasonable efforts to protect any such information that is clearly marked as confidential. Consistent with the terms of the Stage 2 NDA, the Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal and facilitating potential contract negotiations.
- 3.12.2 Proposers, in submitting any Proposal(s) to Company in response to this RFP, certify that such Proposer has not shared its Proposal(s), or any part thereof, with any other Proposer of a Proposal(s) responsive to this RFP.
- 3.12.3 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company and to be filed in a proceeding before the PUC. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the State of Hawai'i Department of Commerce and Consumer Affairs, Division of Consumer Advocacy, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.13 Credit Requirements Under the PPA

- 3.13.1 Proposers with whom the Company concludes PPA contract negotiations must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank chartered in the United States as required and set forth in Article 14 of the RDG PPA or the ESPPA.

- 3.13.2 The Development Period Security and Operating Period Security identified in the RDG PPAs or the ESPPA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the RDG PPAs or the ESPPA.
- 3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States to guarantee Proposer's payment of interconnection costs for all Company-Owned Interconnection Facilities in excess of the Total Estimated Interconnection Costs and/or all relocations costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the RDG PPAs or the ESPPA.
- 3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the RDG PPAs or ESPPA.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 and Figure 2 set forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company, in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements.²⁰ If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business Days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation resulting in the development of a Priority List, followed by the opportunity for Priority List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

²⁰ As a general rule, if a Proposer does not include a requested document, inadvertently excludes minor information or provides inconsistencies in its information, it may be given a chance to cure such deficiency. If a Proposer fails to provide material required information in its Proposal and providing the Proposer an opportunity to cure is deemed by the Company, in consultation with the Independent Observer, as an unfair advantage to such Proposer, the Proposal could be classified as non-conforming and eliminated for failure to meet the Eligibility Requirements.

Figure 1 – Evaluation Workflow

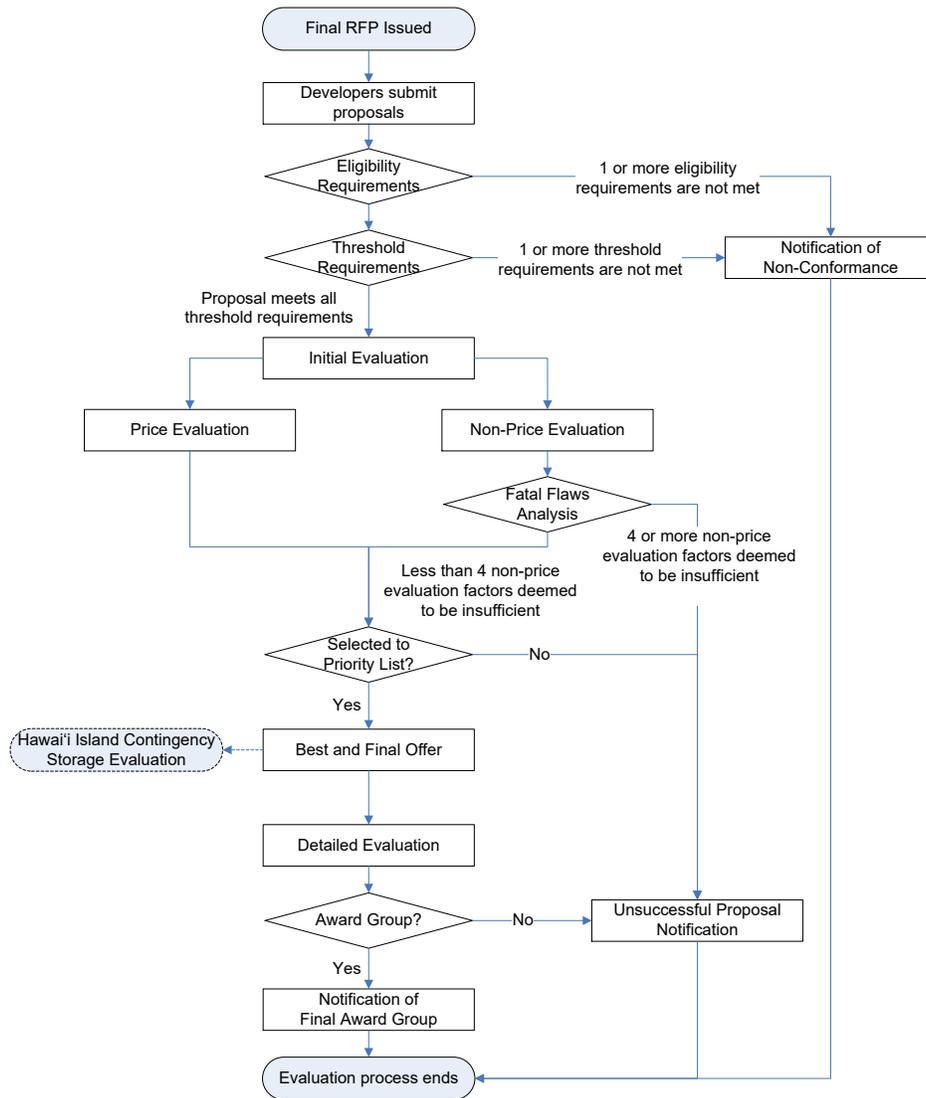
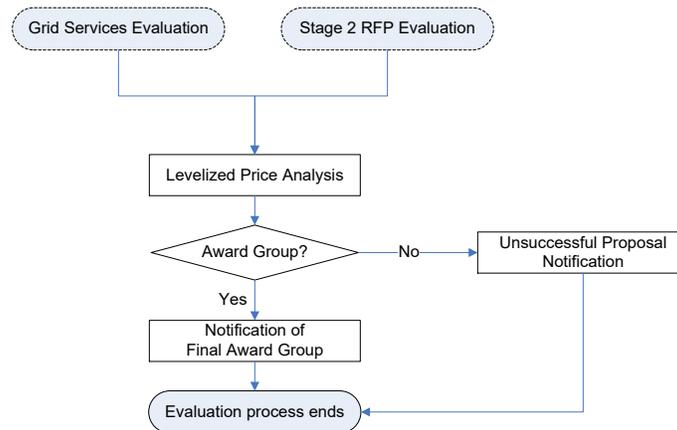


Figure 2 – Hawai‘i Island Contingency Storage Evaluation Workflow



4.2 Eligibility Requirements Assessment

Upon receipt of the Proposals, each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements.

- The Proposal including required uploaded files must be received on time via the PowerAdvocate Platform.
- The Proposal Fee must be received on or before the Proposal Due Date.²¹
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
- The Proposer must fully execute the agreements or other documents required pursuant to this RFP.
- The Proposer must provide a certificate of good standing from the State of Hawai‘i Department of Commerce and Consumer Affairs.
- The Proposer must provide federal and state tax clearance certificates for the Proposer.
- The Proposal must not be contingent upon changes to existing county, state, or federal laws or regulations.
- The proposed Project must be located on the island of Hawai‘i.
- Project must be greater than the threshold for a waiver from the Competitive Bidding Framework applicable to Hawai‘i island.
- No single point of failure from the Facility shall result in a decrease in net electrical output greater than 30 MW.
- Project infrastructure and point of interconnection must be located outside the 3.2 foot sea level rise exposure area (SLR-XA) as described in the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017), and not located within a Tsunami Evacuation Zone.
- Proposals must meet the grid-charging requirements of Section 1.2.16.

²¹ Proposal Fees will not be required for SBO Proposals or Proposals utilizing Company offered and owned sites.

- Standalone energy proposals must specify a GCOD no later than December 31, 2022.
- Generation only Proposals or generation paired with energy storage Proposals must specify a GCOD no later than December 31, 2025.

4.3 Threshold Requirement Assessment

Proposals that meet all the Eligibility Requirements will then be evaluated to determine compliance with the Threshold Requirements, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to provide this information or meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer. The Threshold Requirements for this RFP are the following:

- **Site Control:** The Proposal must demonstrate that the Proposer has Site Control for all real property required for the successful implementation of a specific Proposal at a Site not controlled by the Company, including any Interconnection Facilities for which the Proposer is responsible. The need for a firm commitment is necessary to ensure that Proposals are indeed realistic and can be relied upon as the Company moves through the remainder of the RFP process. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified and will be considered in determining whether the Proposal meets the Site Control threshold.

To meet this Site Control requirement, Proposers must do one of the following:

- Provide documentation confirming (1) that the Proposer has an existing legally enforceable right to use and control the Site, either in fee simple or under leasehold for a term at least equal to the term of the PPA or ESPPA (“Site Control”) as specified in the Proposer’s Proposal (taking into account the timelines set forth in this RFP for selection, negotiation, and execution of a PPA or ESPPA and PUC approval), and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal; or
- Provide documentation confirming, at a minimum, (1) that the Proposer has an executed binding letter of intent, memorandum of understanding, option agreement, or similar document, with the land owner (a “binding commitment”) which sets forth the general terms of a transaction that would grant the Proposer the required Site Control, and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal. The binding commitment does not need to be exclusive to the Proposer at the time the Proposal is submitted and may be contingent upon selection of the Proposal to the Final Award Group. If multiple Projects are provided a binding commitment for the same Site, the

documents granting the binding commitments must not prevent the Company from choosing the Proposal that otherwise would have been selected.

- **Government/Public Lands Only:** The above two bullet points may not be feasible where government or publicly-owned lands are part of the Site or are required for the successful implementation of the Proposal. In such a case, at a minimum the Proposer must provide a credible and viable plan, including evidence of any steps taken to date, to secure all necessary Site Control for the Proposal, including but not limited to evidence of sufficient progress toward approval by the government agency or other body vested with the authority to grant such approval (as demonstrated by records of the agency). The Proposer will be required, however, to demonstrate Site Control as required in the applicable RDG PPA or ESPPA should the Proposal be selected to the Final Award Group.
- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the applicable RDG PPAs or the ESPPA. Proposals should include sufficient documentation to support the stated claim that the Facility will be able to meet the Performance Standards (including the Project's ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component or is for standalone contingency reserve storage). The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.
- **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications (i.e., a PPA) at the scale being proposed. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.
- **Experience of the Proposer:** The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer's Project team must have experience in financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one (1) electricity generation project, including all components of the project (i.e., storage or other attributes), similar in size, scope, technology, and structure to the Project being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information in its Proposal's RFP Appendix B Section 2.13 tables demonstrating that at least one member of the Proposer's team (identified in the Proposal) has specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining projects similar to the Project being proposed.

- **Credit/Collateral Requirements:** Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- **Available Circuit Capacity:** The output capacity of the proposed Project (including Contingency Storage, as applicable) must not exceed the available capacity of the 69 kV circuit to which it will interconnect.
- **Viability of Proposer’s Financial Plan:** Proposers must provide a basic financial plan for the Project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for Project financing.
- **Financial Compliance:** The proposed Project must not cause the Company to be subject to consolidation as set forth, in Financial Accounting Standards Board (“FASB”) Accounting Standards Codification Topic 810, Consolidation (“ASC 810”) as issued and amended from time to time by FASB. Proposers are required to state to the best of their knowledge, with supporting information to allow the Company to verify such conclusion, that the Proposal will not result in the Seller under the PPA being a Variable Interest Entity (“VIE”) and result in the Company being the primary beneficiary of the Seller that would trigger consolidation of the Seller’s finances on to the Company’s financial statements under FASB ASC 810. The Company will perform a preliminary consolidation assessment based on the Proposals received. The Company reserves the right to allow a Proposal to proceed through the evaluation process through selection of the Priority List and work with the Proposer on this issue prior to or during PPA negotiations.
- **Community Outreach:** Gaining community support is an important part of a Project’s viability and success. A comprehensive community outreach and communications plan (“Community Outreach Plan”) is an essential roadmap that guides a developer as they work with various communities and stakeholders to gain their support for a Project. Proposers must include a Community Outreach Plan that describes the Proposer’s commitment to work with the neighboring community and stakeholders and to provide them timely Project information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, community scoping (including stakeholder and community concerns), Project benefits, government approvals, development process (including Project schedule), and a comprehensive communications plan.

Proposers need to also be mindful of the Projects’ potential impacts to historical and cultural resources. At a minimum, Proposers should identify: (1) any valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist. Also, at a minimum, Proposers should have already contracted with a consultant with expertise in this field to begin a cultural impact assessment for the Project.

4.4 Initial Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Price-related criteria will account for sixty percent (60%) of the total score and non-price-related criteria will account for forty percent (40%) of the total score. The non-price criteria and methodology for applying the criteria are explained in Section 4.4.2.

The Company will employ a closed-bidding process for this solicitation in accordance with Part IV.H.3 of the Framework where the price and non-price evaluation models to be used will not be provided to Proposers. However, the Company will provide the Independent Observer with all necessary information to allow the Independent Observer to understand the evaluation models and to enable the Independent Observer to observe the entire analysis to ensure a fair process. The evaluation models will be finalized prior to the receipt of Proposals.

4.4.1 Initial Evaluation of the Price Related Criteria

For the initial price analysis, an equivalent energy price (Levelized \$/MWh) will be calculated for each renewable generation and renewable generation with energy storage proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), Price for Purchase of Electric Energy (\$/MWh), and the Net Energy Potential (“NEP”) RFP Projection (MWh) information defined in RFP Sections 3.9 and 3.10.

For standalone contingency storage proposals, and for the Contingency Storage portion of a renewable energy project paired with storage, a ~~levelized~~ energy price (~~Levelized \$/MWh(\$/MW)~~) will be calculated for each Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the facility’s contingency storage energy capability.

In order to fairly evaluate Proposals with different technologies and characteristics while using an equivalent energy price in Levelized \$/MWh at this stage in the evaluation, or in the case of contingency storage an Energy Storage Only Price in \$/MW, the Company will group Proposals into technology-based evaluation categories, as applicable. For example²²: (1) Wind generation (MWh) only; (2) Wind generation (MWh) and Energy storage; (3) Solar generation (MWh) only; (4) Solar generation (MWh) and Energy storage; (5) Contingency storage only; (6) Wind generation (MWh), Energy Storage, and Contingency Storage; and (8) Solar generation (MWh), Energy Storage, and Contingency Storage.

²² There may be other technologies that are offered in this RFP. This list is illustrative of how technology-based evaluation categories will be established for the Initial Evaluation.

The Eligible Proposal with the lowest LEP in each evaluation category will receive 600 points. All other Eligible Proposals in that evaluation category will receive points based on a proportionate reduction using the percentage by which the Eligible Proposal's LEP exceeds the lowest LEP in that evaluation category. For example, if a Proposal's LEP is ten percent (10%) higher than the lowest LEP in that evaluation category, the Proposal will be awarded 540 points (that is, 600 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal within each evaluation category.

4.4.2 Initial Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated on each of the eight (8) non-price criteria categories set forth below:

- Community Outreach and Cultural Resource Impacts
- State of Project Development and Schedule
- Performance Standards
- Environmental Compliance and Permitting Plan
- Experience and Qualifications
- Financial Strength and Financing Plan
- RDG PPA or ESPPA Contract Exceptions
- Guaranteed Commercial Operations Date

Each of the first three criteria – Community Outreach and Cultural Resource Impacts, State of Project Development and Schedule, Performance Standards – will be weighted twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable).

The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each evaluation category with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level²³ for four (4) or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed Project.

The Companies' evaluation of the non-price criteria will be based on the materials provided by a Proposer in its Proposal. Acceptance of any Proposal into the Final Award Group shall not be assumed or construed to be an endorsement or approval that the materials provided by Proposer are complete, accurate or in compliance with applicable

²³ A score of 3 is the "meets minimum standards" level that a Proposal must achieve in at least five (5) criteria.

law. The Companies assume no obligation to correct, confirm or further research any of the materials submitted by Proposers. Proposers retain sole responsibility to ensure their Proposals are accurate and in compliance with all laws.

The non-price criteria are:

- **Community Outreach and Cultural Resource Impacts** – Gaining community support is an important part of a Project’s viability and success. An effective Community Outreach Plan will call for early meaningful communications with stakeholders and will reflect a deep understanding and respect for the community’s desire for information to enable them to make informed decisions about future projects in their communities. Therefore, Proposals will be evaluated on the quality of the Community Outreach Plan to inform the Project’s impacted communities. Proposers need to also be mindful of the Project’s potential impacts to historical and cultural resources. Proposers should at least identify (1) valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

At a minimum, Proposals should include a Community Outreach Plan that describes the Proposer’s commitment to work with the neighboring community and stakeholders and to provide timely Project information during project development, construction, and operation. The Community Outreach Plan shall include, but not be limited to the following:

- 1) **Project description.** A thorough description including a map of the location of the Project. This information will help the community understand the impact that the Project may have on the community.
- 2) **Community scoping.** Identify stakeholders (individuals, community leaders, organizations), community issues and concerns, and community sentiment.
- 3) **Project benefits.** An explanation of the need for the Project. This will help the community to understand how the Project might benefit their community.
- 4) **Government approvals.** Required government permits and approvals, public hearings and other opportunities for public comment. This information will help the community to understand the level of public scrutiny and participation that might occur for the Project and the opportunities to provide public comments.
- 5) **Development process.** A Project schedule that identifies key milestones will facilitate the community’s understanding of the development process.

- 6) Communications Plan.** A communications plan including a detailed community outreach schedule that will keep the affected communities and stakeholders informed about the Project's outreach efforts during early Project development period through construction and operations.

Preference will be given to Proposers who have already identified established contacts to work with the local community, have used community input to incorporate changes to the final design of the Project and mitigate community concerns, have proposed a community benefits package (including details of the community recipients and benefits package), or have community consultants as part of the Project team doing business in Hawai'i that have successfully worked with communities in Hawai'i on the development of two or more energy projects or projects with similar community issues. These criteria are aligned with the Companies' community engagement expectation whereby all developers will be required to engage in community outreach prior to signing a PPA with the Companies. This process is also outlined in RFP Section 5.3.

Also, at a minimum, Proposers should have already contracted with a consultant with expertise in such field to begin a cultural impact assessment for the Project. Preference will be given to Proposals that are further along in the assessment process and are able to provide a mitigation/action plan or are able to provide a date for when a mitigation/action plan will be available that addresses any identified cultural resource issues.

- **State of Project Development and Schedule** – Projects that are further along in development generally have lower project execution risk and a greater probability of being able to be successfully placed into service prior to the GCOD (specifically identified in each Proposal). At a minimum, Projects should demonstrate how they plan to capture any ITC safe harbor and reach their GCOD specified, including identification of risks and schedule assumptions. (Schedules must identify the IRS completion date and PUC approval dates assumed.) Proposals should also demonstrate, via a detailed critical path schedule, that there is a high likelihood that the Project will be able to reach commercial operations as specified. Proposals shall include a Gantt chart that clearly illustrates the overall schedule and demonstrates achievement of any ITC safe harbor, if applicable, and commercial operations by their specified GCOD. The Gantt chart shall include task durations and dependencies, identify tasks that will be fast tracked, and identifies slack time and contingencies. This criterion will also look at the high-level Project costs set forth in the Proposal including: costs for equipment, construction, engineering, Seller-Owned Interconnection Facilities, Company-Owned Interconnection Facilities, land, annual O&M, the reasonableness of such costs and the assumptions used for such costs. Project costs that do not appear reasonable for a project of the size proposed may result in a lower ranking for this criterion if the Company reasonably determines that the cost information is unrealistic based on prior experience in the market which may result in a risk that the Project can be built on time and for the price proposed by the Proposer. The Company reserves the right to discuss any cost and financial information with a Proposer to ensure the information provided is accurate and correct.

- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the RDG PPA or the ESPPA. The Company will review the Proposal information received, including design documents and operating procedures materials provided in the Proposal, and evaluate whether the Project as designed is able to meet the Performance Standards identified in the RDG PPA or ESPPA (including the Project’s ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component or is for standalone contingency reserve storage) and in this RFP. At a minimum, in addition to meeting the Performance Standards, the Proposals should include sufficient documentation, provided in an organized manner, to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed on a timely basis. Preference will be given to Proposals that provide detailed technical and design information showing how each standard can be met by the proposed Facility. Preference will also be provided to proposed Projects that offer additional capabilities (e.g., Black-Start, Grid-Forming).
- **Environmental Compliance and Permitting Plan** – This criterion relates to the potential (short- and long-term) environmental impacts associated with each project, the quality of the plan offered by the Proposer to mitigate and manage any environmental impacts (including any pre-existing environmental conditions), and the plan of Proposers to remain in environmental compliance over the term of the contract. These impacts are reflected on a technology-specific basis. Completing any necessary environmental review and obtaining the required permitting in a timely manner is also important and Proposals will be evaluated on their plan to identify, apply for, and secure the required permits for the Project, any permitting activity that has been completed to date, including having initial discussions with U.S. Fish and Wildlife and State of Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife, to the extent applicable, prior to submitting a Proposal, and the degree of certainty offered by the Proposer in securing the necessary permits.

At a minimum, proposed Projects should be expected to have minimal environmental impact for most areas and Proposals should provide a comprehensive plan to mitigate the identified potential or actual significant environmental impacts to remain in environmental compliance. The proposed mitigation plans should be included in the Project timeline. Preference will be given to Proposals that provide a more detailed plan as well as those that have proactively taken steps to mitigate potential environmental impacts.

Also, this criterion requires that, at a minimum, Proposers should have identified, and disclosed in their Proposal(s), all major permits, approvals, appurtenances and entitlements (including applicable access, rights of way and/or easements) (collectively, the “permits”) required and have a preliminary plan for securing such permits. Preference will be given to Proposals that are able to provide a greater degree of certainty that its plan to secure the required permits is realistic and achievable, or have already received all or a majority of the required

permits. ~~The Proposer must provide a credible and viable plan, including evidence of any steps taken to date. The Proposer should disclose all identified (a) discretionary permits required, i.e., those requiring public or contested case hearings and/or review and discretionary approval by an appropriate government agency and (b) ministerial conditions without discretionary approval conditions. In all cases, the Proposer must provide a credible and viable plan to secure all necessary and appropriate permits necessary for the project. For example, if the project is located within an agricultural district, the Proposer shall provide evidence of Proposer's verification with the appropriate government agency that the project complies with HRS Section 205-2 and Section 205-4.5, relating to solar energy facilities placed on agricultural land, provided, however that reliance upon an exemption to the requirements of HRS Section 205-2 and/or Section 205-4.5 available under HRS Section 205-6, shall not satisfy this requirement unless the exemption has already been granted for the desired use and Proposer is in possession of a valid, unexpired and nonappealable special use permit issued under such section at the time Proposer's Proposal(s) is/are submitted in response to this RFP, and provided further, that reliance upon an amendment to land use district boundary lines available under HRS Section 205-4 shall also not satisfy this requirement unless such amendment has already been granted for the desired use and Proposer is in possession of a valid, unexpired and nonappealable order amending such land use district boundary or boundaries to permit Proposer's desired use at the time Proposer's Proposal(s) is/are submitted in response to this RFP. where a special use permit (under Section 205-6), exemption (under Section 205-6), or amendment to land use district boundary lines (under Section 205-4) is required to secure such compliance, Proposer shall identify the need for such permit, exemption or amendment and provide a list of required prerequisites and/or conditions and a realistic timeline necessary to obtain such permit, exemption or amendment satisfactory for Proposer to still meet its designated GCOD.~~

- **Experience and Qualifications** – Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining projects (including all components of the project) of similar size, scope and technology. At a minimum, Proposals must show via the table format specified in RFP Appendix B Section 2.13 that at least one (1) member must have the specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one electricity generation project including all components of the project similar to the Project being proposed. Preference will be given to Proposers with experience in successfully developing multiple projects that are similar to the one being proposed and/or that have prior experience successfully developing and interconnecting a utility scale project to the Company's System.
- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the Project as well as assesses the financial strength and capability of the Proposer to develop

the Project. A complete financial plan addresses the following issues: Project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the Project. The financial strength of Proposers or their credit support providers will be considered, including their credit ratings. The financing participants are expected to be reasonably strong financially. Developers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody's, Fitch) will also be given preference, with those that have higher credit ratings ranked higher.

- **RDG PPA or ESPPA Contract Proposed Modifications** – Proposers are encouraged to accept the contract terms identified in the model agreements in their entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model agreements without edits will receive a higher score and will be the only proposals that can achieve the highest scoring for this non-price evaluation. Technology-specific or operating characteristic-required modifications, with adequate explanation as to the necessity of such modifications, will not jeopardize a project's ability to achieve the highest score. Proposers who elect to propose modifications to the model agreements shall provide a Microsoft Word red-line version of the applicable document identifying specific proposed modifications to the model agreement language as well as a detailed explanation and supporting rationale for each modification. General comments without proposed alternate language, drafting notes without explanation or alternate language, footnotes such as “parties to discuss,” or a reservation of rights to make additional modifications to the model agreements at a later time are unacceptable, will be considered unresponsive, and will result in a lower score. The Company and Independent Observer will evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal.
- **Guaranteed Commercial Operations Date:** The Company is procuring resources and incorporating projects onto its System in Stages as part of its long-term plan to meet RPS goals. Proposers will be held to the Guaranteed Commercial Operations Date identified in their Proposal. The GCOD will be a Guaranteed Milestone and will be inserted without amendment into the RDG PPAs or ESPPA, as applicable. Proposers that are able to design for and commit to an earlier GCOD will be given more favorable scoring. Proposers must have met the GCOD requirements of RFP Sections 1.2.18 and 1.2.19 prior to being evaluated in this non-price criterion.

4.5 Selection of a Priority List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 60% price-related criteria / 40% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both price and non-price scores described above, will result in a ranking of proposals within each technology-based evaluation category.

The Company will determine a Priority List from the highest scoring Proposals for each technology-based evaluation category. Each Priority List will include a sufficient number of projects, but not less than 2 Proposals per technology-based evaluation category, such that the Company can assemble portfolio combinations that meet or exceed the Renewable Energy MWh and Storage MW and MWh targets for comparison in the Detailed Evaluation. The Companies will develop the Priority Lists in consultation with the Independent Observer. The Companies reserve the right, in consultation with the Independent Observer, to limit the projects allowed for further consideration in the initial evaluation to projects that fall within 15% of the lowest price proposed per technology-based evaluation category. Selection to the Priority List does not assure an eligible Project's inclusion in the selection of the Final Award Group.

4.6 Best and Final Offer (BAFO)

4.6.1 The Company will solicit a Best and Final Offer from Proposers selected to a Priority List in a technology-based evaluation category. If the SBO is selected to a Priority List, the SBO will not be eligible to provide a Best and Final Offer and the original pricing submitted in its Self-Build Proposal will be used in the Detailed Evaluation. All other Proposers selected to a Priority List will have the opportunity to update (downward only)²⁴ the pricing elements in their Proposal to improve the competitiveness of their Proposal prior to being further assessed in the Detailed Evaluation phase. At this time, updates may only be made to the following pricing elements:

- Lump Sum Payment (\$/year) amount
- Price for Purchase of Electric Energy (\$/MWh) amount. Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).

Proposers will not be allowed to increase their price²⁵ but may elect to maintain the same pricing submitted in their original Proposal. Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

4.6.2 If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.²⁶

²⁴ Proposers will only be allowed to adjust pricing elements downward. No upward adjustment to the pricing elements will be permitted or considered. All other characteristics of the Proposal and Facility capabilities must remain valid and unchanged (e.g., NEP, GCOD, etc.)

²⁵ Proposers will not be allowed to increase the pricing in their Proposals to address interconnection and/or system upgrade costs or for any other reason.

²⁶ The Company reserves the right in consultation with the Independent Observer, to adjust the parameters of the BAFO, in the unlikely event that system needs have evolved in a way that the Proposals received do not fully address.

4.7 Detailed Evaluation

The Best and Final Offers of the Priority List Proposals from this RFP, the Best and Final Offers of the Short List Proposals for contingency storage from the Grid Services RFP, as well as original Self-Build Proposals if advanced to the Priority Listed Proposals, will be further assessed in the Detailed Evaluation to identify the Priority List Proposals that meet the variable renewable dispatchable generation MWh and contingency storage MW targets to determine the Proposals selected to the Final Award Group.

The Initial Evaluation for the Grid Services RFP and this RFP will occur in parallel. A combined evaluation for Grid Services FFR-1 and this RFP's contingency storage proposals will take place after the completion of the BAFO rounds for each RFP, which will ensure that the proposals being considered have met eligibility and threshold requirements, represent the highest overall ranked projects based on price and non-price criteria, and have incorporated Best and Final pricing. If possible based on the number and quality of Proposals received, the Company will attempt to include in the joint evaluation Projects totaling 18 MW of contingency storage on the Priority List for contingency storage for the Renewable RFP and 18 MW of FFR-1 on the Short List for the Grid Services RFP. An Energy Storage Only ~~Levelized~~ Price (\$ / ~~MWh~~MWh) will be calculated for each FFR-1 proposal and proposed contingency storage project, including both standalone storage projects as well as storage projects paired with renewable generation (the Company notes that the issues for calculating the NPV for determination of the levelized price for FFR proposals are further discussed in the Grid Services RFP evaluation document). The Company will evaluate all FFR-1 and contingency storage proposals and rank them by lowest Energy Storage Only ~~Levelized~~ Price. The top-rated proposals (lowest cost) summing to 18MW will be selected as contingency storage proposal awardees (NOTE: contingency storage selection will incorporate locational constraints not applicable to the Grid Services FFR selection). For renewable energy projects paired with storage which include a Contingency Storage option: a) if the project **is** selected as a contingency storage Proposal awardee, in order for the project to be confirmed to the Final Award Group (such confirmation is subject to the further considerations described below), it must also be included in the portfolio of projects selected to meet the energy requirements of this RFP; and b) if the project **is not** selected as a contingency storage Proposal awardee, a variation of the project without contingency storage may still continue to be considered in this RFP as a renewable energy project paired with storage that meets the energy requirements of this RFP.

The Company will build Portfolios for evaluation that meet both the energy MWh target and the contingency storage MW target.

The detailed evaluation process will consist of assessment of combinations of Proposals from the Priority Lists that meet the energy and contingency storage targets of this RFP ("Portfolios"). A production simulation iteration will be created for each Portfolio to evaluate the Total Net Cost (Cost and Benefits) of integrating the Portfolio onto the Company's System. Each Portfolio's Total Net Cost will be compared against the Base Case, described further below.

The Company intends to use a computer model for this analysis. The evaluation will be based on the Total Net Cost (Costs and Benefits) to the Company of integrating the combination of Priority List Proposals onto the Company's System which includes:

1. The cost to dispatch the combination of Projects and the energy and storage purchased;
2. The fuel cost savings (benefits) and any other direct savings (IPP savings from dispatchable fossil fuel savings) resulting from the displacement of generation by the Priority List Proposals, including consideration of round-trip efficiencies for facilities with storage;
3. The estimated increase (or decrease) in operating cost, if any, incurred by the Company to maintain system reliability; and
4. The cost of imputed debt, if applicable.

As noted, the Company will take into account the cost of rebalancing its capital structure resulting from any debt or imputed debt impacts associated with each Proposal (including any costs to be incurred by the Company, as described above, that are necessary in implementing the Proposal). The Company proposes to use the imputed debt methodology published by S&P that is applicable to the Proposal being evaluated. S&P views long-term PPAs as creating fixed, debt-like financial obligations that represent substitutes for debt-financed capital investments in generation capacity. By adjusting financial measures to incorporate PPA-fixed obligations, greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy new load are achieved.

During the Detailed Evaluation and before the Proposals advance to the Final Award Group, the Company will perform load flow analyses to determine if certain Project combinations introduce transmission circuit constraints that will factor into the selection process. This is to address the possibility that even though sufficient line capacity was identified for an individual Project, large Projects on separate transmission circuits that are in close proximity with each other could introduce additional transmission circuit constraints. The Projects selected must not have any additional constraints imposed based on the load flow analysis to advance to the Final Award Group. However, the Company reserves the right, in consultation with the Independent Observer, to allow minor modifications to a Proposal to avoid such additional constraints. If such modification resulted in a reduced size of the Facility, the pricing proposed would also need to be revised. Under no circumstances would a Proposer be allowed to increase their price as a result of such minor modification.

Also in the Detailed Evaluation, other factors will be validated to ensure that the final combination of Projects provides the contemplated benefits that the Company seeks. The Company will evaluate the collateral consequences of the implementation of a combination of Projects, including consideration of the geographic diversity, resource diversity, interconnection complexity, and flexibility and latitude of operation control of the Projects.

The Company may assess additional combinations of Projects if requested by the Independent Observer and if the time and capability exist to perform such analyses.

4.8 Selection of the Final Award Group

Based on the results of the Detailed Evaluation and review of the results with the Independent Observer, the Company will select a Final Award Group from which to begin contract negotiations. The Company intends to select projects that meet the targeted needs and provide customer benefits. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in the Final Award Group.

Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of a PPA.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Priority List or the Final Award Group, the Company reserves the right, at any time prior to submission of the PPA Application with the PUC application, in consultation with the Independent Observer, to disqualify the Proposer from the RFP. If discovery of the incorrect or misrepresented information is made after the Company has filed its PUC application for approval of the PPA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a proposal, including failure to reach agreement to the PPA, the Company, taking into consideration the timing of such removal and the current status of the Company's needs under the RFP, in consultation with and concurrence from the Independent Observer, will review the Priority List to determine (1) if another proposal should be added to the Final Award Group; (2) if either of the Contingency Plan or Parallel Plan should be pursued; or (3) if the remaining proposals in the Final Award Group should remain unchanged.

Order No. 36536 "directs the Companies to work with the [Independent Observers] to increase bid transparency within the RFP process, while maintaining an appropriate level of confidentiality regarding bids and bidders." The Companies agree that it is desirable for the RFP process to be as transparent as possible while maintaining the confidentiality of Proposer and Proposal information. The type and quantity of information that can be disclosed will not be known until the Companies and the Independent Observer have a better understanding of the number and types of proposals received and whether such information can be easily anonymized. The Companies will work with the Independent Observers to determine an appropriate level of disclosure after Proposals are received with a goal of disclosing more information than was disclosed in Stage 1.

Chapter 5: Post Evaluation Process

5.1 Interconnection Requirements Study Process

A complete package of IRS Data Request worksheets and project single line diagram(s) shall be submitted with each Proposal. For Projects with a proposed GCOD in 2022, the models for equipment and controls, list(s) to clearly identify the components and respective files (for inverters and power plant controller), and complete documentation with instructions, shall be submitted within 60 days thereafter. See Section 2.11.1 of Appendix B. For all other Projects, the same complete submittal shall be due within 60 days after selection to the Final Award Group. PSSE Generic models, PSSE User models, and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the Company's PPA performance requirements. These must be checked for functionality by the ~~bidder~~Proposer or its vendors and consultants prior to submission to the Company. Similar and fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company. PSSE generic models shall be provided promptly after the PSSE user models have been approved by the Company.

After proposals and models are submitted, the Company will inspect the data packages for general completeness. For any incomplete submissions, a list of missing or non-functional items will be provided. Proposers will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove Proposals from the Priority List or Final Award Group, or may terminate PPA negotiations or executed PPAs if their submission requirements are deemed incomplete for the lack of requested models. Proposals that are complete will be considered for further evaluation. A formal, technical model checkout will be deferred until a later date when IRS Agreements and deposits are in place, so that the expert subject matter work can be provided by the Company's IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for each selected project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for each project, (b) any considerations that are specific to a particular project and location, and (c) system impact analyses of the projects as a group. Interconnection cost and schedule, including cost of any required system upgrades, will be determined in a subsequent Facilities Study.

The technical model checkouts will be conducted first. Upon identification of any functional problems or deficiencies, corrective action shall be taken immediately and on an interactive basis so that the problems or deficiencies can be resolved within 15 Days, including re-submission of data and updated models, or the project shall be deemed withdrawn. At the discretion of the Company and provided that there is a demonstration of good faith action to minimize delay that would affect the schedule for IRS analyses, a second round of model checkout and problem solving may proceed. Thereafter any notice that a Project is deemed withdrawn for lack of completeness shall be final. Subject to consultation with the Independent Observer, failure to provide all requested material

within the time(s) specified, or changes to the data provided after the due date(s), shall result in elimination from the Final Award Group.

Proposers shall be responsible for the cost of the IRS, under separate agreements for the System Impact Study and the Facilities Study. The overall IRS will provide information including, but not limited to, an estimated cost and schedule for the required Interconnection Facilities for a particular Project and any required mitigation measures. Proposers will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. Upon reviewing the results of the IRS, Proposers will have the opportunity to declare the PPA null and void in the event that the estimated interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal. See Section 12.4 of the RDG PPA or Section 2.3(b) of the ESPPA.

5.2 Contract Negotiation Process

Within five (5) business Days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. Given the significant scope of the RFP, and depending on the number of Projects selected to the Final Award Group, the Company will prioritize which Projects to negotiate with first. The Company will first prioritize Projects that meet the identified 18 MW Fast Frequency Response need. Prioritization will take into consideration the GCOD of the Project, the benefits to and the needs of the Company's System, and extensiveness of the exceptions to the model PPA. While PPA negotiations and submission of executed PPAs for approval will take place on a rolling basis, the Company's goal is to begin to complete this process for the first projects within six (6) months of notification of intent to enter contract negotiations. The IRS may not be completed at such time. The Company intends to execute and file the PPA with the PUC for approval and later amend the PPA to include the results of the IRS.

5.3 Community Outreach and Engagement

The public meeting and comment solicitation process described in this Section and Section 29.21 of the PPA model RDG PPA or Section 27.17 of the model ESPPA (Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by Proposer. Within 30 Days of the start of PPA negotiations, Proposers shall have provided the Company with an updated comprehensive Community Outreach Plan to work with and inform neighboring communities and stakeholders and to provide them timely information during all phases of the Project. The Community Outreach Plan shall include, but not limited to the following information: Project description, Project stakeholders, community concerns and Proposer's efforts to address such concerns, Project benefits, government approvals, Project schedule, and a comprehensive communications plan. Upon selection to the Final

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Award Group, a Proposer's Community Outreach Plan shall be a public document available to the public on the Proposer's website and upon request. The Proposer shall also provide the Company with links to their Project website and Community Outreach Plan, which the Company will post on the Company's website. Prior to the execution date of the PPA Proposers shall also host a public meeting in the community where the proposed Project is to be located for community and neighborhood groups in and around the vicinity of the Project Site that provided the neighboring community, stakeholders and the general public with: (i) a reasonable opportunity to learn about the proposed Project; (ii) an opportunity to engage in a dialogue about concerns, mitigation measures, and potential community benefits of the proposed Project; and (iii) information concerning the process and/or intent for the public's input and engagement, including advising attendees that they will have thirty (30) calendar days from the date of said public meeting to submit written comments to Company and/or Proposer for inclusion in the Company's submission to the PUC of its application for a satisfactory PUC Approval Order. The Proposer shall collect all public comments, and then provide the Company copies of all comments received in their original, unedited form, along with copies of all comments with personal information redacted and ready for filing. If a PPA is executed by the Proposer and the Company, the Company may submit any and all public comments (presented in its original, unedited form) as part of its PUC application for this Project. Proposers shall notify the public at least three weeks in advance of the meeting. The Company shall be informed of the meeting. The Company will provide Proposers with detailed instructions regarding the community meeting requirement after the selection of the Final Award Group. (For example, notice will be published in county or regional newspapers/media, as well as media with statewide distribution. The Proposer will be directed to notify certain individuals and organizations. The Proposer will be provided templates to use for the public meeting notices, agenda, and presentation.) Proposers must also comply with any other requirement set forth in the PPA relating to Community Outreach.

Following the submission of the PUC application for the Project, and prior to the date when the Parties' statements of position are to be filed in the docketed PUC proceeding for the Project, the Proposer shall provide another opportunity for the public to comment on the proposed Project. The Proposer's statement of position filed in the docket associated with the Project will contain an attachment including those comments.

The Proposer shall be responsible for community outreach and engagement for the Project, and that the public meeting and comment solicitation process described in this section do not represent the only community outreach and engagement activities that can or should be performed.

5.4 Greenhouse Gas Emissions Analysis

Proposers whose Proposal(s) are selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or the Company's consultant(s) upon request all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support

of a PUC application for approval of the PPA for the project (the “GHG Review”). Proposers shall be responsible for the full cost of the GHG Review associated with their project under a separate agreement between the Proposer and the Company. The GHG Review is anticipated to address whether the GHG emissions that would result from approval of the PPA and subsequent to addition of the Project to the Company’s System are greater than the GHG emissions that would result from the operations of the Company’s System without the addition of the Project, whether the cost for renewable, dispatchable generation, and/or energy storage services as applicable under the PPA is reasonable in light of the potential for GHG emissions, and whether the terms of the PPA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval of PPA

Any signed PPA resulting from this RFP is subject to PUC approval as described in the RDG PPA, including Article 12 and Section 29.20 thereof, or Article 24 of the ESPPA.

5.6 Facility In-Service

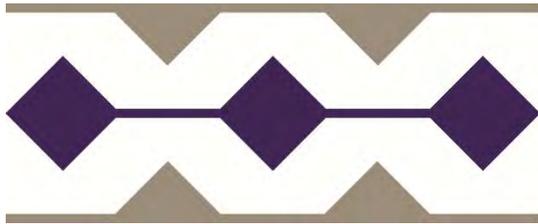
In order to facilitate the timely commissioning of the numerous projects required to meet the MW and MWh targets of this RFP, the Company requires the following be included with the 60% design drawings: relay settings and protection coordination study, including fuse selection and ac/dc schematic trip scheme.

For the Company to test the facility, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire facility must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the IPP and ready for operation prior to Company testing.

If approved drawings are not available, or if the facility is otherwise not test ready as scheduled, the Project will be moved to the end of the Company’s testing queue. If tests are not completed within the allotted scheduled testing time, the Project will be moved to the end of the Company’s testing queue. The IPP will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to PPA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the PPA.

EXHIBIT 8

Redline of Final Grid Services RFP
against July 26, 2019 Proposed Final Draft RFP



Hawaiian Electric

~~FINAL DRAFT~~ REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

~~JULY 10~~AUGUST 22, 2019

Docket No. 2017-0352

This Request for Proposals (“RFP”) is a DRAFT only. Hawaiian Electric Company, Inc. (“Hawaiian Electric” or “Company”) will employ a competitive bidding process to select variable renewable dispatchable generation and energy storage projects consistent with the State of Hawai‘i Public Utilities Commission’s (“PUC”) Competitive Bidding Framework. Under the Competitive Bidding Framework, Hawaiian Electric will file the initial draft RFP with the (PUC). Then, Hawaiian Electric will seek input from prospective Proposers and other stakeholders through a Technical Conference as described in the draft RFP and will modify the draft RFP to the extent feasible to address input received in order to foster a robust competitive process. The proposed final RFP will be submitted to the PUC for approval and is subject to further revision based upon direction received from the PUC. After approval by the PUC, Hawaiian Electric will issue the final RFP.

Contents

CHAPTER 1: INTRODUCTION AND GENERAL INFORMATION	1
1.1 Authority and Purpose of the Request for Proposals	2
1.2 Background: Grid Services	3
1.3 Aggregator Model	3
1.4 Scope of the RFP	4
1.5 Competitive Bidding Framework	6
1.6 Role of the Independent Observer	6
1.7 Communications Between the Company and Proposers – Procedures Manual	7
1.8 Company Contact for Proposals	8
1.9 Proposal Submission Requirements	8
1.10 Procedures for Affiliate Proposals	9
1.11 Dispute Resolution Process	9
1.12 No Protest or Appeal	10
1.13 Modification or Cancellation of the Solicitation Process	10
CHAPTER 2: RESOURCE NEEDS AND REQUIREMENTS	10
2.1 Performance Standards	10
2.2 Interconnection to the Company System	11
CHAPTER 3: INSTRUCTIONS TO PROPOSERS	11
3.1 Schedule for the Proposal Process	11
3.2 Company RFP Website/Electronic Procurement Platform	11
3.3 Proposers Conference	12
3.4 Preparation of Proposals	12
3.5 Organization of the Proposal	13
3.6 Proposal Limitations	13

3.7	Proposal Compliance and Bases for Disqualification	14
3.8	Grid Service Purchase Agreement	14
3.9	Pricing Requirements	15
3.10	Plan Description	16
CHAPTER 4: EVALUATION PROCESS AND EVALUATION CRITERIA		17
4.1	Proposal Evaluation and Selection Process	17
4.2	Eligibility Requirements Assessment	20
4.3	Threshold Requirement Assessment	20
4.4	Detailed Evaluation – Process Overview	21
4.5	Specifics of the Detailed Evaluation Resulting in Selection of the Priority List	22
4.6	Selection of the Short List	25
4.7	Best and Final Offer (BAFO)	25
4.8	Final Evaluation for Grid Services Capacity	26
4.9	Final Evaluation for Grid Services FFR-2 (Oahu) and FFR-1 (Maui)	26
4.10	Final Evaluation for Grid Services FFR-1 for Oahu and Hawai'i Island	26
CHAPTER 5: POST EVALUATION PROCESS		28
5.1	Contract Negotiation Process	28
5.2	PUC Approval of GSPA	28

List of Appendices

Appendix A	Definitions
Appendix B	Proposer's Response Package
Appendix C	Code of Conduct Procedures Manual
Appendix D	PowerAdvocate User Information
Appendix E	MNDA
Appendix F	Code of Conduct
Appendix G	Contract Capability Bid Form
Appendix H	Pricing Worksheet
Appendix I	Requirements Summary Worksheet
Appendix J	Questionnaire Summary Worksheet
Appendix K	Information Assurance Worksheet
Appendix L	Model GSPA
Appendix M	Levelized Grid Service Price Worksheet
Appendix N	Supplemental Review Process
Appendix O	Aggregator Handbook

Chapter 1: Introduction and General Information

Hawaiian Electric Company, Inc. (“Hawaiian Electric” or the “Company”) seeks proposals for the delivery of qualified grid services from customer-sited distributed energy resources for the Hawaiian Electric, Maui Electric and Hawaii electric Light systems in accordance with this Request for Proposals (“RFP”). The total amount of grid services being solicited in this RFP is presented in the form of cumulative annual targets in the table below:

Table 1-1 Hawaiian Electric Company’s Grid Services Needs by System (MW)¹

Year	Oahu FFR-1	Oahu FFR-2	Oahu Capacity	Maui FFR-1	Maui Capacity	Hawai’i Island FFR-1	Hawai’i Island Capacity
2020							4.0MW
2021	50.0MW	29.0MW	103.0MW	8.0MW	16.0MW	18.0MW	4.0MW
2022	50.0MW	39.0MW	119.0MW	8.0MW	21.0MW	18.0MW	4.0MW
2023	50.0MW	39.0MW	119.0MW	8.0MW	21.0 MW	18.0MW	4.0MW
2024	50.0MW	39.0MW	119.0MW	8.0MW	21.0 MW	18.0MW	4.0MW

The Company seeks aggregated grid services from customer-sited distributed energy resources in this RFP. The Company intends to contract for grid services through this RFP using its Grid Services Purchase Agreement (“GSPA”). The GSPA is attached as Appendix L to this RFP.

Each successful Proposer will provide the specified, aggregated grid services from customer-sited assets to the Company pursuant to the terms of GSPA to be negotiated between the Company and Proposer, which will also be subject to PUC review and approval. The Company or its affiliate may submit a Proposal in response to this RFP.

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4 of this RFP. The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Projects. The amount of grid services that the Company may acquire from this RFP depends on, among other things, the quality of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company’s forecasts; and changes to regulatory or legal requirements.

All requirements necessary to submit a Proposal or Proposals are provided in this RFP. A description of the technical requirements for Proposers is included in Chapter 2 of this RFP, in the Proposer’s Response Package attached as Appendix B to this RFP, in the GSPA attached as Appendix L to this RFP, and in the Electronic Procurement Platform described in Section 3.2 of this RFP.

¹ These totals are cumulative; Proposers are permitted to propose enablement of incremental services through the end of ~~year 3-December 31, 2022~~ of the contract period. The contract term will be a 5-year term including the ramping enablement years.

All capitalized terms used in this RFP shall have the meaning set forth in the Glossary of defined terms attached as Appendix A to this RFP. Capitalized terms that are not included in Appendix A shall have the meaning ascribed in this RFP.

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. 36187 issued on February 27, 2019 in Docket No. 2017-0352 as part of a procurement process established by the State of Hawai'i Public Utility Commission ("PUC").
- 1.1.2 This RFP is subject to Decision and Order ("D&O") No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai'i), which sets forth the PUC's Framework for Competitive Bidding ("Framework" or "Competitive Bidding Framework").
- 1.1.3 This RFP also follows the guidance from the Public Utilities Commission of the State of Hawaii ("Commission") in Decision and Order No. 35238 in Docket No. 2015-0412 which approved the Companies Revised Integrated Demand Response Program Portfolio submitted to the commission in the same docket.
- 1.1.4 The Company hereby invite qualified vendors (referred to herein as "Proposers") to provide proposals to deliver grid services (as defined herein) utilizing customer-sited resources. It is acceptable for a Proposer to provide a proposal to a single operating system.
- 1.1.5 ***The purpose of this RFP is to procure grid services provided from customer-sited resources.*** The Company considers grid services to include capacity and ancillary services, specifically, fast frequency response. This RFP represents an opportunity for both the Proposer and the Company to continue to develop an innovative portfolio of customer-sited resources that meet a variety of grid requirements, while providing additional choices and benefits for the Company's customers. This RFP is soliciting innovative proposals for the provision of fully functional resources to deliver grid services. Delivery of a fully-functional grid service includes the implementation and ongoing maintenance of resources to provide the complete set of services specified in section 1.4.1 of this RFP.
- 1.1.6 ***The resources that provide the grid services requested in this RFP must be electrically interconnected on the customer side of the revenue meter.*** Proposers may submit proposals that employ controllable customer loads, energy storage devices, and/or non-fossil generation amongst other technologies. Proposed resources must also meet the other technical and business requirements set forth in this RFP and the Company's Grid Service Tariffs. Resources proposed in response to this RFP that are interconnected on the customer's side of the meter and that are intended to be operated in parallel with the Company's system (e.g. generation and energy storage systems) at any time, must meet the interconnection requirements included in the Company's Rule 14 Section H, in this

document, or otherwise appropriate interconnection tariff applicable to such resources.² Any proposals that rely on resources that are not able to meet the forgoing requirements in this paragraph will not be considered at this time.

1.2 Background: Grid Services

On July 28, 2014 the Hawaiian Electric Companies submitted their Integrated Demand Response Portfolio Plan (IDRPP) in compliance with the Decision and Order issued by the Hawai'i Public Utilities Commission (Commission). Subsequent to filing the IDRPP, the Commission indicated that the system needs as defined in the IDRPP should provide more substantive support, and clearly align with other planning activities, operations, and filings within the Companies.

Much of the Companies' work undertaken since the initial IDRPP has aimed to establish the value of system needs, which in turn will help to inform the design of a new demand response (DR) portfolio. In 2015, the Companies defined and quantified the system needs as Grid Service Requirements. This refinement has resulted in consistent definitions of system needs and enabled the Companies to develop a methodology for quantifying the requirements to a greater degree of satisfaction from the perspective of the Commission.

The Grid Service Requirements serve as the foundational need for services that could be provided by DR programs, and other resources. The Grid Service Requirements defined are an essential input into the avoided cost modeling effort to value grid resources, and are crucial in the development of future DR portfolio offerings. The Companies recognize that system needs evolve over time due to a multitude of factors that are all intricately interrelated, thus making the process to define, quantify and support such needs an iterative one.

The requirements for grid services to be supplied by Aggregators for each of the systems were vetted and discussed with Generation Planning, Transmission & Distribution Planning as well as System Operators across all islands. The requirements include, as appropriate, quantity, delivery and response requirements, and duration, as well as the rationale for each requirement.

The Companies are undertaking the next phase of increased renewable portfolio with the Integrated Grid Planning (IGP), wherein the Companies will re-assess the grid service and its value going forward. In the future, Grid Service solicited and procured from customer-sited assets will become part of an anticipated All-resources RFP process as an outcome of the Companies' Integrated Grid Planning (IGP) effort. The initial procurement is scheduled for 2020.

1.3 Aggregator Model

1.3.1 This RFP seeks proposals based on the following Proposer, or aggregator, business model:

- a. The Proposer is required to guarantee (with appropriate financial backing) the delivery of specified quantities of grid services obtained from demand-side resources. The Proposer shall have a direct contractual relationship with customers to engage the customer for the use of customer-sited resources. The Proposer will be responsible for

² See Hawaiian Electric Rule 14H:
<http://www.hawaiianelectric.com/vcmcontent/FileScan/PDF/EnergyServices/Tarrifs/HECO/HECORules14.pdf>

ensuring the contract with the customer is valid under Hawaii and U.S. laws and meets any applicable consumer protection regulations. In turn, the Proposer will have a direct contractual relationship with the Company to deliver the grid services in the quantities and requirements specified in this chapter of the RFP. The Company will directly deliver incentives to participants on their utility bills. Accordingly, the Proposer's marketing to customers will refer to the Proposer as "a Hawaiian Electric Company authorized aggregator, or demand-side provider."

b. The Company will accept bids from consortiums or multiple parties in partnership. Proposals from consortiums or multiple parties must clearly identify the relationship (actual or proposed) among the parties for the purposes of a transaction with the Company, including, the party (or parties) with whom the Company will have the legally binding contractual relationship.

c. The Company requires that responsive proposals be submitted consistent with the requirements set forth herein.

1.4 Scope of the RFP

The Company's system sizes are small, relative to many U.S. mainland systems and further, the different systems are not interconnected with each other, or any other third party electric system. As in any system, capacity and ancillary services are required to ensure an adequacy of supply and acceptable reliability of the power system. Due to the unique considerations of small island systems, the ancillary service requirements differ from larger interconnections.

The small size of the Company's systems results in a greater sensitivity to imbalance between power supply and demand. Any generation and demand imbalances within the systems will result in significant frequency deviations that cannot be supported by neighboring interconnections. The sensitivity to imbalance is described by the frequency bias (MW/0.1 Hz). The frequency biases of the Hawaiian Islands are much smaller than on mainland systems with significantly higher rates of change of frequency. For example, in the Hawaii Electric Light system with a typical daytime load of 150 MW, the loss of the largest generating station (60 MW) represents the loss of generation equivalent to 40% of the load. In addition to the small system size increasing amounts of variable generation from wind and distributed solar have reduced online responsive generation and increasing the need for frequency response and regulation. The variability resulting from solar and wind resources requires an increase in the available contingency reserve, responsive in the milliseconds time frame, and also requires a large amount of supplemental frequency control from regulating reserves. Wind and solar ramp events also lead to a depletion of reserves and require replacement reserves to restore load following faults and contingencies. Therefore, the technical requirements for Proposer proposals to provide grid services must meet technical and operational specifications that are dictated by the unique operational requirements of the Company's systems.

Over time, the needs of the Company's systems will change, particularly as greater penetrations of variable renewable resources are reached in the systems. This means that the incremental need for specific grid services may change over time or that different response rates or requirements may be required. The company reserves the right to alter requirements as

necessary to provide the grid services required for acceptable system reliability for future system configurations.

1.4.1 Grid Service Requirements

The Company has identified specific grid services requirements by system. The table below summarizes the grid services. Detailed specifications and requirements are identified in Exhibit A of the GSPA, which can be found in Appendix L. The quantity, or Capability, of each grid service required for this RFP is provided in Table 1-1 previously in this chapter. This should be used as a guide for Proposers in making proposals to deliver specific grid services.

Table 1-2 Company’s Grid Services Needs from Customer-sited Resources

Grid Service(s) Requested in this RFP	System Need
Capacity	Capacity to meet system peak, including load shift from high demand peak periods to low demand periods.
Fast Frequency Response (FFR)	Maintain system security during contingency events (Two different types FFR-1 and FFR-2 defined in Exhibit A.)

1.4.2 System & Data Integration

The Company specifies system integration data exchange requirements in both Exhibit G of the GSPA as well as the *Aggregator Handbook*, which can be found in Appendix O of this RFP.

1.4.3 Forecasting & Availability Delivery Requirements

Proposer obligations with respect to the type and frequency of service availability forecasting are presented in Exhibit F of the GSPA.

1.4.4 The Company does not have a predetermined preference for a particular technology for the delivery of grid services.

1.4.5 Proposers may offer to deliver any of the grid services on any of the islands where a need is depicted.

1.4.6 Each Proposal submitted in response to this RFP must represent a Plan that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Plan or Project submitted in response to this RFP or any other RFP.

1.4.7 Proposals submitted in response to this RFP must be located on the Islands of O‘ahu, Maui and/or Hawai‘i island and must propose an enablement schedule that shows the completion of enablement by Commercial Operations Date (“GCOD”) before December 31, 2022.

- 1.4.8 While this RFP procures the management of grid services for up to 5 years, and the enablement of incremental Contract Capability through the first 3 years of the contract period, Proposers are not obligated to commit to enablement for the full three year incremental enablement period.
- 1.4.9 Plans must offer at least 500kW of capability for each service bid.
- 1.4.9.1 For FFR on Hawai'i Island, Proposers must bid a minimum of 3MW of FFR.
- 1.4.10 If selected, Proposers will be responsible for all costs throughout the term of the GSPA, including but not limited to Plan execution, system integration testing, completion of an Interconnection Requirements Study ("IRS"), permitting, financing, and operations and maintenance.
- 1.4.11 Proposers shall pursue all available applicable federal and state tax credits, and Proposal pricing must be set to incorporate the benefit of such tax credits or to pass the benefit of the tax credits to the Company's customers.

1.5 Competitive Bidding Framework

Consistent with the Framework, this RFP outlines the Company's requirements in relation to the resources being solicited and the procedures for conducting the RFP process. It also includes information and instructions to prospective Proposers participating in and responding to this RFP.

1.6 Role of the Independent Observer

- 1.6.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of the RFP process will be subject to the Independent Observer's oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that it is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer all decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.
- 1.6.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:
- Monitor all steps in the competitive bidding process
 - Monitor communications (and communications protocols) with Proposers
 - Monitor adherence to the Company's Code of Conduct
 - Submit comments and recommendations, if any, to the PUC concerning the RFP
 - Review the utility's Proposal evaluation methodology, models, criteria, and assumptions
 - Review the utility's evaluation of Proposals
 - Advise the utility on its decision-making
 - Participate in dispute resolution as set forth in Section 1.10 of this RFP

- Monitor contract negotiations with Proposers
- Report to the PUC on monitoring results during each stage of the competitive bidding process
- Provide an overall assessment of whether the goals of the RFP were achieved

1.6.3 The Independent Observer for this RFP is **Bates White, LLC**.

1.7 Communications Between the Company and Proposers – Procedures Manual

1.7.1 Communications and other procedures under this RFP are governed by the “Procedures Manual,” developed by the Company as required by the Framework, and attached as Appendix C to this RFP.

1.7.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company’s website, Electronic Procurement Platform and/or electronic mail (“Email”) through the address specified in Section 1.7 of this RFP (the “RFP Email Address”). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company website, or sent through either email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen days before the Proposals Due date (RFP Schedule in Section 3.1 of this RFP). The Company will endeavor to respond to all questions no later than five days before the Proposals Due date.

1.7.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).

1.7.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E of this RFP.

1.7.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.8 Company Contact for Proposals

The primary contact for this RFP is:

Yoh Kawanami
Grid Services Contract Manager
Hawaiian Electric Company, Inc.
American Savings Bank Building, Suite 1050
1001 Bishop Street
Honolulu, Hawai'i 96813

RFP Email Address: response@hawaiianelectric.com

1.9 Proposal Submission Requirements

- 1.9.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.
- 1.9.2 Detailed requirements regarding the form, submission, organization and information for the Proposal are set forth in Chapter 3 of this RFP and Appendix B to this RFP.
- 1.9.3 In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other person or entity. The Proposer shall agree to a Certificate of Non-Collusion acknowledgement provided on the Electronic Procurement Platform for each Proposal.

In participating in this RFP, Proposer further agrees that to mitigate the potential appearance of impropriety, and with the intent of maximizing benefits to the Company's customers through this RFP, unaffiliated Proposers will not be permitted to use the same counsel or other representative(s) in negotiations with the Company either during or after the RFP evaluation and selection process. Furthermore, in executing the NDA provided as Appendix E to this RFP, the Proposer agrees on behalf of its Representatives that Company's confidential negotiating positions will not be shared with other Proposers.

- 1.9.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai'i Standard Time (HST) on the Proposals Due date shown in the RFP Schedule in Section 3.1 of this RFP. No hard copies of the Proposals will be accepted. It is the Proposer's responsibility to ensure that its complete and accurate information has been submitted on time and within the instructions of this RFP. Any errors or typos identified by the Proposer after the Proposals Due date has passed may jeopardize further consideration and success of the Proposal. The Electronic Procurement Platform will cease accepting any submission of late information for this RFP after the Proposals Due date.

1.10 Procedures for Affiliate Proposals

The Competitive Bidding Framework allows affiliates of the Company to submit Proposals to RFPs issued by the Company. All Affiliate Proposals are subject to Appendix C Code of Conduct Procedures Manual.

The Independent Observer will assist the PUC in helping to ensure that the established procedures of the Code of Conduct Procedures Manual and the terms of the Code of Conduct are followed and administered fairly such that no preferential treatment or preferential access to information will be provided to an affiliate by the Evaluation Team.

1.11 Dispute Resolution Process

- 1.11.1 If disputes arise under the RFP, the provisions of Section 1.10 of this RFP and the dispute resolution process established in the Framework will control. See Part V of the Framework.
- 1.11.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer (“Initial Meeting”). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues coming before the PUC.
- 1.11.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential mediation in Honolulu, Hawai‘i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. (“DPR”) (or its successor) or, in its absence, the American Arbitration Association then in effect (“Mediation”). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney’s fees.
- 1.11.4 If settlement of the dispute is not reached within sixty (60) days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any unresolved disputes to Mediation, then as provided in the Framework, the Proposer may seek a determination of the issue by the PUC.
- 1.11.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the issue within thirty (30) days, as

described in Parts III.B.8 and V of the Framework.³ There will be no right to hearing or appeal from this informal expedited dispute resolution process.

- 1.11.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 of this RFP (e.g. arbitration or court proceeding), then such Proposer shall be responsible for any and all attorney's fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.12 No Protest or Appeal

Subject to Section 1.11 of this RFP, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

By submitting a Proposal in response to the RFP, the Proposer expressly agrees to the terms and conditions set forth therein.

1.13 Modification or Cancellation of the Solicitation Process

- 1.13.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final award, in consultation with the Independent Observer, postpone, withdraw and/or cancel any requirement, term or condition of this RFP, including deferral of the award of any contract, and/or cancellation of the award all together, all of which will be without any liability to the Company.
- 1.13.2 The Company may modify this RFP subject to requirements of the Framework, whereby the modified RFP will be reviewed by the Independent Observer and submitted to the PUC thirty (30) Days prior to its issuance, unless the PUC directs otherwise. See Framework Part IV.B.10. The Company will follow the same procedure with regard to any potential postponement, withdrawal or cancellation of the RFP or any portion thereof.

Chapter 2: Resource Needs and Requirements

2.1 Performance Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the GSPA. This RFP and the GSPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP.

³ The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework's process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework's dispute resolution process applies to "Bidders" and there are no "Bidders" at this stage in the RFP process.

2.2 Interconnection to the Company System

- 2.2.1 All customer assets that are otherwise subject to interconnection standards as articulated in Rule 14H remain subject to those standards as a precondition for inclusion in a grid services offering.
- 2.2.2 If an interconnected system, in order to achieve anticipated and committed grid services, would be expected to export power in excess of pre-approved export limits, the resource would be subject to a Supplemental Review as described in Appendix N.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 3-1 sets forth the schedule for the proposal process (the “RFP Schedule”). The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposals Due date will be posted to the RFP website. Changes to the RFP Schedule after the Proposals Due date will be communicated via email or via the Electronic Procurement Platform to the Proposers.

Table 3-1 RFP Schedule

(1) RFP is Issued	<u>August 22, 2019</u>	
(2) Proposers Conference Webinar	<u>September 5, 2019</u>	2 weeks after RFP
(3) Proposals Due	<u>October 31, 2019</u>	2 months after RFP
(4) Selection of Short List	<u>December 12, 2019</u>	6 weeks after subm
(5) BAFOs Due	<u>December 19, 2019</u>	1 week after selecti
(6) Selection of Final Award Group	<u>January 9, 2020</u>	2 weeks after BAF
(7) Pass Award Information to Planning	<u>January 9, 2020</u>	Simultaneous with
(8) Contract Negotiations Start	<u>January 9, 2020</u>	Simultaneous with
(9) Contract Negotiations Concluded	<u>July 9, 2020</u>	7 months following

3.2 Company RFP Website/Electronic Procurement Platform

- 3.2.1 The Company has established a website for general information to share with potential Proposers. The website is located at the following link:

<https://www.hawaiianelectric.com/products-and-services/demand-response/rfp-for-grid-services-from-customer-sited-distributed-energy-resourceswww.hawaiianelectric.com/demandresponse>

The Company will provide general notices, updates, schedules and other information on the RFP website throughout the process. Proposers should check the website frequently to stay abreast of any new developments throughout the RFP process. This website will

also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

“Sourcing Intelligence” developed by Power Advocate is the Electronic Procurement Platform that the Company has licensed and will utilize for this RFP. Proposers who do not already have an existing account with PowerAdvocate and who intend to submit a Proposal for this RFP will need to register as a “Supplier” with PowerAdvocate.

- 3.2.2 There are no license fees, costs, or usage fees to Proposers for the use of the Electronic Procurement Platform.

See [Appendix D](#) to this RFP for user information and screenshots on PowerAdvocate’s Sourcing Intelligence procurement platform.

3.3 Proposers Conference

The Company will hold a webinar (“Proposers Conference Webinar”) in accordance with the Competitive Bidding Framework for prospective Proposers and other stakeholders to discuss the provisions and requirements of this RFP. Following webinar, stakeholders may submit questions to help them better understand the Companies’ proposed competitive bidding process and draft documents. General responses will be posted to the RFP website.

Prospective Proposers may submit written questions regarding the RFP to the RFP Email Address set forth in [Section 1.7](#). The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website’s Q&A section prior to submission of your Proposal to ensure all guidance provided by the Company is read.

3.4 Preparation of Proposals

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer’s Proposal, and Proposer’s anticipated performance under the GSPA. It is the Proposer’s responsibility to ensure they understand all requirements of the RFP, to seek clarification if the RFP’s requirement or Company’s request is not clear, and to ask for any confirmation of receipt of submission of information.

- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on submitted information (e.g., Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP).

- 3.4.3 Each Proposer shall be solely responsible for and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and (5) investigation and research relating to its Proposal and this RFP. Any such costs associated with the same will not be reimbursed by the Company to any Proposer, including the selected Proposer(s).
- 3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent⁴ of the Proposer.

3.5 Organization of the Proposal

The Proposal must be organized as specified in Appendix B to this RFP.

3.6 Proposal Limitations

Proposers expressly acknowledge that Proposals are submitted subject to the following limitations:

The RFP does not commit or require the Company to award a contract, pay any costs incurred by a Proposer in the preparation of a Proposal, or procure or contract for products or services of any kind whatsoever. The Company reserves the right, in consultation with the Independent Observer, to accept or reject, in whole or in part, any or all Proposals submitted in response to this RFP, to negotiate with any or all Proposers eligible to be selected for award, or to withdraw or modify this RFP in whole or in part at any time.

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.
- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposals Due date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the NDA.

⁴ Proposer's officer or agent must be authorized to sign the Proposal. Such authorization must be in writing and may be granted via Proposer's organizational documents (i.e., Articles of Incorporation, Articles of Organization, By-laws, etc.), resolution, or similar documentation.

3.7 Proposal Compliance and Bases for Disqualification

Proposers may be deemed non-responsive and/or Proposals may not be considered for reasons including, but not limited to, the following:

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.6.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to the Company's request for additional information to clarify the contents of its Proposal.
- The Proposal contains misrepresentations.

3.8 Grid Service Purchase Agreement

3.8.1 The Grid Services Purchase Agreement for proposals selected under this RFP will be in the form of the Company's GSPA, attached as Appendix L to this RFP.

3.8.2 If selected, any affiliate Proposers will be required to enter into the GSPA with the Company.

3.8.3 In general, under the GSPA, payment to the Supplier contains two parts: Enablement Fees to apply towards fixed costs associated with hardware and installation and Management Fees (\$/MW component) to cover operations and maintenance costs. In return, the Supplier shall guarantee minimum performance and availability metrics to ensure that the Services are available for the Company's dispatch.

3.8.4 Proposers may propose modifications to the GSPA but are encouraged to accept the GSPA in order to expedite the overall RFP process and potential GSPA negotiations. As a component of their Proposals, Proposers who elect to propose modifications shall provide a MS Word red-line version of the GSPA identifying specific modifications to the GSPA language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification. General comments such as "parties to discuss" are unacceptable and will not be considered a proposed revision. Modifications will be evaluated as a non-price evaluation criteria as further described in Section 4.4.2 of

this RFP. In order to facilitate this process, the Company will make available electronic versions of the GSPA. Any proposed modifications to the GSPA will be subject to negotiation between the Company and the Final Award Group. Certain provisions of the GSPA, such as the calculation of availability and payment terms, may be administratively burdensome to endeavor if they differ between selected Projects. Therefore, the Company will endeavor to negotiate similar provisions across the Final Award Group for such provisions.

- 3.8.5 Proposals that do not include specific proposed revisions to the attached GSPA will be deemed to have accepted its terms and these provisions cannot be opened up during the contract finalization stage. In other words, only provisions and terms redlined as part of the submitted proposals will be considered eligible for negotiations.

3.9 Pricing Requirements

- 3.9.1 Proposers must submit pricing for the proposed delivery of grid services.
- 3.9.2 Pricing cannot be specified as contingent upon other factors (e.g., changes to State or federal tax policy or receiving all investment tax credits assumed).
- 3.9.3 Escalations in pricing over the term of the GSPA may not be proposed.
- 3.9.4 If bidding to FFR-1 grid service as part of a bundled grid services proposal, Proposer's must provide both the bundled grid service pricing as well as discrete unbundled grid service pricing for FFR-1 only.
- 3.9.5 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission).
- 3.9.6 Proposers may specify the desire to rely on the Company to provide marketing/recruitment support; however, it is anticipated that in doing so, the Supplier would then seek a lower assignment of Enablement and/or Management Fees to off-set the request for direct Company marketing support.
- 3.9.7 The Proposer's Response Package must include the following pricing components for each Proposal:

For Aggregator or affiliate proposals:

- **Management Fee:** Represented as a \$/kW/service/month amount, this fee reflects the Proposer's effective bid for managing each kW of the services being offered. This fee should ramp as the collective enablement ramps and the Proposer is managing more kW per service.
- **Enablement Fee:** The Enablement Fee represents a \$/capability (kW) to accommodate – all or in part - the enablement of customer assets for delivering grid

services. This fee allocation is set at a maximum of ten (10) times the monthly Management fee on a \$ per kW, per services basis. Bids containing a price for enablement that exceed the specified limit will be disqualified.

- **Incentive Adder:** As set forth on Exhibit K of the GSPA, the Companies have published minimum incentives on a \$ per kW, per service, per island basis for each of the services to be procured. The Proposer may opt to offer additional incentives to participating customers, which will in turn be paid by the Company via the customer bill. The Incentive Adder will be added to the Proposer's total contract costs in the determination cost effective bids.
- **Levelized Grid Service Price:** As part of the pricing exercise, Proposers must present in average annual \$/kW for each service per each island per bid. The calculation for this dollar amount is presented in Appendix M.

3.10 Plan Description

3.10.1 Proposers must provide sufficient information on the scope and description of the proposed grid services delivery commitment. To this end, Proposer must furnish the following as described and/or provided as part of Attachment B:

- **Cover Letter** signed by a representative for the Proposer **authorizing the submission** of the Proposal
- **Proposal** document as per Appendix B Section 2.0
- Fully executed **Mutual Confidentiality and Non-Disclosure Agreement** (Appendix E to the RFP, may be downloaded from the "1. Download Documents" tab in the Electronic Procurement Platform)
- **Federal and State tax clearance certificates** for the Proposer (a Certificate of Vendor Compliance for the Proposer may be provided in lieu of **Federal and State tax clearance** certificates)
- **Contract Capability Bid** Form (Appendix G)
- **Pricing Sheet** (Appendix H)
- **Requirements Summary** Worksheet (Appendix I)
- **Questionnaire Summary** Worksheet (Appendix J)
- **Information Assurance** Worksheet (Appendix K)
- **Levelized Grid Service Price** Worksheet (Appendix M)
- **Supplier Code of Conduct** (if not conforming to Company's Code of Conduct)
- **Sample Participant Services Agreement**

3.10.2 Proposers must comply with the Standards of Conduct as depicted in Attachment C.

3.10.3 The Proposer agrees that no material changes or additions to the proposed grid services delivery plan from what is submitted with this Proposal will be made without the Proposer first having obtained prior written consent from the Company

3.11 Confidentiality

- 3.11.1 Each prospective Proposer must submit an executed NDA in the form attached as Appendix E to this RFP by the Proposals Due date specified in the RFP Schedule in Section 3.1. The form of the NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed NDA will be considered. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should take care to designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking each and every page of a Proposal as confidential. The Company will make reasonable efforts to protect any such information that is clearly marked as confidential. The Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal, as set forth in the NDA.
- 3.11.2 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the Division of Consumer Advocacy, State of Hawai‘i Department of Commerce and Consumer Affairs, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.12 Credit Requirements Under the GSPA

- 3.12.1 Proposers with whom the Company concludes GSPA contract negotiations must post an irrevocable Standby Letter of Credit as set forth in Article 21 of the GSPA.
- 3.12.2 The letter of credit amount described in the GSPA is a minimum requirement. Proposers shall not propose an amount lower than that set forth in the GSPA.
- 3.12.3 Proposers may be required to fund a monetary escrow account in lieu of the required Source Code Escrow required under Article 5 of the GSPA.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

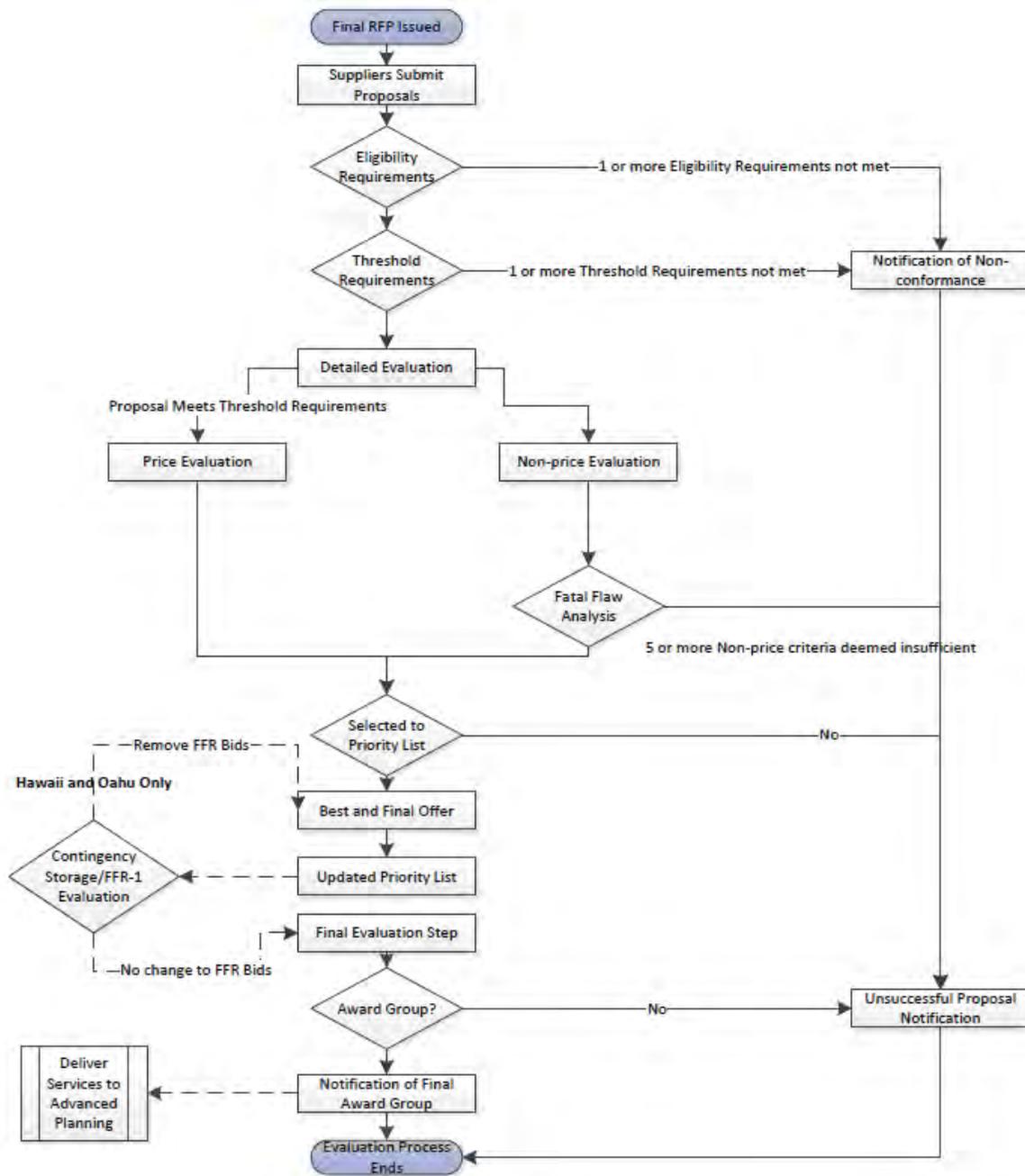
All Proposals will be subject to a consistent and defined review, evaluation and selection process. Once proposals are received, the Companies' will employ a multi-step evaluation process including an initial Eligibility and Threshold assessment, a Detailed Evaluation process and selection of a Priority List, a Best and Final Offer opportunity, an evaluation step specific to

the FFR-1 and Contingency Storage opportunity and a Final Awards Group selection process. Affiliate Proposals are treated identically to and held to the same requirements as all other Proposals. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements⁵. If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation development of a Short List, followed by the opportunity for Short List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

⁵ As a general rule, if a Proposer does not include a requested document or may inadvertently exclude minor information or provides inconsistencies in its information, it may be given a chance to cure the inadequacies. If a Proposer does not include significant sections of its Proposal and providing the Proposer with the opportunity to cure is deemed a benefit to that Proposer at the expense of the competitors it could be classified as non-conforming and eliminated for failure to meet the eligibility requirements.

Figure 1 – Evaluation Workflow



After the Proposals are submitted, a Proposal Summary table will be created by the ECM of the RFP.

The Proposal summary will be shared with RFP Team members responsible for the evaluation of proposals (including the oversight team, Price Evaluation Team and Non-Price Evaluation Team), the IO, and Company’s Management. Non-Price Evaluation Team members will not receive the pricing information from proposals.

4.2 Eligibility Requirements Assessment

Once the Proposals are summarized, the Lead ECM will make the Proposal information available to the RFP team and the IO to begin the review of the proposals. The Lead ECM (with the assistance of select RFP team members) will review each Proposal and determine if the Proposal meets each of the Eligibility Requirements set forth in Table 1 below. If a Proposal is deemed not to meet the Eligibility Requirements, the reasons for such failure will be clearly identified and documented.

Table 1 – Eligibility Requirements

1. The Proposal must be received on time via the PowerAdvocate Platform.
2. The Proposal must not contain material omissions.
3. The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
4. The Proposers must fully execute the agreements or other documents required pursuant to this RFP.
5. The Proposer must provide Federal and State tax clearance certificates for the Proposer.
6. The Proposal must not be contingent upon changes to existing county, state or federal laws or regulations.
7. The proposed grid services delivery must be provided by customer assets located on the Islands of O‘ahu, Maui and Hawai‘i.
8. All committed enablement must be scheduled to be completed no later than December 31, 2025.

The Company, in coordination with the IO, will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet Eligibility Requirements.⁶ If it is deemed that a Proposer will have the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification of such failure.

4.3 Threshold Requirement Assessment

Proposals that meet the Eligibility Requirements will be reviewed against the Threshold Requirements. The Non-Price Evaluation Team, which includes subject matter experts in the various practice areas associated with the Threshold subject area, will review each proposal against the Threshold Requirements and determine if it passes or fails, and if it fails, document why it fails.

Any proposals that meet these eligibility requirements will then be reviewed to ensure that the Threshold Requirements have been met, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer.

The Threshold Requirements are presented in Table 2 below:

Table 2 - Threshold Requirements

<p>Performance Standards: The proposed Plan must be able to meet the performance attributes identified in the GSPA. Proposals should include sufficient documentation to support the stated claim that the grid service offering will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.</p>
<p>Proven Technology: This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.</p>
<p>Experience of the Proposer: The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer’s team must have experience in deliver of similar services in at least (1) project, including similar in size, scope, technology, and structure to the services being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information to demonstrate that the member of the project team whose experience is being identified to meet this threshold criterion has a firm commitment to provide services to the Proposer. The Proposer should articulate if and how entities with local ties will be supporting to deliver the proposed grid service.</p>
<p>Credit/Collateral Requirements: Proposers shall agree to post a Letter of Credit as described in <u>Section 3.12</u> of this RFP.</p>
<p>Financial Viability of Proposer: Proposers must provide a basic financial plan for the project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for the project financing (i.e. credit-worthy entities are interested in financing the project).</p>

The Company in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Threshold Requirements⁷.

If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business days to cure from the date of notification to cure. Proposals that have successfully met the Threshold Requirements will then enter a Detailed Evaluation process for Proposal evaluation.

4.4 Detailed Evaluation – Process Overview

Proposals that meet both the Eligibility and Threshold requirements will then be subject to a price and non-price assessment. Two teams have been established to undertake the bid

evaluation process: (1) the Price Evaluation Team and (2) Non-Price Evaluation Team. Each team will work independently and not divulge the scoring or ranking of Proposals to the other team. The Non-Price Evaluation Team will not be permitted to view any information relating to the pricing set forth in a Proposal. Any request for information from the Proposer's submission shall go through the ECM with IO oversight.

Members of the Non-Price Evaluation Team will undertake an initial analysis and evaluation of each Proposal and score the Proposals. Once all team members have conducted an initial evaluation of the Proposals, the Non-Price Evaluation Team will meet to review and assess the scoring and ranking of each Proposal. Team members will be asked to justify and document their evaluation results. After the initial review and assessment, team members will review and assess their evaluations to ensure they are consistent and unbiased.

Members of both the Price and Non-Price teams will then present their final evaluation results to the ECM, who will then compile the results and rank the proposals.

4.5 Specifics of the Detailed Evaluation Resulting in Selection of the Priority List

The results of the price and non-price analysis will be a relative ranking and scoring of all eligible proposals. Price-related criteria will account for fifty percent (50%) of the total score and non-price-related criteria will account for fifty percent (50%) of the total score.

The expected outcome of the Detailed Evaluation will be a prioritized list of shortlisted vendors from which a Best and Final Offer ("BAFO") will be solicited. The list will be ranked in order of final scores as described below, with a cutoff at the quantity higher (up to 125%) than solicited. In the event that several bids are at an equal score at the bottom of the priority list, all will be offered the opportunity to provide a BAFO.

4.5.1 Price Analysis

The Price threshold – or not-to-exceed \$/kW threshold - will be assessed using two key elements: The first is an equivalent LGSP (Levelized Grid Services Price), which is represented as a \$/kW/service/island), which will be provided for each Proposal and reassessed by the Company based on information provided in the Proposal including the Management fee (\$/kW) and Enablement fee (\$/kW), applicable incentives and enablement schedule. The LGSP represents the levelized price of grid service that is produced by the Proposer. This value is then compared against a Qualifying Value. For both Grid Services Capacity on Oahu, Maui, and Hawai'i island, and for FFR2 on Oahu, the Value of Service, which is an avoided cost value that is produced by the Company to reflect an annual \$/kW for each service being procured by island, is the Qualifying Value. For the FFR1 services sought on Oahu, Maui, and Hawai'i island, the Contingency Storage Price is the Qualifying Value.

By the time that the proposals are received, the company is intending to re-evaluate certain Value of Services ("VoS") based on the resource plan consistent with the Stage 2 variable RFP process. That VoS will provide an annual \$/kW value for the Capacity services for each island and FFR2 services for Oahu. Regarding all three Grid Services

sought, any proposal pricing that does not come in lower than the respective Qualifying Value will be seen as having a fatal flaw for the purposes of evaluation.

For scores that do fall under the Qualifying Value, the scores will be rated relative to each other on a \$/kW basis. The Proposal with the highest total price score (lowest price) will receive 400 points, and ~~all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.~~ all other Proposals will receive points based on a proportionate reduction using the percentage by which the Proposer's levelized service price exceeds the lowest levelized service price.

4.5.2 Non-price Analysis

For the non-price analysis, each Proposal will be evaluated on each of the seven (7) non-price criteria categories set forth in the draft RFP to assess their merit in the general areas of project development feasibility and operational viability. These are presented below, with their corresponding weights. More details on these criteria and rubrics are found in Appendix A.:

- | | |
|------------------------------------------------------------------|-----|
| - Experience and Qualifications | 15% |
| - Financial Strength and Financing Plan | 10% |
| - Model GSPA Contract Exceptions | 10% |
| - Participants Acquisition and Enablement Strategy | 30% |
| - Participant Service Agreement | 5% |
| - Conformance with Hawaiian Electric's Code of Conduct standards | 15% |
| - Conformance with Information Assurance Policies | 15% |

All seven (7) non-price criteria will be scored on a scale of 1 (poor) to 5 (highly preferable). The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores. The Proposal with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level⁸ for ~~four~~ four ~~five~~ ~~(5)~~ or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed project.

- **Experience and Qualifications** – Suppliers with a demonstrated ability to construct and deliver grid services to support an electric grid can reasonably be expected to be able to successfully supply grid services to the Company with a higher level of confidence than those without any prior experience. Therefore, proposals will be evaluated based on the experience of the Supplier in recruiting, enrolling, enabling and aggregating customer assets (similar to those being proposed) and managing these assets so as to successfully deliver grid services. At a

⁸ A score of 3 is the “meets minimum standards” level that a Proposal must achieve in at least four (4) criteria.

minimum, the proposer and its team should have experience with delivering (including aggregating, financing, interconnecting and managing) at least one project of a similar size and technology to the one being proposed. Additional preference will be given to proposers with experience in successfully delivering services to multiple utilities in a manner that is similar to the one being proposed and/or that have prior experience delivering such services in Hawai'i.

- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the grid services delivery commitment. A complete financial plan addresses the following issues: project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the project. The financial strength of proposers or their credit support providers will be considered, including their credit ratings. At a minimum, the Proposal should include a basic financial plan for the Plan covering the sources of debt and equity, capital structure, etc. and provide evidence of general support for the project financing. The financing participants are expected to be reasonably strong financially. Suppliers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody's, Fitch) will also be given preference.
- **GSPA Contract Exceptions** – In general, Proposers are encouraged to accept the contract terms identified in the GSPA where possible in order to expedite the overall RFP process and potential GSPA negotiations. Proposers who elect to propose modifications to the GSPA shall provide a MS Word red-line version of the GSPA identifying specific modifications as a component of their Proposal and shall also provide a detailed explanation and supporting rationale for each of the proposed modifications to the GSPA in order to enable the Company and Independent Observer to evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal. With respect to the foregoing, Proposers are encouraged to avoid using drafting notes and comments without making red-line changes directly to the GSPA, or otherwise reserving the right to make additional modifications to the GSPA at a later time, as this will make it difficult for the Company and Independent Observer to determine the impact any such unspecified modifications will have on the overall risk assessment associated with the evaluation of each Proposal. General comments, such as “parties to discuss” are unacceptable and will not be considered as a modification.
- **Participants Acquisition Strategy** – In tandem with the bid size, the Company will be extremely attentive to the customer recruitment strategy. The Company will assess this in terms of the credibility of the approach and seek to determine how much knowledge or experience the Supplier has with the Hawaii market. The Company sees customer or participant acquisition as one of the largest areas of uncertainty or risk in the grid service delivery process, and will seek compelling and well-thought-out participant recruitment and enrollment strategies. A failed enablement will result in economic impacts to Suppliers and leave the system short

on projected grid service resources. A plan that utilizes local installers, technicians or contractors will be rated more favorably than those that do not have a similar consideration.

- **Participant Service Agreement** – The Company has specified that while the Supplier must develop a Participant Service Agreement for engagements directly with customers, the Company would need to review the agreements for completeness relative to the Company guidelines.
- **Conformance with Hawaiian Electric's Code of Conduct** standards – The Company has specified that a Supplier must conform to, at a minimum, the Company Code of Conduct, this is of particular importance given that Suppliers will be interactive with customers, typically on customer premises and otherwise indirectly acting as a certified partner with the Company. As such, the Company will be interested in reviewing the Suppliers' Code of Conduct standards to ensure adequate conformity to Company standards.
- **Conformance with Information Assurance Policies** – Customer data will be exchanged as part of the enrollment and enablement process. Furthermore, Supplier event performance data and by inference, Company system data will also be shared across Supplier-Company systems. As a result, conformity to Company IA standards is a critical part of this engagement and will be an important part of the evaluation process, especially in areas such as secure data transfer, data protection and encryption.

4.6 Selection of the Short List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 50% price-related criteria and 50% non-price-related criteria weighting outlined above. The price and non-price analysis will result in a ranking of Proposals. The Company will select a Priority List from the highest-scoring Proposals that accrue at a minimum to the quantity of up to 125% of grid services as solicited. The Company will, to a degree practical, will take into consideration a balanced distribution of class segmentation (residential, small and medium business, and commercial and industrial) and diversity of end-use technologies. Again, if there are evenly ranked proposals at the low end of the list, these will all be advanced for BAFO solicitation, meaning that the short list will not necessarily be limited to the total quantity of grid services as solicited. The Company is thereby able to advance additional quantities beyond the target procurement amount for each service to ensure a robust short list.-

4.7 Best and Final Offer (BAFO)

The Company will solicit a Best and Final Offer from Proposers selected to the Priority List. Proposers will have the opportunity to, but are not obligated to, update (downward only⁹) only the pricing elements of their Proposal in order to improve the competitiveness of their Proposal

⁹ Pricing elements will only be allowed to be lowered - no upward adjustment to the pricing elements. All other characteristics of the Proposal and capabilities must remain valid.

prior to being further assessed in the Final Evaluation. At this time, updates may only be made to the following pricing elements:

- Management Fees (\$/kW/service/month/island)
- Enablement Fee price (\$/kW/service/island)
- Incentive Adder (\$/kW/service/island)

Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.

At the conclusion of the BAFO phase, each bid to provide FFR-1 will be converted into an NPV for a range of years, extending from the 5-year contract term to the maximum Contingency Storage proposal project term. These NPVs will be used, as described below, for FFR-1 and Contingency Storage project comparisons.

4.8 Final Evaluation for Grid Services Capacity

Once the Priority Lists have been established and the BAFOs are received, the Company will determine a final evaluation score. This will be calculated using the Initial Evaluation methodology. The Non-Price evaluation score will be retained but the Price evaluation will be rescored on the BAFO prices. Projects will be selected to the Final Award Group, beginning with the highest final evaluation score, until the target MW from Table 1-1 is met, or the list of eligible projects are exhausted.

4.9 Final Evaluation for Grid Services FFR-2 (Oahu) and FFR-1 (Maui)

Once the Priority Lists have been established and the BAFOs are received, the Company will determine a final evaluation score. This will be calculated using the Initial Evaluation methodology. The Non-Price evaluation score will be retained but the Price evaluation will be rescored on the BAFO prices. Projects will be selected to the Final Award Group, beginning with the highest final evaluation score, until the target MW from Table 1-1 is met, or the list of eligible projects are exhausted.

4.10 Final Evaluation for Grid Services FFR-1 for Oahu and Hawai'i Island

Once the Priority lists have been established and BAFOs are received, the Company will proceed with a comparative assessment of Contingency Storage bids in the Variable RFP and FFR-1 bids for delivering these services on the Hawai'i Island and Oahu. This step will precede the development of the Final Award list for the Grid Services RFP and precede the Detailed Evaluation stage for the Variable RFP process.

Given that both the Grid Services and Variable Renewable RFP bid review teams will have already assessed both price and nonprice criteria and subsequently established Priority lists, the

assumption is that price thresholds have been passed and the non-price assessments have addressed all concerns and potential risks associated with the offers. Therefore, at the time of the comparative assessment, the Company intends to combine all FFR-1 and Contingency Storage bids from each Priority list into a full set of projects (if possible based on bids, the Company will pull at least 18MW and 50MW of proposed projects from each list for Hawai'i and Oahu respectively). Proposers will be required to bid FFR-1 and contingency storage for Hawaii island in increments of 3 MW, 6 MW, 9 MW or 12 MW and for Oahu for a minimum of 5 MW.

With the complete list established, the Company will execute a price-based evaluation. The proposed cost for each FFR-1 bid and Contingency Storage project will be calculated as a Net Present Value ("NPV") to determine a levelized price in \$ per MW_h. Because a storage project offered under the Variable RFP may have a longer term than a Grid Services contract, the Company will make certain valuation assumptions about the extensibility of an FFR bid under the Grid Services RFP to establish a comparative basis for analysis. The crux of the effort will be to extend the costs associated with the FFR-1 Grid Services bid to match the proposed project term for the Contingency Storage. With this as a premise, the Company will develop two NPVs for each FFR-1 proposal, as a form of a sensitivity analysis. The first will be a simplified extension of the 5-year contract costs as follows:

- Costs are extended by creating theoretical contract years beyond the initial 5-year period
 - o Incentive amounts (same \$/kW used as the initial 5-year period)
 - o Management fees (same \$/kW used as the initial 5-year period)
- There is a 10% attrition of enabled customers every five years, so enablement fees need to account for that
 - o Enablement fees to address attrition will stay consistent with currently bid enablement fees (same \$/kW used as the initial 5-year period).

The second will be a set of modified assumptions as follows:

- Management Fee (same \$/kW used as the initial 5-year period) Costs are extended by creating theoretical contract years beyond the initial 5-year period
- Customer incentive values (same \$/kW used as the initial 5-year period) stay consistent over additional years
- There is a 10% attrition of enabled customers every five years, so enablement fees need to account for that
 - o Enablement fees to address attrition will stay consistent with currently bid enablement fees (same \$/kW used as the initial 5-year period).
- Aggregator management fees see a 5% reduction every five years

This approach will be applied to allow the Company to align a 5-year Grid Services contract with any Variable Renewable RFP proposed Contingency Storage project term. The sensitivity, largely based on increased management fees, allows the Company to determine risk associated with Management fee increases; attrition is based largely on historical attrition rates.

With the calculations completed to create a levelized price for comparison, the Company will evaluate all FFR-1 and Contingency Storage proposals and rank them in order of least cost to

highest cost. If possible based on the number and quality of Proposals received, the Company will attempt to include in the joint evaluation Projects totaling 18 MW of Contingency Storage on the Priority List for Contingency Storage for the Variable Renewable RFP and 18 MW of FFR-1 on the Short List for the Grid Services RFP for Hawai'i island, and similarly for Oahu, 50 MW of Contingency Storage for the Variable Renewable RFP and 50 MW for the Grid Services RFP. The lowest cost proposals across all Variable Renewable RFP and Grid Services RFP projects summing to 18MW and 50MW will be selected for the Hawai'i Island and Oahu Final Award Groups, respectively (NOTE: Contingency Storage selection for Hawai'i island will incorporate locational constraints not applicable to the Grid Services FFR selection).

If after this process, the Priority list reflects a shortage of total resources based on solicitation targets, the Company will identify any additional prospective bids and seek BAFO from those bids. Specifically, if as a result of an aggregator's FFR-1 bid being removed, the Capacity contribution from that aggregator as a stand-alone service is not within the Priority list, and thus the Company is short on Capacity, the Company would inspect the bid ranking for the next best Capacity bid of equal or greater quantity. At that time, the Company would approach the aggregator and request a BAFO for the remaining Capacity target.

Chapter 5: Post Evaluation Process

5.1 Contract Negotiation Process

Within five (5) business days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. The Company's goal is to complete contract negotiations and submit GSPAs for approval within six (6) months of notification of intent to enter contract negotiations.

5.2 PUC Approval of GSPA

Any signed GSPA resulting from this RFP is subject to PUC approval as described in the GSPA, including Appendix 1 thereof.

EXHIBIT 9

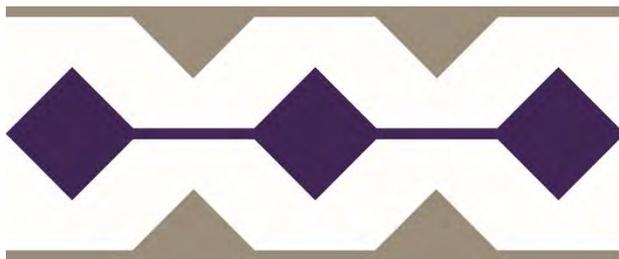
Renewable Evaluation Protocol

FINAL DRAFT REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

*Exhibit 9 – Variable Renewable Dispatchable
Generation and Energy Storage Stage 2
Proposal Receipt and Proposal Evaluation
Protocol*



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Electric**

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EXHIBIT 10

Grid Services Evaluation Protocol

FINAL DRAFT REQUEST FOR PROPOSALS

FOR

**DELIVERY OF GRID SERVICES FROM CUSTOMER-SITED
DISTRIBUTED ENERGY RESOURCES**

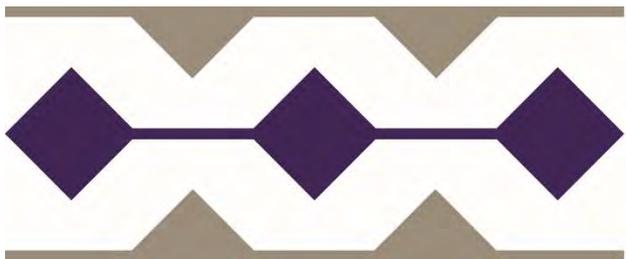
ISLANDS OF O‘AHU, MAUI & HAWAI‘I

RFP No. 103119-02

AUGUST 22, 2019

Docket No. 2017-0352

Exhibit 10 – Grid Services RFP Evaluation Protocol



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Electric**

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EXHIBIT 11

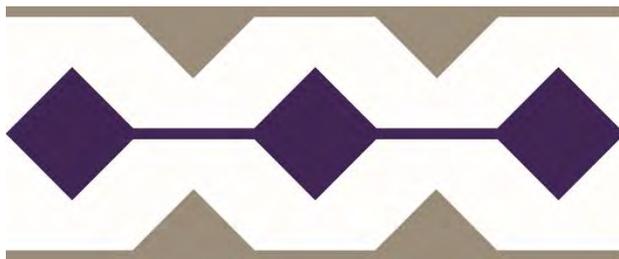
Redline of Renewable Evaluation Protocol

FINAL DRAFT REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

~~JULY 10~~AUGUST 22, 2019

Docket No. 2017-0352

*Exhibit ~~69~~ – Variable Renewable Dispatchable
Generation and Energy Storage Stage 2
Proposal Receipt and Proposal Evaluation
Protocol*



**Hawaiian
Electric**

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EXHIBIT 12

Confidentiality Justification Table

EXHIBIT 12: CONFIDENTIALITY JUSTIFICATION TABLE

Pursuant to Protective Order No. 36148, the Hawaiian Electric Companies hereby identify redacted confidential and/or proprietary information that is being submitted as “confidential information” and: (1) identifies, in reasonable detail, the confidential information’s source, character, and location; (2) states clearly the basis for the claim of confidentiality; and (3) describes, with particularity, the cognizable harm to the producing party or participant from any misuse or unpermitted disclosure of the information.

Reference	Identification of Item	Basis of Confidentiality	Harm
<p>Transmittal filing on Companies’ Submission of Final Requests for Proposals, Exhibits 9, 10, and 11.</p>	<p>The Hawaiian Electric Companies’ proposed (1) Variable Renewable Dispatchable Generation and Energy Storage Stage 2 Proposal Receipt and Proposal Evaluation Protocol and (2) Delivery of Grid Services Via Customer-Sited Distributed Energy Resources Bid Receipt and Bid Evaluation Protocol.</p>	<p>Confidential commercial and financial information which falls under the frustration of legitimate government function exception of the Uniform Information Practices Act (“UPA”).</p>	<p>Public disclosure of the subject confidential information could cause the Companies to be competitively disadvantaged in their proposed procurement. The Companies believe that public disclosure of this information could dissuade the market from setting the most competitive pricing for renewable generation and storage and/or give an unfair business advantage to potential proposers, resulting in increased costs or other prejudice to the Companies and their customers. Furthermore, Section IV.H of the Framework for Competitive Bidding provides that in a closed bidding process “bidders shall not have access to the utility’s bid evaluation models, the detailed criteria used to evaluate bids, or information contained in proposals submitted by other bidders.”</p> <p>The Companies maintain that the subject information falls under the frustration of legitimate government function exception of the UIPA, as disclosure of the subject information would impair the Commission’s ability to obtain necessary information to properly perform its review of this regulatory proceeding (as the Companies would not have submitted the confidential information in this docket at this time but for: (1) the</p>

Reference	Identification of Item	Basis of Confidentiality	Harm
			<p>governmental function of reviewing the Companies' draft RFPs; and (2) the Companies' belief and reliance that the information would not be publicly disclosed).</p> <p>The confidential information: (1) has not been previously disclosed or otherwise publicly disseminated; (2) is not of the kind of information that the Companies would customarily disclose to the public at this juncture; and (3) is of a nature that its disclosure could (a) impair the Commission's ability to obtain necessary information from similarly situated parties in the future, and (b) cause substantial harm to the Companies and/or its customers as previously described above.</p>