BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAI‘I

In The Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.,	)	DOCKET NO. 2015-0389
HAWAII ELECTRIC LIGHT COMPANY, INC.	)	
MAUI ELECTRIC COMPANY, LIMITED	)	
	)	
For Approval to Establish a Rule to Implement	)	
a Community-Based Renewable Energy Program,	)	
and Other Related Matters.	)	
_____	)	

THE HAWAIIAN ELECTRIC COMPANIES'

COMMUNITY BASED RENEWABLE ENERGY PHASE 2 TARIFF AND APPENDICES, AND RFPS AND MODEL CONTRACTS FOR LMI SUBSCRIBERS AND TRANCHE 1

Book 2 of 9

Filed February 23, 2022

EXHIBIT 5

Request for Proposals (RFP) for CBRE Projects for
Low-and-Moderate-Income (LMI) Subscribers
for Oahu, Maui and Hawaii Island

Hawaiian Electric

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

This Request for Proposals (“RFP”) is a DRAFT only. Hawaiian Electric Company, Inc. (“Hawaiian Electric”), Maui Electric Company, Limited (“Maui Electric”), and Hawai‘i Electric Light Company, Inc. (“Hawai‘i Electric Light”) (each a “Company” and collectively, the “Companies”) will employ a competitive bidding process to select Community Based Renewable Energy projects consistent with the State of Hawai‘i Public Utilities Commission’s (“PUC”) Competitive Bidding Framework. Under the Competitive Bidding Framework, the Companies filed initial drafts of the RFP with the (PUC). This proposed final RFP is being submitted to the PUC for approval and is subject to further revision based upon direction received from the PUC. After approval by the PUC, the Companies will issue the final RFP.

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Chapter 1: Introduction and General Information

Hawaiian Electric Company, Inc. ("Hawaiian Electric"), Maui Electric Company, Limited ("Maui Electric"), and Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light") (each a "Company" and collectively, the "Companies") seek proposals for Community-Based Renewable Energy ("CBRE") projects, also referred to as shared solar,[1] dedicated to Low- and Moderate-Income Subscribers ("LMI Subscribers"), for the Hawaiian Electric System, Maui Electric System, and Hawai'i Electric Light System on the islands of O'ahu, Maui, and Hawai'i, respectively (each a "System"), in accordance with this Request for Proposals ("RFP").

Affiliates of the Company may submit a Proposal in response to this RFP subject to the requirements of this RFP. The Company will not submit a Proposal in response to this RFP. Proposers may submit separate Proposals for any single island or any combination thereof.

In this RFP, the Company seeks new dispatchable photovoltaic ("PV") generation projects (with or without a Battery Energy Storage System ("BESS")) of at least 250 kW as shown in Table 1 below. Projects that are being proposed at the transmission level on **Maui** and **Hawai'i Island** must be paired with BESS.

Mid-Tier Projects will utilize a pre-approved standard form contract in the form of Appendix K ("Mid-Tier SFC"). Each Mid-Tier Project will be limited to a maximum of 5 MW on **O'ahu** and 2.5 MW on **Maui** and **Hawai'i Island**. Large Projects, which include any Project exceeding 5 MW on **O'ahu** and 2.5 MW on **Maui** and **Hawai'i Island**, and any Project interconnecting at the transmission level, will utilize the Company's Model Renewable Dispatchable Generation Power Purchase Agreement ("RDG PPA") which can be found in Appendix L.

Table 1
Project Size and Contract Options by Island

	Large Projects / RDG PPA*	**Mid-Tier Projects / Mid-Tier SFC***
Oahu	>5 MW	250 kW – 5 MW
Maui & Hawai'i Island	>2.5 MW**	250 kW – 2.5 MW

* Any project interconnecting at the transmission level will be considered a Large Project and must use the RDG PPA.
** Any project interconnecting at the transmission level on **Maui** or **Hawai'i Island** is required to be paired with a BESS.

[1] In response to some confusion in the community over the acronym "CBRE" that the Companies have experienced during their latest efforts to publicize the CBRE Program, the Companies are introducing the more descriptive term "shared solar" for the CBRE Program in an effort to alleviate any further confusion in the community. The Companies intent is to use both terms, "CBRE" in regulatory filings and "shared solar" in marketing and other Company literature to refer to the Community-Based Renewable Energy Program first introduced by the CBRE Framework. The term "shared solar" will be used even though the CBRE Program is not necessarily limited to PV projects only.

Each successful Proposer will provide dispatchable PV generation and ,as applicable, a BESS to the Company pursuant to the terms of an RDG PPA or Mid-Tier SFC. RDG PPAs for Large Projects will be subject to review and approval by the State of Hawai‘i Public Utilities Commission ("PUC"), while the Mid-Tier Projects selected in this RFP will not be subject to further PUC review and approval.

The Company's RDG PPA and Mid-Tier SFC employ an innovative contracting mechanism which is very different than traditional PPA structures. Proposers are instructed to thoroughly review the RDG PPA attached as Appendix L and the Mid-Tier SFC attached as Appendix K based on the size of their project. The structure of the RDG PPA and Mid-Tier SFC intends to provide payments to the Proposer by the Company on a monthly lump sum basis, based upon the energy potential of the Facility, regardless of the actual energy dispatched. In exchange, the utility maintains full dispatch control of the Facility as needed. Under the RDG PPA and Mid-Tier SFC, each Facility must meet certain requirements to receive the full lump sum payment each month. These requirements ensure that each plant is available to the Company for dispatch to meet system needs.

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. Depending on 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; circuit availability; and changes to regulatory or legal requirements, among other things, the Company will select one (1) project, but may optionally choose to select additional projects through this RFP.

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, in the RDG PPA and Mid-Tier SFC, attached as Appendix L and K, respectively, and, if applicable, the DC Coupled Term Sheet, attached as Appendix M.

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.

Unless identified for a specific island, the requirements in this RFP apply to all projects proposed for the islands of O‘ahu, Maui, and Hawai‘i.

1.1 Authority and Purpose of the Request for Proposals

1.1.1 This RFP is issued in response to Order No. 37070 issued on April 9, 2020, Order No. 37139 issued on May 14, 2020, and Order No. 37879 issued on July 27, 2021 in Docket No. 2015-0389 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").

1.2 Scope of the RFP

1.2.1 Proposals submitted in response to this RFP shall meet the requirements identified in Parts II and III of Tariff Rule No. 29 Community-Based Renewable Energy Program Phase 2, attached as Appendix J.

1.2.2 The Company will only accept Proposals that utilize PV technology as the source energy, which may be paired with storage, as applicable. No other generation technologies may be proposed. Proposals may be submitted as: (1) Generation only Projects; or (2) Generation paired with a BESS Projects ("Paired Projects").

1.2.3 The Project shall be dedicated to LMI Subscribers. A minimum of 60% of the Project's capacity shall be reserved for LMI Customers, as defined in Tariff Rule No. 29 in Appendix J. Up to 40% of the Project's capacity may be allocated to a LMI Anchor Tenant(s), as defined in Tariff Rule No. 29 in Appendix J. Unsubscribed RDG compensation will be subject to the requirements in Article 2 of the RDG PPA or Attachment C of the Mid-Tier SFC. The capacity allocations (%) identified in the Proposal submission will be used in the RFP evaluation process and therefore Proposers will be held to their provided value.

1.2.4 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, or without having to rely on a proposed change in law, rule, or regulation.

1.2.5 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.

1.2.6 Projects submitted in response to this RFP must be located on O'ahu, Maui, or Hawai'i Island.

1.2.7 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)[2], are not located within a Tsunami Evacuation Zone.[3], and are not located within the Hawaii Department of Land and

[2] 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

[3] 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/#/. Projects infrastructure must be outside the "Tsunami Evacuation Zone" (but not necessary to be outside the "Extreme Tsunami Evacuation Zone").

Natural Resources flood map's flood zones A, AE, AEF, AH, AO, VE based on the Federal Emergency Management Agency's Digital Flood Insurance Rate Maps.[4] All equipment required for a Proposer's project must be sited within the Proposer's project site with no assumptions that any equipment will be sited on Company property unless specified by the Company.

1.2.8 Projects on **Maui** and **Hawai'i Island** must interconnect to the Company's System at the transmission level (69 kV) or distribution level (12 kV or lower). Projects on **O'ahu** must interconnect to the Company's System at the transmission level (138 kV), sub-transmission level (46 kV) or distribution level (12 kV or lower). Projects interconnecting at the transmission level can interconnect via a new substation or to an existing Company substation with sufficient available space. Projects interconnecting at the distribution level (12 kV or lower) must not exceed 3 MW.

1.2.9 Projects submitted in response to this RFP must be 250 kW or larger. Proposers for CBRE projects smaller than 250 kW should refer to the Company's CBRE website for instructions on how to submit proposals at http://www.hawaiianelectric.com/sharedsolar. No single point of failure from the Facility shall result in a decrease in net electrical output greater than 142 MW on O'ahu, 20 MW on Maui, and 30 MW on Hawai'i Island. Additionally, in meeting the single point of failure requirement, if the Facility exceeds the MW of the single point of failure limit, the Facility must be segmented in equally sized capacities (MW). Each segment must have its own POI into the System that can be independently dispatched via the Company's energy management system. Revisions will need to be made to the RDG PPA to account for multiple POI.

1.2.10 Contracts for Projects selected through this RFP must use the RDG PPA or Mid-Tier SFC, as described in Section 3.8. Under the RDG PPA and Mid-Tier SFC, the Company shall maintain exclusive rights to fully direct dispatch of the Facility, subject to availability of the resource and Section 1.2.11 below. The term of the RDG PPA or Mid-Tier SFC will be 20 years.

1.2.11 The BESS component of a Paired Project will be charged during periods when full potential export of the generation component is not being dispatched by the Company. Stored energy in the BESS may be used to export energy to the Company subject to Company Dispatch. The BESS component of a Paired Project 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 or Mid-Tier SFC.

For example, for a 2 MW facility, the BESS component must be able to store and discharge at least 8 MWh of energy at 2 MW maximum export in a single charging/discharging cycle throughout the term of the Mid-Tier SFC.

1.2.12 Grid-charging is not required for Paired Projects. However, if grid-charging capability is included, the Paired Project must be able to be charged from the grid at the direction of the Company after the 5-year Investment Tax Credit ("ITC") recapture period has lapsed.

[4] See Hawaii Department of Land and Natural Resources Flood Hazard Assessment Tool at http://gis.hawaiinfip.org/FHAT/.

Paired Projects electing to include grid-charging capability that are incapable of claiming the ITC must be capable of being 100% charged from the grid from the GCOD.

1.2.13 The amount of energy discharged from a BESS component in a year will be limited to the energy storage contract capacity (in MWh) multiplied by the number of Days in that year. A BESS component may be dispatched more than once per Day, subject to such discharge energy limitations.

1.2.14 Proposals must specify a GCOD no later than February 28, 2027. Preference will be given to Proposals that specify an earlier GCOD in both the price and non-price evaluation. A Proposer's GCOD set forth in its Proposal will be the GCOD in any resulting RDG PPA or Mid-Tier SFC 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. Proposals that propose an earlier GCOD will be scored higher during the Initial Evaluation phase (see Chapter 4).

1.2.15 If selected, Proposers will be responsible for all costs throughout the term of the RDG PPA or Mid-Tier SFC, 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 Seller-Owned Interconnection Facilities, and the operation and maintenance ("O&M") of the Facility.

1.2.16 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 the Mid-Tier SFC.

1.2.17 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 the Mid-Tier SFC. The applicable PPA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue the state tax credit.

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 Independent Observer will advise and monitor all phases of the RFP process and 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 **Arroyo Seco Consulting.**

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"). Phone communication or face-to-face meetings will not be supported. Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company's RFP website. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers shall submit questions no later than fifteen Days before the Proposal Due Date (RFP Schedule in Section 3.1, Table 2). 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 CBRE Mutual Confidentiality and Non-Disclosure Agreement ("CBRE 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 contacts for this RFP are:

For O'ahu	For Maui	For Hawai'i Island
Shawn Uehira Energy Contract Manager Hawaiian Electric Company, Inc.	Isaac Kawahara Energy Contract Manager Hawaiian Electric Company, Inc.	Michael Ito Energy Contract Manager Hawaiian Electric Company, Inc.

RFP Email Address: cbrerfp@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 Proposals must not rely on any information that is not contained within the Proposal itself in demonstrating compliance for any requirement in this RFP.

1.7.4 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 CBRE NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the CBRE 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 a Proposer's or Company's negotiating positions.

1.7.5 All 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, Table 2. No hard copies of these Proposals will be accepted by the Company.

It is the Proposer's sole responsibility to ensure that complete and accurate information has been submitted on time and consistent with 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. Each Energy Contract Manager, in consultation with the Independent Observer, will confirm that Proposals were submitted by the Proposal Due Date in Section 3.1, Table 2. The Electronic Procurement Platform automatically closes to further submissions after the IPP and Affiliate Proposal Due Date in Section 3.1, Table 2.

1.8 Proposal Fee

1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee, based on the size of the proposed Project, for each Proposal submitted.

Project Size	**Proposal Fee**
250 kW and larger, up to and including 2.5 MW	$1,000
Larger than 2.5 MW, up to and including 10 MW	$2,500
Larger than 10 MW	$5,000

1.8.2 Proposers may submit up to two (2) variations of their Proposal, one of which is the base variation of the Proposal, under a single Proposal Fee.

1.8.3 Variations of pricing terms, Facility size, or with/without storage can be offered. Variations which propose a different Site will not be considered and will be deemed a separate Proposal, and a separate Proposal Fee must be paid for each such Proposal. 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 4.

1.8.4 The Proposal Fee must be in the form of a cashier's check from a U.S.-chartered bank 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, Table 2. The cashier's check should include a reference to the Proposal(s) for which the Proposal Fee is being provided. Proposers must identify in the Proposal Response Package (instructions in Appendix B Section 1.3.1) the delivery information for its Proposal Fee. 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:

For **O'ahu**	For **Maui**	For **Hawai'i Island**
Payable to: Hawaiian Electric Company, Inc.	Payable to: Maui Electric Company, Ltd.	Payable to: Hawai'i Electric Light Company, Inc.
Shawn Uehira Energy Contract Manager Hawaiian Electric Company, Inc. Mail Code AL12-IU PO Box 2750 Honolulu, Hawai'i 96840	Isaac Kawahara Energy Contract Manager Hawaiian Electric Company, Inc. Mail Code AL12-IU PO Box 2750 Honolulu, Hawai'i 96840	Michael Ito Energy Contract Manager Hawaiian Electric Company, Inc. Mail Code AL12-IU PO Box 2750 Honolulu, Hawai'i 96840

If the Proposal Fee is delivered by other courier services, the Proposer shall address it to:

For **O'ahu**	For **Maui**	For **Hawai'i Island**
Hawaiian Electric Company, Inc. Ward Receiving Attention: Shawn Uehira, Energy Contract Manager Mail Code AL12-IU 799 S. King St. Honolulu, Hawai'i 96813	Hawaiian Electric Company, Inc. Ward Receiving Attention: Isaac Kawahara, Energy Contract Manager Mail Code AL12-IU 799 S. King St. Honolulu, Hawai'i 96813	Hawaiian Electric Company, Inc. Ward Receiving Attention: Michael Ito, Energy Contract Manager Mail Code AL12-IU 799 S. King St. Honolulu, Hawai'i 96813

Due to COVID-19 disease prevention measures, Proposal Fees cannot be delivered in person.

1.9 Procedures for Affiliate Proposals

1.9.1 The Competitive Bidding Framework allows the Company and its Affiliates the opportunity to submit Proposals[5] to RFPs issued by the Company. Requirements for Company Self-Build ("Self-Build Option" or "SBO") and Affiliate Proposals are specified in the Code of Conduct ("CBRE 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. 2015-0389 on July 9, 2020. However, the Company will not submit a SBO to this RFP. The CBRE Code of Conduct will apply to all CBRE Phase 2 RFPs regardless of whether the Company submits a SBO. A copy of the Procedures Manual is attached as Appendix C.

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. However, for Affiliate Proposals for Mid-Tier Projects, the PUC will not require an additional review pursuant to the Affiliate Transaction Requirements, but will hold Affiliate Proposals to the terms of their Proposal. Affiliate Proposals will be treated identically to IPP Proposals and must be submitted electronically through the Electronic Procurement Platform by the IPP and Affiliate Proposal Due Date in RFP Section 3.1, Table 2.

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

[5] A Proposal will also be treated as an Affiliate Proposal if the Affiliate is a partner for the Proposal.

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.[6] 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 of this RFP (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 or disqualification 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.

[6] 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 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 Mid-Tier SFC, 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 either the requirements of the RDG PPA or Mid-Tier SFC. This RFP and either the RDG PPA or Mid-Tier SFC 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.

2.1.1 For Paired Projects, the functionality and characteristics of the BESS must be maintained throughout the term of the RDG PPA or Mid-Tier SFC. To be clear, Proposers may not propose any degradation for either capacity or efficiency in their Proposals.

2.1.2 Grid forming and black start capability[7] are preferred but not required for distribution and subtransmission-connected Facilities that include a BESS. These capabilities are given preference as part of the non-price criteria, Locational Value: Non-Wires Alternative and Community Resilience, in Section 4.4.2 in this RFP.

Grid forming and self-energization capability[8] are required for transmission connected projects that include a BESS, as applicable.

[7] The ability to start itself and provide power to a designated set of loads within an established microgrid area without relying on any services or energy from the Company's grid in order to provide backup power to the established microgrid area if the grid connection is deenergized. This is a Facility and site specific design requiring Company review and depending on the design may be required to apply in the appropriate Microgrid Services Tariff accordingly.

[8] See Section 3 of Attachment B of the appropriate RDG PPA for the appropriate definition of grid forming and self-energization capability expected of transmission connected projects.

2.2 System Information

2.2.1 For Projects intending to interconnect to the Company System at the distribution level (12 kV or lower on **O'ahu**, **Maui** and **Hawai'i Island**), Proposers are encouraged to use the Locational Value Maps located at: https://www.hawaiianelectric.com/clean-energy-hawaii/integration-tools-and-resources/locational-value-maps to determine circuit capacity. However, while the Locational Value Map provides information regarding an initial assessment of the potential MW hosting capacity for distribution level circuits, these numbers should only be used as a screening tool to select a circuit that will provide a higher likelihood of interconnection. This is because the methodology used to develop theses hosting capacity numbers is geared towards smaller distributed energy resources ("DER") and does not include the scenario of a larger DER interconnecting at one point. As a result, load flow analyses are required to confirm the impact to line capacities and voltage limits. Detailed load flow analyses will be performed as part of the project selection process. Prior to submitting a proposal, Proposers are encouraged to inquire about the available circuit capacity for a Project at a specific location. Direct questions to the RFP Email Address in Section 1.6.

2.2.2 For Projects on **O'ahu** interconnecting to 46 kV circuits, Company information regarding an initial assessment of potential MW capacity of 46 kV circuits will be made available to Proposers only after execution of the CBRE NDA.[9] 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 available MW capacity for a Project at a specific location. Direct questions to the RFP Email Address in Section 1.6.

2.2.3 For Projects on **O'ahu** interconnecting to 46 kV circuits, the proposed Project output cannot exceed the available hosting capacity limit during the daytime hours of 8am to 5pm.[10] Together with existing and expected generation sources available during those hours prior to the GCOD, the proposed Project output at all other hours (5pm to 8am) cannot exceed the identified conductor limit. For example, a solar resource paired with a BESS 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 O'ahu 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.

2.2.4 For Projects interconnecting to the Company System at the transmission level (138 kV on **O'ahu** and 69 kV on **Maui** and **Hawai'i Island**), prior to submitting a proposal,

[9] Appendix E contains the Mutual Confidentiality and Non-Disclosure Agreement for this RFP.
[10] The available hosting capacity is not a final determination whether it is feasible to interconnect a Proposed Facility. The available hosting capacity provided in response to inquiries to the Company represents the power system's conditions at the time the analysis is conducted. This analysis will examine steady-state thermal capacity and voltage issues during daytime minimum loading conditions only.

Proposers are encouraged to inquire about the available MW capacity for a Project at a specific location. Please direct questions to the RFP Email Address in Section 1.6.

2.2.5 Projects interconnecting to transmission level 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 interconnection.

2.2.6 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

The Proposer must provide information pertaining to the design, development, and construction of the Seller-Owned Interconnection Facilities.

2.3.1 All Proposals must include a description and conceptual or schematic diagrams 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.

For Projects starting from 250 kW and less than 1 MW in size, Project single line and three line diagrams, and an equipment list shall be submitted with the Proposal. For Projects greater than or equal to 1 MW in size, a completed Project Interconnection Requirement Study Data Request worksheet, which can be found in Appendix B, Attachment 2, all project diagram(s), models for equipment and controls (see Appendix B, Attachments 3 and 6), list(s) identifying components and respective files (for inverters and power plant controller), and complete documentation with instructions must be submitted with their Proposal submission.

2.3.1.1 The Company will also make available typical drawings to Proposers to familiarize you with the Company's engineering expectations for the Proposer's interconnection facilities. The drawings may not reflect the exact requirements of your project but should provide useful guidance to assist with your Proposal. The most updated Engineering Standards will be provided to Projects who are selected to the final award group and continue through negotiations. To request the typical drawings, submit a request via the communication methods identified in Section 1.5 upon the execution of a NDA as specified in Section 3.12.1..

2.3.1.2 Interconnection Facilities must be designed such that it meets or exceeds the applicable single line diagram in Appendix H.

2.3.2 Each Company's Tariff Rule No. 19 establishes provisions for Interconnection and Transmission Upgrades and can be found at https://www.hawaiianelectric.com/billing-and-payment/rates-and-regulations/. 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.

2.3.3 The Proposer shall be responsible for all costs for Seller-Owned Interconnection Facilities required to interconnect a Project to the Company System. Costs for Company-Owned Interconnection Facilities should not be included in the Proposal pricing, unless specified in Appendix H.

2.3.4 Selected Proposers shall be responsible for the actual final costs of all Seller-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 Seller-Owned Interconnection Facilities exceed the amounts proposed. Selected Proposers shall not be responsible for the costs of the Company-Owned Interconnection Facilities, subject to any limitations set forth in Appendix H. However, the Company will develop assumed costs for Company-Owned Interconnection Facilities based on the typical CBRE interconnection, and will use these assumed costs as a proxy in the evaluation process. For those portions of the Company-Owned Interconnection Facilities to be constructed by the selected Proposers, Company shall reimburse the selected Proposers for such work as set forth in Appendix H. Selected Proposers shall confirm the scope and cost of work for Company-Owned Interconnection Facilities prior to starting any such work. The Company will not be responsible for reimbursing any costs related to work deemed escessive and/or corrective in nature. See Appendix H for further details regarding Company-Owned Interconnection Facilities cost responsibilities.

2.3.5 Proposers are required to account for all costs for distribution-level service connection for station power in their pricing proposal.

2.3.6 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 Section 5.1.1. Proposals selected to the Final Award Group may be subject to further study in the form of an IRS. The IRS process is further described in Section 5.1.2. The results of the completed IRS or as identified through the Detailed Evaluation process, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed RDG PPA or Mid-Tier SFC.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 2 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 to the Proposers and posted on the RFP Website.

Table 2
Proposed RFP Schedule

Milestone	Schedule Dates
(1) Draft RFP filed	July 9, 2020
(2) Technical Conference	July 29, 2020
(3) Parties and Participants file Comments by	August 12, 2020
(4) Proposed Final RFP filed	September 8, 2020
(5) Updated RFP Draft filed per Order 37592	March 30, 2021
(6) Parties and Participants file Comments by	April 14, 2021
(7) Proposed Final RFP filed per Order 37879	August 25, 2021
(8) Proposed Final RFP filed per Order 38217	February 23, 2022[11]
(9) Final RFP issued	March 17, 2022[12]
(10) IPP and Affiliate Proposal due date	May 17, 2022 at 2:00 pm HST
(11) Priority List selected	July 26, 2022
(12) BAFOs due	August 2, 2022
(13) Final Award Group selected	November 15, 2022
(14) Contract Negotiations Start	November 22, 2022

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/LMICBRERFP

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 the receipt of Proposals in 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.

[11] All subsequent dates in the proposed schedule may be modified based on further guidance provided by the PUC.
[12] Per Order 38217, page 17-18, "Hawaiian Electric's final CBRE Phase 2 Tranche 1 and LMI RFPs and Rule 29 tariffs for Hawaii Island, Maui, and Oahu shall be approved automatically 15 days after they are filed, unless the Commission orders otherwise." The schedule reflects the RFP being issued one week after its anticipated approval date.

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 Exchange

The PUC conducted a Technical Status Conference on July 29, 2020 to discuss the draft RFP. Parties and Participants had the opportunity to submit comments on the draft RFP. The Company then revised the RFP after considering the comments received and filed a final RFP for PUC review and approval. Subsequently, the PUC issued Order No. 37592 which among other things, directed the Companies to further collaborate with the Parties and Participants. As a result, the Company held several meetings with the Parties and Participants, which helped inform further updates to the RFP that were reflected in the Company's submittal of an updated RFP to the PUC.

Additionally, the Company will hold a prerecorded webinar for CBRE in accordance with the Competitive Bidding Framework for prospective Proposers to learn about the provisions and requirements of this RFP. This prerecorded webinar will be posted to the Company's website within one week of the issuance of the final RFP.

Prospective Proposers may also submit 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 Mid-Tier SFC. 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 1.7.5, 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. Proposals must clearly state all capabilities, functionality and characteristics of

the Project; must clearly detail plans to be performed; must explain applicability of information; and must provide all referenced material if it is to be considered during the Proposal evaluation. Referencing previous RFP submissions or projects for support will not be considered. Proposers should not assume that any previous RFP decisions or preferences will also apply 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) status conference participation; (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 agent[13] 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.

[13] 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.

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 CBRE 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:

- 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 for Large Projects will be in the form of the RDG PPA, attached as Appendix L. Appendix L-1 and Appendix L-2 are Project Specific Addenda for Large Projects located on O‘ahu or Maui/Hawai‘i Island, respectively. In addition, Appendix L-4 is provided for use if the Project is designed with a single inverter system such that the PV System and BESS are “DC Coupled.”

3.8.2 The Power Purchase Agreement for proposals selected under this RFP for Mid-Tier Projects will be in the form of the pre-approved Mid-Tier SFC, attached as Appendix K. The Mid-Tier SFC will be reviewed and pre-approved by the PUC, and as a result will not be negotiable. Appendix K-1 and Appendix K-2 are Project Specific Addenda for Mid-Tier Projects located on O‘ahu or Maui/Hawai‘i Island, respectively. In addition, Appendix K-5 is provided for use if the Project is designed with a single inverter system such that the PV System and BESS are “DC Coupled.”

3.8.3 If selected, any Affiliate Proposers will be required to enter into an RDG PPA or Mid-Tier SFC with the Company.

3.8.4 In general, under the RDG PPA and Mid-Tier SFC, payment to the Seller consists of a Lump Sum Payment component to cover the costs of the Project. In return for the Lump Sum Payment component, 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.

3.8.5 The Performance Standards identified in Section 2.1 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, these Performance Standards are non-negotiable. Proposers may propose modifications to other sections of the RDG PPA 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, 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.

3.8.5.1 General comments, drafting notes and footnotes such as "parties to discuss," and reservation of rights to propose modifications at a later time are unacceptable and will be considered non-responsive. Proposed modifications to the RDG PPA shall be limited to targeted revisions to, and not deletions or waivers of, the agreement's terms, conditions, covenants, requirements or representations. Proposed modifications will also 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 Electronic Procurement Platform for the RFP. Any proposed modifications to the RDG PPA will be subject to negotiation between the Company and the Final Award Group and should not be assumed to have been accepted either as a result of being selected to the Final Award Group or based on any previously executed PPA. 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.

3.8.5.2 The Company has an interest in maintaining consistency for certain provisions of the RDG PPAs, 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.

3.8.6 Proposals that do not include specific proposed modifications to the attached RDG PPAs will be deemed to have accepted the RDG PPA 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 Mid-Tier SFC. 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 Mid-Tier SFC is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal as 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 The Proposer's Response Package must include the following for each Proposal (and variation):

- **Lump Sum Payment ($/year):** Payment amount for full dispatchability of the Facility. Payment will be made in monthly increments.

3.9.5 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 for determining liquidated damages is 50% and shall be a non-negotiable percentage in the PPA.

3.10 Project Description

3.10.1 Proposals are required to provide a Net Energy Potential ("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%. For Paired Projects, the energy generated by the Facility in excess of Company dispatch but below the Facility's Allowed Capacity that is stored in the Facility's BESS component and can later be discharged to the POI considering the BESS Contract Capacity and Maximum Rated Output should be included in the NEP RFP Projection. Any energy in excess of what is allowed to be delivered to the POI and would exceed the BESS Contract Capacity shall be excluded from the Net Energy Potential. To achieve this objective, the BESS Contract Capacity (MWh) must be at least four times the MW Capacity of the installed PV Capacity. Any energy generated outside of the proposed Facility that is used to charge the BESS 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 BESS (round trip efficiency losses) should be excluded from the NEP RFP Projection, but the NEP should consider auxiliary loads in

developing the value relative to the POI. The NEP RFP Projection will be used in the RFP evaluation process and therefore Proposers will be held to their provided value.[14]

3.10.2 Paired Project Proposals are required to provide a single value Round Trip Efficiency ("RTE"), measured at the Point of Interconnection, that the Facility's BESS component is required to maintain throughout the term of the RDG PPA or Mid-Tier SFC. This RTE value will be used in the RFP evaluation process and therefore Proposers will be held to this provided value as it will become the RTE Performance Metric in Section 2.10 of the RDG PPA or Mid-Tier SFC. Please review the model PPA for potential liquidated damages assessed against Seller if the BESS does not maintain the required RTE. The RTE is further specified in Appendix B Section 2.

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 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 landowner and must secure Site Control with such landowner prior to submitting a Proposal. Land RFI information is available to interested parties who sign the CBRE NDA. The Land RFI is further described in Appendix F.

[14] If a Proposal is selected to the Final Award Group and an RDG PPA or Mid-Tier SFC 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 or Mid-Tier SFC, 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 or Mid-Tier SFC 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 or Mid-Tier SFC. See Article 2 and Attachment U of the RDG PPA or the Mid-Tier SFC.

Proposers are not required to select a Site identified in the Land RFI and as noted above may propose any Site for a Project.

3.12 Confidentiality

3.12.1 Each prospective IPP or Affiliate Proposer must submit an executed CBRE NDA in the form attached as Appendix E by the IPP and Affiliate Proposal Due Date specified in the RFP Schedule in Section 3.1, Table 2. The form of the CBRE NDA is not negotiable and must be applicable to the Company whose System the Proposal is intended to connect to. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed CBRE NDA will be considered. NDAs that were fully executed for prior non-CBRE RFPs will not be accepted. 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 CBRE 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

3.13.1 Proposers with whom the Company enters into an RDG PPA or Mid-Tier SFC 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 Mid-Tier SFC. Cash, a parent guaranty, or other forms of security will not be accepted in lieu of the irrevocable standby letter of credit.

3.13.2 The Development Period Security and Operating Period Security identified in the RDG PPA or the Mid-Tier SFC are minimum requirements. Proposers shall not propose an amount lower than that set forth in the RDG PPA or the Mid-Tier SFC.

3.13.3 Each Proposer for a Large Project 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 which the Proposer is responsible in excess of the portion 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 PPA.

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 PPA or Mid-Tier SFC.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

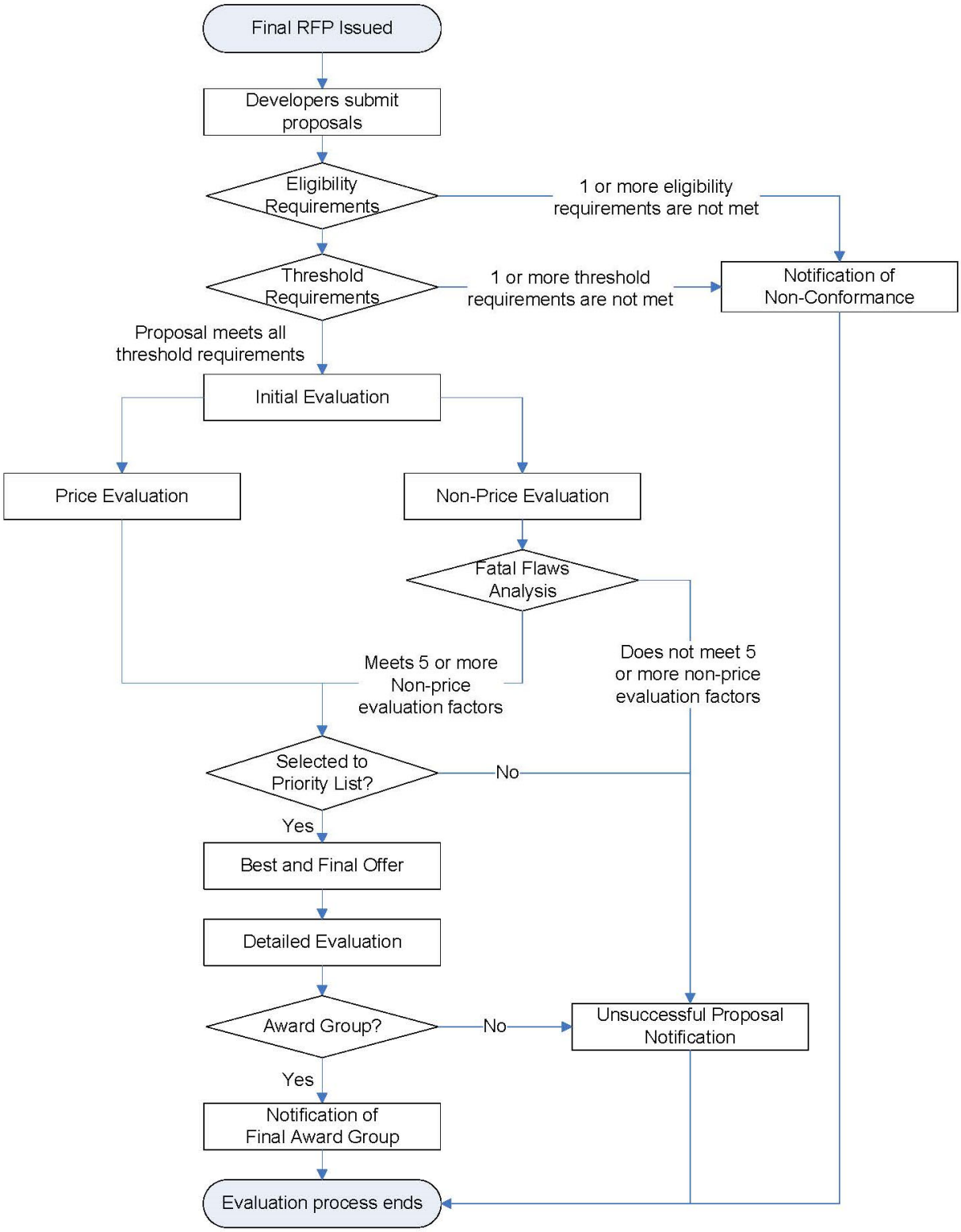
The Company will evaluate the Proposals of each island via separate island-specific evaluations. The Company will employ a multi-step evaluation process for each island. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process for each island.

Upon receipt of the Proposals, the Company will review each Proposal submission to determine if it meets the Eligibility Requirements and the Threshold Requirements. 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.[15] 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.[16] 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

[15] 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.
[15] The initial request will be offered three (3) business days to cure. Succeeding inquiries on the deficiencies will be offered cure periods deemed sufficient by the Company and Independent Observer.

provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

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 Proposer is not eligible to participate in this RFP if the Proposer, its parent company, or an affiliate of the Proposer has:
    - defaulted on a current contract with the Company, or
    - had a contract terminated by the Company, or
    - any pending litigation in which the Proposer has made claims against the Company.
- The Proposal, including required uploaded files, must be received on time via the Electronic Procurement Platform.
- The Proposal Fee must be received on or before the Proposal Due Date.
- 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 CBRE NDA and any other document required pursuant to this RFP.
- The Proposer must provide a Certificate of Vendor Compliance from the Hawai‘i Compliance Express dated and issued within 60 days of the date of Proposal submission (a certificate of good standing from the State of Hawai‘i Department of Commerce and Consumer Affairs and also federal and Hawai‘i state tax clearance certificates for the Proposer may be substituted for the Certificate of Vendor Compliance).
- The Proposal must not be contingent upon changes to existing county, state, or federal laws or regulations.
- The proposed Project must be located on O‘ahu, Maui or Hawai‘i Island.
- The Proposal must be for a PV project.
- The proposed Project must be 250 kW or larger.
- The proposed Projects PPA term length must be twenty (20) years.
- (**Maui** or **Hawai‘i Island)** Projects must interconnect to the Company’s System at the transmission (69 kV) or distribution level (12 kV or lower).
- (**O‘ahu** only) Projects must interconnect to the Company’s System at the transmission (138 kV), sub-transmission (46 kV) or distribution level (12 kV or lower).
- (**Maui** or **Hawai‘i Island)** Projects that interconnect to the Company’s System at the transmission level (69 kV) must include a BESS.
- Projects interconnecting at the distribution level (12 kV or lower) must not exceed 3 MW.
- The Project must be dedicated to LMI Subscribers with a minimum of 60% dedicated to LMI Customers as described in Section 1.2.3.
- 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), not located within a Tsunami

Evacuation Zone, and not located within the Hawaii Department of Land and Natural Resources flood map's flood zones A, AE, AEF, AH, AO, VE based on the Federal Emergency Management Agency's Digital Flood Insurance Rate Maps.

- The Proposal must specify a GCOD no later than February 28, 2027.
- The Proposer shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.

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.

Proposals must provide explanations and contain supporting information demonstrating how and why the Project proposed 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:

1. **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, with the exception of rights-of-way or easements for the interconnection route, 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. As noted in Appendix B, Section 2.5.4, while land rights are not required with the Proposal for the interconnection route, the Proposal should thoroughly describe the interconnection route and as set forth in Appendix B, Section 2.5.5, the Proposal should identify any rights-of-way or easements that are required for access to the Site or for the interconnection route and describe the plan for obtaining such rights-of-way or easement, including the proposed timeline. 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 RDG PPA or Mid-Tier SFC ("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 an RDG PPA or Mid-Tier SFC and PUC approval as applicable),

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 RDG PPA or Mid-Tier SFC should the Proposal be selected to the Final Award Group.

2. **Performance Standards**: The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in Section 2.1 of this RFP. 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.

3. **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 as noted in Attachment B, Section 2.12.

4. **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., BESS 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.

5. **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. The Company has determined that for purposes of FASB ASC 842, a generation plus BESS facility will be treated as two separate measurements of account. For accounting purposes, the BESS portion (if applicable) will be treated as a lease, while the generation facility will not. As a result, no lease evaluation will be completed as part of the Proposal evaluation.

6. **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), plan for reporting construction schedules and activities which include resulting impacts (ex. traffic, noise, and dust) and mitigation plans beginning at least one month prior to the start of scheduled work, and a comprehensive communications plan which factors in monthly Project status updates. Hawaiian Electric will carefully review the Community Outreach Plans to ensure that outreach to area elected officials and known community leaders and organizations is documented and that the plan is tailored by community and

includes the outreach schedule, communication plans and required project information that will be shared in each engagement.

7. **Cultural Resource Impacts:** Proposers need to be mindful of the Project's potential impacts to historical and cultural resources. Proposers must 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 any identified cultural, historical, or natural resources in the area in question, and the reasonable protection of traditional and customary native Hawaiian rights in the affected area. Also, Proposers must have already contracted with a consultant with expertise in this field to begin a cultural impact plan for the Project.

8. Available **Circuit Capacity (**This criterion will only be applied to proposed Projects that intend to interconnect to Company's 138 kV or 46 kV system on **O'ahu,** or 69 kV system on **Maui** and **Hawai'i Island)**: The output capacity of the proposed Project must not exceed the available capacity of the circuit to which it will interconnect. This criterion is intended as a check to ensure that the proposed Project's net nameplate capacity, together with approved and existing projects, is within the available MW Capacity of the line or substation identified for interconnection. (see RFP Section 2.2.5)

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. For each island, 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.

4.4.1 Initial Evaluation of the Price Related Criteria

For the initial price analysis, a total of 600 points will be awarded. Price-related criteria will be based on the GCOD and an equivalent levelized program capacity. An equivalent

Levelized Program Capacity Price ($/MW) will be calculated for each Proposal based on information provided in the Proposal including the Lump Sum Payment ($/year) and the net nameplate capacity of the Facility (MW) defined in Section 3.9 of this RFP, and Section 2.0 of Appendix B of this RFP, respectively.

The eligible Proposal with the earliest GCOD will receive 50 points. All other eligible Proposals in that evaluation category will receive points of a proportionate reduction based on the difference between the earliest GCOD and latest acceptable GCOD (August 31, 2026), rounded by months. For example, if the earliest GCOD is March 1, 2024, that Proposal will receive 50 points. The total months between the earliest GCOD and latest acceptable GCOD then becomes 30 months. If another Proposal has a GCOD date of November 1, 2024, it is 8 months later than the earliest GCOD and will then receive $50 \times (1 - (8/30)) = 37$ points.

The eligible Proposal with the lowest Levelized Program Capacity Price will receive 550 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 Levelized Program Capacity Price exceeds the lowest Levelized Program Capacity Price. For example, if a Proposal's Levelized Program Capacity Price is ten percent (10%) higher than the lowest Levelized Program Capacity Price, the Proposal will be awarded 495 points (that is, 550 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal (including variations).

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 thirteen (13) non-price criteria categories set forth below:

1. Community Outreach
2. State of Project Development and Schedule
3. Performance Standards
4. Locational Value: Non-Wires Alternative (NWA) and Community Resilience
5. Commitment to Residential Subscriber Participation
6. CBRE Program
7. Environmental Compliance and Permitting Plan
8. Experience and Qualifications
9. Financial Strength and Financing Plan
10. RDG PPA Contract Proposed Modifications
11. Guaranteed Commercial Operations Date
12. Cultural Resource Impacts
13. Land Use and Impervious Cover

Each of the first six criteria – Community Outreach, State of Project Development and Schedule, Performance Standards, Locational Value: NWA and Community Resilience, Commitment to Residential Subscriber Participation, and CBRE Program – 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). A score of 3 means that a Proposal meets the minimum standard for that criteria.

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 does not meet the minimum standards level of at least five (5) non-price criteria will be disqualified given that the Proposal has failed to meet the required number of non-price factors that are indicative as to the general feasibility and operational viability of a proposed Project. Non-price criteria numbers 4, 5, 11, and 13 above will be excluded from the fatal flaws analysis.

The Company's 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 Company assumes 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:

1. **Community Outreach –** 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.

   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 more robust and customized the stakeholder list, meeting frequency, and commitments are defined in the plan, the higher the rating the Proposer will receive as part of the scoring and evaluation process. 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) Local labor and prevailing wage commitment. Proposers will be scored more favorably if their plan commits to at least 80% of non-supervisory construction and operations workers' hours associated with the construction or repowering of a Project will be paid at the prevailing wage equivalent under HRS Chapter 104 during all periods of construction. Proposers are also highly encouraged to hire qualified construction, operations, and maintenance works who reside in the county where the Project is being constructed, and the State of Hawaii, in that order, before hiring non-resident labor.
7) 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, including monthly Project status updates.

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 Company's community engagement expectation whereby all developers will be required to engage in community outreach prior to signing a PPA with the Company. This process is also outlined in RFP Section 5.3. Further information and instructions regarding expectations for the Community Outreach Plan are included as Attachment 4 and 5 to Appendix B.

2. **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, 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.

3. **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 Mid-Tier SFC. 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 Mid-Tier SFC and in this RFP. At a minimum, in addition to meeting the Performance Standards, the Proposal 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 on facilities that offer additional capabilities (e.g., Black-Start, Grid-Forming).

4. **Locational Value: Non-Wires Alternative and Community Resilience –** The Company has identified areas on the grid where the siting of a CBRE Project would support grid needs, non-wires alternatives and/or community resilience. Non-wires alternatives have been identified for areas with grid needs. For Projects that support non-wires alternatives, the capability to grid-charge is needed to reliably meet distribution capacity needs. For Projects to support community resilience, a BESS with grid-forming and black start capability is needed for the purposes of being able to energize any proposed community or "island" as a microgrid from a de-energized state. The black start capability is not needed to energize the entire grid. Proposals should provide a description of the critical infrastructure or community resilience hubs in proximate location to the proposed Project site that could benefit from the islanding capabilities of the proposed

Project. Proposers are encouraged to and will be scored more favorably for locating projects in the following:

- Areas with Distribution Grid Needs can be found in the Company's Locational Value Maps: https://www.hawaiianelectric.com/clean-energy-hawaii/integration-tools-and-resources/locational-value-maps/
  - Grid Service Definitions:
    - Distribution Capacity: A supply and/or a load modifying service that DERs provide as required via the dispatch of power output for generators and electric storage, and/or reduction in load that is capable of reliably and consistently reducing net loading on desired distribution infrastructure in response to Company Dispatch
    - Distribution Reliability: A load modifying or supply service capable of improving local distribution reliability under abnormal conditions in response to Company Dispatch
- Areas with identified community resilience that are more vulnerable to extended outages are:
  - **Maui**: Hana
  - **O'ahu**: Ko'olaupoko moku

5. **Commitment to Residential Subscriber Participation –** Proposals will be evaluated on the stated commitments of the Project's Subscriber Organization to residential Subscribers. All residential Subscribers must be LMI Customers. At a minimum, Subscriber Organizations will be required to set aside 60% of the Project's capacity for residential Subscribers. Proposers that commit to reserving a portion larger than 60% of their Project capacity for residential Subscribers will be given more favorable scoring.

6. **CBRE Program:** Proposals will be evaluated on several facets of the CBRE program being proposed.

    1) **Program Offering:** Proposals will be evaluated to give preference to program offerings that provide the most benefits to residential and LMI Customers. Financing options, upfront fees, payment over time, public funding options, and other creative approaches will be preferred along with programs that offer higher expected LMI Customer level savings, favorable payback periods and mechanisms, and other LMI Customer benefits. In addition, Proposals shall describe the extent to which LMI Subscribers will be financially responsible for the Facility's underperformance.

    2) **Marketing and Outreach Plans:** Proposals will be evaluated on the proposed strategies and methods to encourage LMI Customer and potential LMI Anchor Tenant participation, as well as the Proposer's plan to educate, inform, and stimulate the market in order to achieve their target

levels of participation of LMI and residential customers. Efforts may include community or community organization partnerships. Proposers must include details on Direct-to-consumer marketing strategies on how the Subscriber Organization will reach traditionally hard-to-reach LMI Customers.

3) **Subscriber Retention:** Proposals will also be assessed on the stated plans to acquire and retain a market that is historically less financially and socially stable than more affluent residential markets, including how turnover and churn will be handled as well as how participation targets will be maintained among a potentially less stable market segment.

4) **Program Experience:** Proposals will also be evaluated on Proposers documented success in reaching and retaining participation of LMI and residential customers in other community-based renewable energy programs.

7. **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 the applicable regulating agencies such as U.S. Fish and Wildlife and the State of Hawai‘i Department of Land and Natural Resources’ Division of Forestry and Wildlife, 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 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 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 Guaranteed Commercial Operations Date.

8. **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.

9. **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.

10. **RDG PPA Contract Proposed Modifications –** Proposers are encouraged to accept the contract terms identified in the RDG PPA in its entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the RDG PPA without edits or utilize the Mid-Tier SFC, which is non-negotiable and cannot be marked up as part of their Proposal, will receive a higher score and will be the only proposals that can achieve the highest scoring for this non-price evaluation criterion. 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 (see also Section 3.8). 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.

11. **Guaranteed Commercial Operations Date –** Proposers that are able to design for and commit to an earlier GCOD will be given more favorable scoring. Proposers will be held to the GCOD identified in their Proposal. The GCOD will be a Guaranteed Milestone and will be inserted without amendment into the RDG PPA or Mid-Tier SFC, as applicable.

12. **Cultural Resource Impacts –** Proposers need to be mindful of the Project's potential impacts to historical and cultural resources. Proposers should have identified (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 any identified cultural, historical, or natural resources in the area in question, and the reasonable protection of traditional and customary native Hawaiian rights in the affected area.

    Also, Proposers should have already contracted with a consultant with expertise in this field to begin a cultural impact plan for the Project. Proposals will be evaluated on the commitment to addressing cultural resource impacts on their Project, if any. Therefore, in order to be evaluated for this criterion, Proposers should, at least, provide the following documentation, as applicable: (1) Proposer's or its consultant's experience with cultural resource impacts on past projects; (2) the status of their cultural impact plan. Proposals will be evaluated on the extent to which their cultural impact plan has been developed,

and preference will be given to Proposals that are further along in the process, including but not limited to, whether a mitigation/action plan has been provided that addresses any identified cultural resource issues, or a date for when such a plan will be available has been identified, or any portions of such plan have been completed.

13. **Land Use and Impervious Cover** - The Company encourages Proposers to site Projects on developed lands and to preserve open spaces and agricultural lands. Proposers will be scored more favorably for locating Projects on:

    - Land with greater existing impervious cover;[17]
    - Land zoned industrial or industrial mixed use, commercial or business mixed use or apartment mixed use under the State Land Use Classification with a preference in that order; or
    - Land deemed as reclaimed, such as Brownfield.[18]

    In addition, projects that minimize the net increase of impervious cover of a Project site will be scored more favorably.

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. For each island, 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.

The Company will determine a Priority List for each island from the highest scoring Proposals. The Company will develop the Priority Lists in consultation with the Independent Observer. The Company reserves the right, in consultation with the Independent Observer, to limit the projects allowed for further consideration in the initial evaluation; for example, to projects that fall within 15% of the highest Levelized Program Capacity Price. Selection to a Priority List does not assure an eligible Project's inclusion in the selection of a 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 the Priority Lists. Proposers selected to the Priority Lists will have the opportunity to update

[17] As defined by the EPA (8 Tools of Watershed Protection in Developing Areas | Watershed Academy Web | US EPA), "the sum total of all hard surfaces within a watershed including rooftops, parking lots, streets, sidewalks, driveways, and surfaces that are impermeable to infiltration of rainfall into underlying soils/groundwater."
[18] As defined by the EPA (Overview of EPA's Brownfields Program | US EPA), "a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

(downward only)[19] the pricing elements in their Proposal in order to improve the competitiveness of their Proposal prior to being further assessed in the Detailed Evaluation phase. At this point in the process, updates may only be made to the following pricing element:

- Lump Sum Payment ($/year) amount

Proposers will not be allowed to increase their price[20] 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.[21]

4.7 Detailed Evaluation

The Best and Final Offers of the Priority List Proposals will be further assessed in the Detailed Evaluation to identify the Proposals selected to a Final Award Group.

For each island, the detailed evaluation process will consist of an assessment of combinations of Proposals from the respective island's Priority List. Using the current forecast and planning assumptions developed for the Company's Integrated Grid Planning process in Docket No. 2018-9-0165, a capacity expansion model will be used to determine a simplified proxy of benefits and value of proposals of the CBRE portfolio based on the process utilized in the DER docket (Docket No. 2019-0323) (i.e., a resource plan with and without the CBRE portfolio). Proposals will be compared to this proxy value to determine if the proposed projects will provide cost effective value to customers. This evaluation will incorporate estimated costs for Company-Owned Interconnection Facilities and system upgrades that will be paid for by the utility as described further in Appendix H.

Due to computational limitations, all Proposals from a Priority List may not be evaluated simultaneously. The ranking developed in the Initial Evaluation can be used to screen the Proposals in the Detailed Evaluation to those that provide the highest potential benefit to the system.

[19] 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.).
[20] 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.
[21] 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.

The proxy evaluation will evaluate the benefits and costs of integrating the CBRE portfolio onto the Company's System which includes:

1. The cost to dispatch the CBRE portfolio and the energy under the RDG PPA or Mid-Tier SFC;

2. The fuel cost savings (benefits) and any other direct savings (Subscriber Organization savings from dispatchable fossil fuel savings, where applicable) resulting from the displacement of generation, including consideration of round-trip efficiencies for facilities with a BESS; and

3. The estimated increase (or decrease) in operating cost, if any, incurred by the Company to maintain system reliability.

4. The cost of imputed debt, if applicable.

As noted, if applicable, 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 for each island, the Company will perform load flow analyses to determine if certain Projects or combinations of Projects introduce 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, Projects that are in close proximity with each other could introduce additional circuit constraints. The Projects selected must not have any additional constraints imposed based on the Load Flow Analysis to advance to a Final Award Group. However, the Company reserves the right, in consultation with the Independent Observer, to allow minor modifications (i.e., downsize project) 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 consider the implementation of a combination of Projects, including consideration of the geographic diversity, program implementation, resource diversity, interconnection complexity, and flexibility and latitude of operation control of the Projects.

The Company may complete additional analyses of Projects, in consultation with the Independent Observer, if the time and capability exist to perform such analyses.

Projects interconnecting to distribution circuits may be subject to the Technical Review process of Rule 14H. The Company may consider a Project's performance through this process in the Detailed Evaluation.

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 for each island. Mid-Tier Projects selected to a Final Award Group will execute a Mid-Tier SFC with the Company in the form of Appendix K. Large Projects, and any Project interconnecting at the transmission level, selected to a Final Award Group will enter into RDG PPA (in the form of Appendix L) negotiations. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in a Final Award Group.

Selection to a Final Award Group and/or entering into contract negotiations does not guarantee execution of an RDG PPA or Mid-Tier SFC.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that has a material effect on any of the evaluation processes, including selection of a Priority List or a Final Award Group, the Company reserves the right, at any time prior to submission of the PPA Application with the PUC, 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 a 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 a Priority List to determine (1) if another proposal should be added to a Final Award Group; or (2) if the remaining proposals in a Final Award Group should remain unchanged.

Chapter 5: Post Evaluation Process

5.1 Project Interconnection Process

5.1.1 Interconnection Modeling Process

A summary of the model requirements and impact study scope can be found in Appendix B, Attachment 6.

For all projects starting from 250 kW and less than 1 MW in size, a completed Project Interconnection Requirement Study Data Request worksheet, which can be found in Appendix B, Attachment 2, all project diagram(s), models for equipment and controls (see Appendix B, Attachments 3 and 6), list(s) identifying components and respective files (for inverters and power plant controller), and complete documentation with instructions must be submitted within 30 days after selection to the Final Award Group.

For all Projects 1 MW or larger, within 30 days after selection to the Final Award Group, final submissions, to incorporate any updates to the information submitted in response to Section 2.3.1, shall be made, and shall be in compliance with the Project data and modeling requirements described below.

If required for the project (see Appendix B, Attachment 6), 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 performance requirements. These must be checked for functionality by the Proposer or its vendors and consultants prior to submission to the Company. Similarly, fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company. Overlaid validation plots of PSSE Generic models, PSSE User models, and PSCAD models shall be submitted as described in the Project Interconnection Data Request worksheets to ensure compatible responses from each model.

If the Company determines that an IRS is not required, the Company will provide an Interconnection Modeling Letter Agreement for each selected Project greater than or equal to 1 MW in size, with a statement of required deposit for individual work for: (a) a technical model checkout for each project, and (b) any considerations that are specific to a particular project and location. 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 if their submission requirements are deemed incomplete for the lack of requested models and validation plots.

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, 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 consideration.

5.1.2 Interconnection Requirements Study Process

The Detailed Evaluation process or Appendix III of Rule 14H shall determine the need for an IRS. Upon notification of selection to a Final Award Group, and subject to Rule 14H, the Company will provide an IRS Letter Agreement (in lieu of an Interconnection Modeling Letter Agreement) for each selected project that will require an IRS, with a statement of required deposit for individual and prorated work as part of an IRS Scope for: (1) 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; and (2) a Facility Study that includes the Interconnection cost and schedule, including cost of any required system upgrades. After proposals and models are submitted within 30 days after selection to a Final Award Group, 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 if their submission requirements are deemed incomplete for the lack of requested models and validation plots.

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, 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 consideration.

Proposers shall be responsible for the cost of the IRS, under separate agreements for the System Impact Study and the Facility 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. Upon reviewing the results of the IRS, Detailed Evaluation, or Technical Review process, if required, pursuant to Rule 14H, Appendix III, Proposers will have the opportunity to declare the RDG PPA (see RDG PPA Section 12.4) or Mid-Tier SFC 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.

5.2 Contract Negotiation Process

Within five (5) business days of being notified by the Company of its intent to enter into RDG PPA contract negotiations or execute a Mid-Tier SFC, Proposers selected for a 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 a Final Award Group will be required to keep their Proposal valid through the award period. RDG PPA contract negotiations will take place in parallel with the IRS process.

The Company intends to execute and file the RDG PPA with the PUC for approval and later amend the RDG 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 RDG PPA (Community Outreach Plan) and Section 28 of the Mid-Tier SFC (Community Outreach) do not represent the only community outreach and engagement activities that can or should be performed by a Proposer.

The Company will publicly announce the Final Award Groups no more than five (5) business days after the notification is given to Proposers who are selected to a Final Award Group. Selected Proposers shall not disclose their selection to the public before the Company publicly announces the Final Award Group selections.

On the next business day after the Company notifies a Proposer they were selected, each Proposer shall provide the Company with links to their Project website, which the Company will post on the Company's website. Each Proposer will launch a Project website that will go-live on the day the Company publicly announces the Final Award Group selections. Information on what should be included on the Project website is identified in Appendix B.

Within five (5) business days of notification of selection to a Final Award Group, Proposers must provide 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, plan for reporting construction related updates, labor and prevailing wage commitment, and a comprehensive communications plan which factors in monthly Project status updates. The Proposer's Community Outreach Plan shall be a public document identified on the Proposer's Project website for the term of the PPA and made available to the public upon request. As an option, Proposers may provide their updated Community Outreach Plan and website information to the Company for review and feedback. If provided at least 30 days prior to the dates required, the Company will endeavor to review such information and provide feedback on the information before it is made available to the public.

Further information and instructions regarding expectations for the Community Outreach Plan can be found in Appendix B, Attachments 4 and 5.

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; (iii) an update regarding the Proposer's cultural impact plan, including any findings made and mitigations identified to-date as part of the Archaeolological Literature Review and Field Inspection Report discussed in Section 5.7; and (iv) for Large Projects, 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 and for inclusion on the Proposer's website. The Proposer shall collect all public comments, and then provide the Company copies of all comments received in their original, unedited form. If an RDG 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 has provided Proposers with detailed instructions regarding the community meeting requirement after the selection of the Final Award Groups (Attachment 4 to Appendix B). (For example, notice will be published in county and 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 RDG PPA or Mid-Tier SFC 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 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) for Large Projects are selected for a 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 RDG 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 Greenhouse Gas Analysis Letter 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 RDG 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 RDG PPA is reasonable in light of the potential for GHG emissions, and whether the terms of the RDG PPA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval

Any signed RDG PPA for Large Projects or any Project interconnecting at the transmission level resulting from this RFP is subject to PUC approval as described in the RDG PPA, including Article 12 and Section 29.20 thereof. Selected Mid-Tier Projects will execute a Mid-Tier SFC with the Company which will not be subject to further regulatory review and approval.

5.6 Facility In-Service

In order to facilitate the timely commissioning of the projects selected through 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 may lose its place in the queue, with the Company retaining the flexibility to adjust scheduling as it sees fit. 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 RDG PPA or Mid-Tier SFC milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the RDG PPA or Mid-Tier SFC.

5.7 Archaeological Literature Review and Field Inspection Report

All Projects selected to a Final Award Group must, within five (5) months of selection, complete and submit to the Company an Archaeological Literature Review of existing cultural documentation filed with the State Historic Preservation Division and a Field

Inspection Report. For any archaeological and/or historical sites identified in the project area, the Proposer must provide a plan for mitigation from an archaeologist licensed in the State of Hawai‘i. This mitigation plan must be posted on the Project website for transparency.

Any results available at the time of the Community Outreach meeting required prior to PPA execution discussed in Section 5.3, must be presented at that time, along with an update regarding the developer’s cultural impact plan.

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix A – Definitions

Hawaiian Electric

"Affiliate" means any person or entity that possesses an "affiliated interest" in a utility as defined by section 269-19.5, Hawai'i Revised Statutes ("HRS"), including a utility's parent holding company but excluding a utility's subsidiary or parent which is also a regulated utility.

"Allowed Capacity" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"Battery Energy Storage System" or "BESS" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"BESS Contract Capacity" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"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.

"CBRE NDA" means the Mutual Confidentiality and Non-Disclosure Agreement attached to this RFP as Appendix E.

"Code of Conduct" means the code of conduct approved by the PUC in Docket No. 03-0372 (Decision and Order No. 23614, August 28, 2007) with respect to a Self-Build Option. An updated code of conduct was submitted to the PUC in Docket No. 2015-0389 on July 9, 2020.

"Code of Conduct Procedures Manual" or "Procedures Manual" means the manual approved by the PUC, which was put in place to address and to safeguard against preferential treatment or preferential access to information in a Hawaiian Electric, Maui Electric, or Hawai'i Electric Light RFP process. The Procedures Manual is attached as Appendix C to this RFP.

"Commercial Operations" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"Community Outreach Plan" is a community outreach and communication plan described in Section 4.3 and 4.4.2 of this RFP.

"Companies" means Hawaiian Electric Company, Inc., Maui Electric Company, Ltd., and Hawai'i Electric Light Company, Inc., collectively.

"Company" means Hawaiian Electric Company, Inc., Maui Electric Company, Ltd., or Hawai'i Electric Light Company, Inc., each a Hawai'i corporation.

"Company-Owned Interconnection Facilities" has the meaning set forth in Section 1.a of Attachment G of the RDG PPA and Section 1.A of Attachment G of the Mid-Tier SFC.

"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.

"DC Coupled Term Sheet" means the Term Sheet for Large CBRE DC Coupled Projects (PV+BESS) which is attached as Appendix L-4, and summarizes the revisions that will be made to the RDG PPA for Large Projects with a single inverter system such that the PV system and BESS are "DC Coupled."

"Development Period Security" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"Dispatchable" means the ability to turn on or turn off a generating resource at the request of the utility's system operators, or the ability to increase or decrease the output of a generating resource from moment to moment in response to signals from a utility's Automatic Generation Control System, Energy Management System or similar control system, or at the request of the utility's system operators.

"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.

"Eligible Proposals" means Proposals that meet both the Eligibility and Threshold Requirements.

"Energy Contract Manager" is the primary Company contact for each island in this RFP.

"Evaluation Team" means agents of the Company who evaluate Proposals.

"Facility" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"Facility Study" means a study to develop the interconnection facilities cost and schedule estimate including the cost associated with the design and construction of the Company-owned interconnection facilities.

"Final Award Group" means the group of Proposers selected by the Company from a Priority List, with which the Company will begin contract negotiations, based on the results of the Company's detailed evaluation.

"Greenhouse Gas" or "GHG" are gases that contribute to the greenhouse gas effect and trap head in the atmosphere.

"Guaranteed Commercial Operations Date" or "GCOD" means the date by which the Proposer guarantees that the Facility will first achieve Commercial Operations.

"Hawai'i Electric Light" means Hawai'i Electric Light Company, Inc., a Hawai'i corporation.

"Hawaiian Electric" means Hawaiian Electric Company, Inc., a Hawai'i corporation.

"Hawaiian Electric Companies" or "Companies" means Hawaiian Electric Company, Inc. and its subsidiaries, Hawai'i Electric Light Company, Inc. and Maui Electric Company, Limited.

"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.

"Independent Observer" has the meaning set forth in Section 1.4 of this RFP.

"Independent Power Producer" or "IPP" means an entity that owns or operates an electricity generating facility that is not included in the Company's rate base.

"Interconnection Facilities" means the equipment and devices required to permit a Facility to operate in parallel with, and deliver electric energy to, the Company System (in accordance with applicable provisions of the Commission's General Order No. 7, Company tariffs, operational practices, interconnection requirements studies, and planning criteria), such as, but not limited to, transmission and distribution lines, transformers, switches, and circuit breakers. Interconnection Facilities includes Company-Owned Interconnection Facilities and Seller-Owned Interconnection Facilities.

"Interconnection Requirements Study" or "IRS" means a study, performed in accordance with the terms of the IRS Letter Agreement, to assess, among other things, (1) the system requirements and equipment requirements to interconnect the Facility with the Company System, (2) the Performance Standards of the Facility, and (3) an estimate of interconnection costs and project schedule for interconnection of the Facility.

"kV" means kilovolt.

"Land RFI" refers to a Request for Information activity conducted by the Company to identify interested parties willing to make land available for utility-scale renewable energy projects and gather relevant property information.

"Large Project" means a project greater than 5 MW on O'ahu, and, in the LMI RFP only, greater than 2.5 MW on Maui and Hawai'i Island or any project connecting at the transmission level.

"Levelized Program Capacity Price" means a calculation ($/MW) used for comparison of Proposals based on information provided in the Proposal submission in this RFP.

"LMI Anchor Tenant" is as defined in Tariff Rule No. 29 in Appendix J.

"LMI Subscriber" means either a LMI Customer or LMI Anchor Tenant as defined in Tariff Rule No. 29 in Appendix J.

"Low- and Moderate-Income Customer" or "LMI Customer" is as defined in Tariff Rule No. 29 in Appendix J.

"Lump Sum Payment" has the meaning set forth in the RDG PPA or Mid-Tier SFC. It may also be referred to as a monthly Lump Sum Payment to reflect the portion of the payment made each month.

"Maui Electric" means Maui Electric Company, Ltd., a Hawai'i corporation.

"Maximum Rated Output" has the meaning set forth in the RDG PPA or Mid-Tier SFC.

"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.

"Mid-Tier Project" means a project between 250 kW and 5 MW, inclusive, on O'ahu and between 250 kW and 2.5 MW, inclusive, on Maui and Hawai'i Island.

"Mid-Tier Standard Form Contract" or "Mid-Tier SFC" means the pre-approved standard form contract that will be used for projects between 250 kW and 5 MW, inclusive, on O'ahu and between 250 kW and 2.5 MW, inclusive, on Maui and Hawai'i Island, in the form of Appendix K of this RFP.

"MW" means megawatt.

"MWh" means megawatt hour.

"NEP" means Net Energy Potential.

"NEP RFP Projection" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"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. Non-Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.

"O&M" means operation and maintenance.

"Operating Period Security" has the meaning set forth in Section 14.4 of the RDG PPA and Mid-Tier SFC.

"Paired Projects" means a Project proposed that incorporates both an energy generation component and an energy storage component as part of its Facility.

"Performance Standards" means the various performance standards for the operation of the Facility to the Company as set forth in Section 3 of Appendix B, as such standards may be revised from time to time pursuant to Article 23 of the RDG PPA or the Mid-Tier SFC, and as described in Chapter 2 of this RFP.

"Point of Interconnection" or "POI" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"Power Purchase Agreement" or "PPA" means an agreement between an electric utility company and the developer of a renewable energy generation facility to sell the power generated by the facility to the electric utility company.

"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. Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.

"Price for Purchase of Electric Energy" is the amount that the Company will pay the Seller for electric energy delivered to the Company in accordance with the terms and conditions of the RDG PPA on a monthly basis as described in Attachment J. This payment will be calculated in terms of dollars per MWh.

"Priority List" means the group of Proposals for each island selected by each Company as described in Section 4.5 of this RFP.

"Project" means a Facility proposed to the Company by a Proposer pursuant to this RFP.

"Proposal" means a proposal submitted to the Company by a Proposer pursuant to this RFP.

"Proposal Due Date" means the date stated in RFP Schedule for IPP and Affiliate Proposals of this RFP.

"Proposal Fee" means the non-refundable fee for each proposal submitted as set forth in Section 1.8 of this RFP.

"Proposer" means a person or entity that submits a Proposal to the Company 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.

"PUC" means the State of Hawai'i Public Utilities Commission.

"RDG PPA" means the Model PV Renewable Dispatchable Generation Power Purchase Agreement that will be used for projects greater than 5 MW in size on O'ahu, and, in the LMI RFP only, for projects greater than 2.5 MW on Maui and Hawai'i Island, attached as Appendix L to this RFP.

"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.

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

"RFP Schedule" means the schedule set forth in Table 2, Section 3.1 of this RFP.

"Round Trip Efficiency" or "RTE" has the meaning set forth in the RDG PPA.

"Self-Build Option" or "SBO" means a Proposal submitted by the Company that is responsive to the resource need identified in the RFP, as required by Section VI of the Framework.

"Self-Build Team" means agents of the Company who develop Self-Build Option proposals.

"Seller" means the entity that the Company is contracting with, as set forth in the RDG PPA and Mid-Tier SFC.

"Seller-Owned Interconnection Facilities" has the meaning set forth in the RDG PPA and Mid-Tier SFC.

"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.

"Site Control" has the meaning set forth in Section 4.3 of this RFP.

"System" means the electric system owned and operated by Hawaiian Electric, Maui Electric, or Hawai'i Electric Light on O'ahu, Maui, or Hawai'i Island, respectively, (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.

"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 RDG PPA and Mid-Tier SFC.

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

ON O'AHU, MAUI, AND HAWAI'I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix B – Proposer's Response Package / Project Interconnection Data Request

Hawaiian Electric

1.0 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. Information submitted in the wrong location/section or submitted though communication means not specifically identified by the Company will not be considered by the Company.

Proposers must provide a response for every item. If input/submission items in the RFP are not applicable to a specific Proposer 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.

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

There will be three RFP events on Sourcing Intelligence (Electronic Procurement Platform), one each for O'ahu, Maui, and Hawai'i Island. To access an RFP event, the Proposer must register as a "Supplier"[1] on Sourcing Intelligence. One Proposal may be submitted to each RFP event with each Supplier registration. Minor variations, as defined in Section 1.8.2 and 1.8.3 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 Proposal. Two variations of a Proposal, one variation of which is the base variation of the Proposal, may be submitted together as a Proposal by following the instructions outlined in this Appendix (see Section 4 below). If the Proposer chooses to submit more than one Proposal for an individual RFP event, the Proposer must register as a new "Supplier" on Sourcing Intelligence for each additional Proposal.

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

Each registration will require a unique username, unique Email 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. The unique Email address used to create the PowerAdvocate account does not necessarily have to match the Email address specified in Section 2.2.1 below. For example, if the Proposer is submitting multiple Proposals, all of the Proposer's Proposals could specify the same primary point of contact Email address if that is what the Proposer requests contact through for all their proposals.

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 Email through the RFP Email Address set forth in Section 1.6 of the RFP. The Email request must list the Company Name field and username under which the Proposer has registered with PowerAdvocate. If the Proposer plans to submit multiple Proposals to an individual RFP event and has registered multiple accounts in accordance with the instructions above, the Email request must contain the Company Name field and username for each account that will be used to submit the Proposals. After being added to the event, 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, PowerAdvocate Users Guide (RFP Appendix D), 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 Email (support@poweradvocate.com).

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

Once an RFP event is opened, registered Proposers will have online access to general notices and RFP-related documents via the Electronic Procurement Platform. Proposers should also monitor the RFP Website throughout the RFP event.

1.2 PROPOSAL SUBMISSION PROCEDURES

An Email notification will be sent to all registered Proposers 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.
- Note that "3. Commercial Data:", "4. Technical Data:", and "5. Pricing Data:" tabs are NOT USED for this event.

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

1. Proposers must upload their Proposal files, including all required forms and files, to submit a complete Proposal. All files must be uploaded before the Proposal Due Date (RFP Section 3.1, Table 2, Item 9).

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. A 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. (example: AceEnergy_P1.pdf)

3. Proposal information that cannot be easily consolidated into the PDF file 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** (e.g., "See AceEnergyP1V2_2.5_SiteControlMap.kmz"). 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_SiteControlMap.kmz
    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. (Any zipped files must still adhere to the naming directions in #3 above.) 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. Do not upload any files prior to the issuance of the Final RFP.

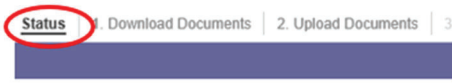
5. The Company will not be responsible for technical problems that interfere with the upload or download of Proposal information. Support is available to answer technical questions about PowerAdvocate's Sourcing Intelligence from 8 AM to 8 PM Eastern Time (2 AM to 2 PM Hawai'i Standard Time when daylight savings is in effect) Monday to Friday, except for Holidays posted on the PowerAdvocate website, both by phone (857-453-5800) and by Email (support@poweradvocate.com).

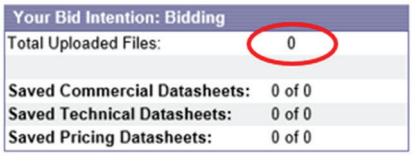
6. Proposers are strongly encouraged to start early and avoid waiting until the last minute to submit the required information. Proposers are allowed to add, modify, and/or delete documents that have been previously submitted any time prior to the event close deadline. For clarity, it is the Proposer's responsibility to ensure a complete Proposal is uploaded into PowerAdvocate before the Proposal Due Date.

7. Any questions or concerns regarding the RFP, may be submitted to the Company Contact via the RFP Email address provided in Section 1.6 of the RFP. Per RFP Section 1.4.2, the Independent Observer will monitor messages within the bid events. Proposers are responsible for following instructions and uploading documents in their appropriate locations. Documents uploaded in the wrong tab will not be considered by the Company.

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:





As stated above in Section 1.2, nothing should be uploaded to the Commercial, Technical or Pricing Datasheet tabs. Documents uploaded there will not be included in your Proposal submission.

1.3.1 **Proposal Fee Delivery Information.** Provide the Proposal Fee submission information for this Proposal. Include:

- The Date the Proposal Fee was sent.
- The delivery service used and the tracking number for the parcel.
- The U.S.-chartered bank name that issued the cashier's check and the check number.

2.0 PROPOSAL (BASE VARIATION) SUMMARY TABLE

Base variation Proposal Summary. If proposal variations are submitted, any changes to the summary information for such variations must be specifically identified in a similar table placed in Sections 4.2 of this Appendix, as applicable.

To be filled out in its entirety:

1	**Proposer Name (Company Name)**	
2	**Parent Company/Owner/Sponsor/Business Affiliation/etc.**	
3	**Project Name**	
4	**Net nameplate capacity** (MW)[2]	
4a	**Installed nameplate capacity: the aggregate sum of the net nameplate active power capabilities of all generator and converter equipment (i.e. storage) installed.**	
5	**Proposed Facility Location, Street Address if available, or what City/Area on the island is it near**	
6	**TMK(s) of Facility Location** (use 9-digit TMK format)[3]	
7	**Point of Interconnection's Circuit Name**	
8	**Coordinates for Point of Interconnection** (use decimal degrees)[4]	
9	**Net Energy Potential (NEP) Projection for the Facility** (MWh)	
10	**Lump Sum Payment** ($/Year)	
11	**Does Project include an Energy Storage Component?** (Yes/No)	
	If the Project includes an Energy Storage Component:	
11a	**Project Energy Storage Technology**	

[2] A Project's net nameplate capacity is the net maximum instantaneous output (MWac) of the Facility at the point(s) of interconnection, whether that maximum is based on: nameplate power rating of energy generating equipment sizing; expected losses in delivery of power to the point(s) of interconnection; and/or any project control system involved in managing the delivery of power to the point(s) of interconnection. This value, subject to verification by the Company, will determine, how a project is evaluated relative to the terms and requirements of the RFP, including, but not limited to: classification as a Mid-Tier or Large Project, ability to interconnect to a specified circuit, impact to circuit hosting capacity, and validation of the maximum output levels used to calculate the NEP RFP Projection. For the purposes of calculating the NEP RFP Projection it should be assumed all energy is being delivered directly to the point(s) of interconnection from the renewable resource as it is generated and never in excess of the Project's capacity, independent of the existence of any storage device. In the applicable PPA, this value will be the default Contract Capacity.

[3] 9-digit Tax Map Key format: Island Number (1 digit); Zone Number (1 digit); Section Number (1 digit); Plat Number (3 digits, add leading zeros if less than 3 digits); Parcel Number (3 digits, add leading zeros if less than 3 digits).

[4] Decimal degrees (YY.YYYYYY, -XXX.XXXXXX) latitude and longitude coordinates of the Point of Interconnection for the project. If there is more than one interconnection point, specify each.

11b	**AC or DC interconnected with the source energy resource**	
11c	**Energy Storage Capability for the Facility** (MW and MWh)	
11d	**Is the Project capable of being 100% charged from the grid after the 5 year ITC recapture period?** (Yes/No)	
11e	**Is the Project grid-forming and black start capable?** (Yes/No)	
12	**Proposal Guaranteed Commercial Operations Date** (MM/DD/YYYY)	
13	**The Proposer hereby certifies that the Project meets all performance attributes identified in Section 2.1 of the RFP?** (Yes/No)	
14	**The Proposer hereby certifies that the Proposal (including its pricing elements) is not contingent upon changes to existing County, State or Federal laws or regulations.** (Yes/No)	
15	**The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the applicable Model RDG PPA or Model Mid-Tier SFC.** (Yes/No)	
16	**The Proposer hereby certifies under penalties of perjury that this Proposal has been made in good faith and without collusion or fraud with any other person. As used in this certification, the word "person" shall mean any natural person, business partnership, corporation, union, committee, club, or organization, entity, or group of individuals.** (Yes/No)	
17	**The Proposer hereby certifies that the Proposer, its parent company, or any affiliate of the Proposer has not either defaulted on a current contract with the Company, had a contract terminated by the Company, or has any pending litigation in which the Proposer has made claims against the Company** (Yes/No)	
18	**The Proposer hereby certifies that the Project is dedicated to LMI Subscribers with a minimum 60% dedicated to LMI Customers as described in Section 1.2.3 of the RFP?** (Yes/No)	
19	**(Large Projects only) Does the Proposer accept the contract terms identified in the RDG PPA in its entirety?** (Yes/No)	
19a	**If the response to #19 is "No," specify the name of the Microsoft Word red-line file that identifies the proposed modifications to the agreement, provided, however, that such proposed modifications shall be limited to targeted revisions to, and not deletions or waivers of, the agreement's terms, conditions, covenants, requirements or representations.**	
20	**Is the proposed Project sited on land deemed to be reclaimed land, such as a Brownfield[5]?**	
20a	**If yes, what percentage of the proposed Project site is reclaimed land?**	

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:

[5] As defined by the EPA (Overview of EPA's Brownfields Program | US EPA), "a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant."

- Document signed by an officer or other Proposer representative **authorizing the submission** of the Proposal
- Fully executed **CBRE 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)
- **Certificate of Vendor Compliance** for the Proposer
    - **Certificate of Good Standing** for the Proposer and **Federal and State tax clearance certificates** for the Proposer may be provided in lieu of the Certificate of Vendor Compliance
- **Certification of Counsel for Proposer**, if applicable. (See Appendix B Attachment 1.)
- Completed **Project Interconnection Data Request worksheet** and **project diagram(s)**.
- **Models for equipment and controls, list(s)** identifying components and **respective files** (for inverters and power plant controller), and **complete documentation with instructions** as specified in the Data Request worksheet. (See Section 2.11.1 below)

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 – this will be the official communication address used during the RFP process

2.2.2 **Executive Summary of Proposal.** The executive summary must include an approach and description of the important elements of the Proposal, including a description if a minor variation to the base variation is being submitted. Refer to Section 1.8.2 and 1.8.3 of the RFP for an explanation of minor variations that are allowed. If a minor variation to the base variation is proposed, a **table summarizing the differences of the minor variation in Section 4 shall be included**.

2.2.3 **Pricing information.** Pricing information must be filled out in the Section 2.0 Proposal Summary Table above. If a minor variation to the base variation is proposed, the minor variation's pricing summary must be identified in a similar pricing table in Sections 4.2.0 below. Proposers must provide pricing information only in those table sections – do not embed pricing information in any other portion of the Proposal PDF.

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

- Installed nameplate capacity (MW_{AC} and MW_{DC}) (see section 2.0 for definition)
- Net nameplate capacity of the Facility at the Point(s) of Interconnection (MW_{AC}) (see section 2.0 for definition)
- Identified Available Circuit Capacity at the Point(s) of Interconnection (MW_{AC}). If a Hosting Circuit value is provided, please describe the source of the value (i.e. LVM, Company response to Proposer's inquiry, etc.).
- Number of Generators (PV modules, BESS modules, and inverters)

- Rated Output and Type of each Generator (PV inverter, BESS inverter, Central inverter)
- Generator Facility Design Characteristics
- Facility SCADA and control systems: Describe the SCADA and control system utilized for facility monitoring and control

For projects that include a paired storage component:

- Technology Type (i.e. lithium ion battery)
- Interconnection type (AC or DC)
- Maximum Rated Output, as defined in the applicable contract (MW)
- Discharge Duration at Maximum Rated Output (hours)
- BESS energy capacity (MWh); minimum of 4 times the net nameplate capacity
- Operational Limitations, such as but not limited to: grid charging limits (with respect to ITC), energy throughput limits (daily, monthly, annually), State of Charge ("SOC") restrictions (minimum/maximum SOC while at rest (not charging/discharging)), etc. Proposed Operational Limits cannot be in conflict with the energy discharge requirement in Sections 1.2.12 and 1.2.13 of the RFP. If such a conflict is identified, the Proposal may be disqualified.
- Round Trip Efficiency ("RTE"). Specify a single value (percentage) that the Facility is required to maintain throughout the term of the applicable contract. The RTE must consider and reflect:
    - the technical requirements of the Facility (as further set forth in the applicable contract);
    - that the measurement location of charging and discharged energy is at the point of interconnection;
    - electrical losses associated with the point of interconnection measurement location;
    - any auxiliary and station loads that need to be served by BESS energy during charge and discharge that may not be done at Maximum Rated Output or over a fixed duration; and
    - that the data used to validate the RTE will be captured during a full charge cycle (0%-100% SOC) directly followed by a full discharge cycle (100%-0% SOC).
- Describe any augmentation plans for the storage component to maintain the functionality and characteristics of the storage during the term of the applicable contract. Include any expected interval of augmentation (months/years).
- Estimated useful life of the storage component (including augmentation if used) (years)

2.3 FINANCIAL

Provide the following financial information identified below. As specified in the General Instructions in Section 1.0 above, all information (including attachments) must be provided in English, be provided in U.S. Dollars and use U. S. credit ratings.

2.3.1 Identification of Equity Participants

2.3.1.1 Who are the **equity participants** in the Project (or the equity partners' other partners)?

2.3.1.2 Provide an **organizational 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

2.3.2 Project Financing

2.3.2.1 **How will the Project be financed** (including construction and term financing)? Address at a minimum:

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

2.3.2.2 Identify all **estimated development and capital costs** for, at a minimum:

- Equipment
  - Identify the manufacturer and model number for all major equipment
- Construction
- Engineering
- Seller-Owned Interconnection Facilities
- Land
- Annual O&M
- (For Projects that include a storage component) Specify a percentage of the total project cost that is estimated to be attributed to the storage functionality of the Facility. As the storage functionality is treated as a lease, the Company will use the percentage for its preliminary calculation of the lease liability only. This percentage requested for the Company's accounting purposes does not affect nor alter the liquidated damage provisions of the PPA, as those provisions reflect the benefit the Company seeks from the Project's storage functionality.

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

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

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

2.3.2.6 Provide any **additional evidence to demonstrate that the Project is financeable**.

2.3.3 Project Financing Experience of the Proposer

Describe **the project financing experience of the Proposer** in securing financing for projects of a similar size (i.e., no less than two-thirds the size) and technology as the one being proposed including the following information for any referenced projects:

- Project Name
- Project Technology
- Project Size
- Location
- Date of Construction and Permanent Financing
- Commercial Operations Date
- Proposer's Role in Financing of the Project

- Off-taker
- Term of the Interconnection Agreement
- Financing Structure
- Major Pricing Terms
- Name(s) of Finance Team Member(s); Time (i.e., years, months) worked on the project and Role/Responsibilities

2.3.4 Evidence of the Proposer's Financial Strength

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

- 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

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

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

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

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

2.3.5 Provide **evidence** that the Proposer can provide **the required securities**.

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

- Irrevocable standby letter of credit
- Sources of security
- Description of its credit support provider

2.3.6 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.

2.3.7 State to the best of the Proposer's knowledge: Will the Project result in **consolidation** of the Developer entity's finances onto the Company's financial statements under FASB 810. **Provide supporting information** to allow the Company to verify such conclusion.

2.4 CONTRACT EXCEPTIONS

2.4.1 If Proposers elect to propose modifications to the RDG PPA, **provide a Microsoft Word red-line version of the RDG PPA** identifying specific proposed modifications to the model language that the Proposer is agreeable to and a detailed explanation and supporting rationale for each modification. General comments, drafting notes and footnotes such as "parties to discuss" are unacceptable and will be considered non-responsive.

Proposers that do not upload redlines of the applicable RDG PPA with their Proposal submission will be deemed to have accepted the RDG PPA in its entirety. If no modifications are proposed, please state in this section "no modifications to the RDG PPA".

As set forth in RFP Section 3.8.5.1, proposed modifications to the RDG PPA will be subject to negotiation between the Company and the Final Award Group and should not be assumed to have been accepted either as a result of being selected to the Final Award Group or based on any previously executed PPA.

2.4.2 The Mid-Tier SFC will be preapproved by the Commission and as a result, modifications may not be proposed to it.

2.5 SITE INFORMATION

2.5.1 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. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified. **Proposers must provide documentation set forth in RFP Section 4.3 to prove Site Control**.

2.5.2 Provide a **map of the Project site** that clearly identifies:

- Location of the parcel on which the site is located
- Tax map key number (9-digit format: Island Number (1 digit), Zone Number (1 digit), Section Number (1 digit), Plat Number (3 digits, add leading zeros if less than 3 digits), Parcel Number (3 digits, add leading zeros if less than 3 digits)
- Site boundaries (if the site does not cover the entire parcel)
- Total acreage of the site
- Point(s) of Interconnection
- Relationship of the site to other local infrastructure
- Existing easements encumbering the parcel on which the site is located.

2.5.3 Provide a **site layout plan** which illustrates:

- Proposed location of all equipment
- Proposed location of all facilities on the site, including any proposed line extensions

2.5.4 Describe the **interconnection route** and include:

- Site sketches of how the facility will be interconnected to the Company's System (above-ground and/or underground)
- Identify the approximate latitude and longitude of the proposed Point of Interconnection, in decimal degrees format, to six (6) decimal places.

- Description of the rationale for the interconnection route

2.5.5 Identify **any rights-of-way or easements** that are required for access to the site or for interconnection route:

- Describe the status of rights-of-way or easement acquisition
- Describe the plan for securing the necessary rights-of-way or easement, including the proposed timeline

2.5.6 Provide a **description of any critical infrastructure or community resilience hubs** in proximate location to the proposed Project site that could benefit from an islanding capability of the proposed Project and could enhance resilience in the community.

2.5.7 Indicate whether the Proposal is **intended to partially or fully satisfy a Company identified Non-Wires Alternative** as stated in Appendix I or the Company's Locational Value Map, and which locational need it intends to satisfy.

2.5.8 Provide the following information related to **land use and impervious cover**[6] of the proposed Project:

- **Land use map** including current zoning of the proposed Project site and adjacent properties; indicate percentage of the proposed Project site for each zoning type identified.
- **Map depicting existing impervious cover** of the proposed Project site; include the current percentage of impervious cover of the utilized area for the proposed Project.
- **Map depicting final impervious cover** of the proposed Project site; include the proposed percentage of impervious cover of the utilized area for the proposed Project.
- If the proposed Project is on reclaimed land, such as Brownfield, included a complete description of the reclaimed land and any current land use restrictions.

2.6 ENVIRONMENTAL COMPLIANCE AND PERMITTING PLAN

Scoring of proposals for the non-price evaluation criteria of this section will be based on the completeness and thoroughness of responses to each of the criteria listed below. The Company recommends that each Proposal incorporate the list below as an outline together with complete and thorough responses to each item in the list. Proposals that closely follow this recommendation will typically be awarded higher scores than proposals that do not.

2.6.1 Describe your **overall land use and environmental permits and approvals strategy** and approach to obtaining successful, positive results from the agencies and authorities having jurisdiction, including:

- Explanation of the conceptual plans for siting
- Studies/assessments

[6] As defined by the EPA (8 Tools of Watershed Protection in Developing Areas | Watershed Academy Web | US EPA), "the sum total of all hard surfaces within a watershed including rooftops, parking lots, streets, sidewalks, driveways, and surfaces that are impermeable to infiltration of rainfall into underlying soils/groundwater."

- Permits and approvals
- Gantt format schedule which identifies the sequencing of permit application and approval activities and critical path. (Schedule must be in MM/DD/YY format.)

2.6.2 Discuss the **city zoning and state land use classification**:

- Identify present and required zoning and the ability to site the proposed Project within those zoning allowances.
- Identify present and required land use classifications and the ability to site the proposed Project within those classifications.
- Provide evidence of proper zoning and land use classifications for selected site and interconnection route.
- If changes in the above are required for the proposed Project, provide a plan and timeline to secure the necessary approvals.

2.6.3 Identify all required discretionary and non-discretionary **land use, environmental and construction permits, and approvals** required for development, financing, construction, and operation of the proposed Project, including but not limited to zoning changes, Environmental Assessments, and/or Environmental Impacts Statements.

Provide a **listing of such permits and approvals** indicating:

- Permit Name
- Federal, State, or Local agencies and authorities having jurisdiction over the issuance
- Status of approval and anticipated timeline for seeking and receiving the required permit and/or license
- Explanation of your basis for the assumed timeline
- Explain any situation where a permit or license for one aspect of the Project may influence the timing or permit of another aspect (e.g. a case where one permit is contingent upon completion of another permit or license), if applicable.
- Explain your plans to secure all permits and approvals required for the Project.

2.6.4 Provide a **preliminary environmental assessment of the site** (including any pre-existing environmental conditions) and potential short- and long-term **impacts** associated with, or resulting from, the proposed Project – including direct, indirect, and cumulative impacts associated with development, construction, operation, and maintenance of the proposed Project in every area identified below. Discuss if alternatives have been or will be considered. The assessment shall also include Proposer's short- and long-term plans to mitigate such impacts and explanation of the mitigation strategies for, but not limited to, each of the major environmental areas as presented below:

- Natural Environment
  - Air quality
  - Biology (Natural habitats and ecosystems, flora/fauna/vegetation, and animals, especially if threatened or endangered)
  - Climate
  - Soils
  - Topography and geology
- Land Regulation
  - Land Uses, including any land use restrictions and/or pre-existing environmental conditions/contamination
  - Flood and tsunami hazards (including the site's flood zone based on the Hawaii Department of Land and Natural Resources flood map)

  - Noise
  - Roadways and Traffic
  - Utilities
- Socio-Economic Characteristics
- Aesthetic/Visual Resources
- Solid Waste
- Hazardous Materials
- Water Quality
- Public Safety Services (Police, Fire, Emergency Medical Services)
- Recreation
- Potential Cumulative and Secondary Impacts

2.6.5 Provide a **decommissioning plan**, including:

- Developing and implementing program for recycling to the fullest extent possible, or otherwise properly disposing of installed infrastructure, if any, and
- Demonstrating how restoration of the Site to its original ecological condition is guaranteed in the event of default by the Proposer in the applicable Site Control documentation.

2.7 CULTURAL RESOURCE IMPACTS

2.7.1 Provide a **proposal to ensure cultural sites are identified and carefully protected** as part of a cultural impact plan as it pertains to the Project Site and interconnection route. This proposal must include at a minimum:

- An initial analysis that identifies:
  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 any identified cultural, historical, or natural resources in the area in question, and the reasonable protection of traditional and customary native Hawaiian rights in the affected area.
- Proposer's experience with cultural resource impacts on past projects
- Consultant's experience with cultural resource impacts on past projects (name, firm, relevant experience)
- Status of the cultural impact plan (including, but not limited to: Cultural Impact Assessment, Cultural Landscape Study, Cultural Resource Management Plan, Ethnographic Survey, Consultation on Section 106 Process, and/or Traditional Cultural Property Studies)

2.8 COMMUNITY OUTREACH

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. The public meeting and comment solicitation process described in Section 5.3 of the RFP is intended to support that premise and the Commission's desire to increase bid transparency within the RFP process. When developers neglect to demonstrate transparency and a willingness to engage in early and frequent communication with Hawaii's communities, costly and timely challenges to their projects have resulted. In some instances, projects have

failed. Incorporating transparency during the competitive bidding phase may seem unconventional, but it has become an essential community expectation. Developers must share information and work with communities to address concerns through careful listening, thoughtful responsiveness, and a commitment to respect the environmental and cultural values of Hawai‘i.

2.8.1 Provide a **detailed 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 plan shall address, but not be limited to, the following items:

- Project description
- Community scoping
- Project benefits
- Government approvals
- Development process
- Identification of communities and other stakeholders that may be affected by the proposed Project:
  - How will they be affected?
  - What mitigation strategies will the Proposer implement?
- Construction related updates
  - Plan for reporting construction schedules and activities, including resulting impacts (ex. traffic, noise, and dust) and proper mitigation plans beginning at least one month prior to the start of scheduled work
- Local labor and prevailing wage commitment (if any)
- Comprehensive communication strategy with affected communities and the general public regarding the proposed Project:
  - Describe frequency of communication, including monthly Project status updates
  - Provide source of information
  - Identify communication outlets
  - Describe opportunities, if any for affected communities and general public to provide the developer with feedback and comments on the proposed Project

Proposers are reminded of RFP Section 3.4.2 including the provision of Proposals must provide all referenced material if it is to be considered during the Proposal evaluation.

2.8.2 Provide any **documentation of local community support or opposition** including any letters from local organizations, newspaper articles, or communications from local officials.

2.8.3 Provide a **description of community outreach efforts** already taken or currently underway, including the names of organizations and stakeholders contacted about the proposed Project.

2.8.4 Describe any anticipated or negotiated investment in the community and other **community benefits** that the Proposer proposes to provide in connection with the Project, along with an estimated value of the community benefits in dollars (including the cost to Proposers providing the benefits and supporting details on how those costs and benefits were derived).

2.8.5 All Proposers selected to the Final Award Group must display the below table of information on their website as described in Section 5.3 of the RFP to provide communities Project information that is of interest to them in a standard format. All information in this table must be included in all community presentations in addition to the Proposer’s project website.

PROJECT SUMMARY AND COMMUNITY OUTREACH PLAN

*	Proposer Name (Company name)	
*	Parent Company/Owner/Sponsor/Business Affiliation/etc.	
*	Project Name	
*	Net nameplate capacity (MW) (must match Proposal information)	
*	Proposed Facility Location, Street Address if available, or what City/Area on the island it is near	
*	TMK(s) of Facility Location (must match Proposal information)	
*	Point of Interconnection's Circuit (must match Proposal information)	
*	Project Description (in 200 words or less)	*(A description that includes information about the project that will enable the community to understand the impact that the Project might have on the community.)*
*	Project site map	*(provide a map similar to what was provided in Section 2.5.2)*
*	Site layout plan	*(provide a layout similar to what was provided in Section 2.5.3)*
*	Interconnection route	*(provide a map of the route similar to what was provided in Section 2.5.4)*
Environmental Compliance and Permitting Plan		
*	Overall land use and environmental permits and approvals strategy	*(provide information in level of detail as provided in Section 2.6.1)*
*	Gantt format schedule which identifies the sequencing of permit applications and approval activities and critical path. Schedule must be in MM/DD/YY format)	*(provide information in level of detail as provided in Section 2.6.1)*
*	City Zoning and Land Use Classification	*(provide information in level of detail as provided in Section 2.6.2)*
*	Discretionary and non-discretionary Land use, environmental and construction permits and approvals	(*provide information in level of detail as provided in* Section 2.6.3)
*	Listing of Permits and approvals	(*provide information in level of detail as provided in* Section 2.6.3)
*	Preliminary environmental assessment of the Site (including any pre-existing environmental conditions)	(*provide information in level of detail as provided in* Section 2.6.4)

Cultural Resource Impacts		
*	Proposer's updated Community Outreach Plan must include a plan that (1) identifies any cultural, historic or natural resources that will be impacted by the Project (2) describes the potential impacts on these resources and (3) identifies measures to mitigate such impacts.	(*provide information in level of detail as provided in* Section 2.7)
Community Outreach		
*	Detailed Community Outreach Plan	*(provide key information from Community Outreach Plan as specified in Section 2.8.1 or provide a link to updated comprehensive Community Outreach Plan)*
*	Local community support or opposition	*(provide latest comprehensive information)*
*	Community outreach efforts	*(provide latest comprehensive information)*
*	Community benefits	*(provide latest comprehensive information)*

2.9 OPERATIONS AND MAINTENANCE (O&M)

2.9.1 To demonstrate the long-term operational viability of the proposed Project, describe the **planned operations and maintenance**, including:

- Operations and maintenance funding levels, annually, throughout the term of the contract.
- Description of the operational requirements by frequency (daily, weekly, monthly, yearly, as-necessary, run hour interval) and maintenance requirements by frequency (daily, weekly, monthly, yearly, as-necessary, run hour interval).
- A discussion of the staffing levels proposed for the Project and location of such staff. If such staff is offsite, describe response time and ability to control the Project remotely.
- Technology specific maintenance experience records.
- Identification of any O&M providers.
- The expected role of the Proposer (Owner) or outside contractor.
- Scheduling of major maintenance activity.
- Plan for testing equipment.
- Estimated life of Generation and/or Storage Facilities and associated Interconnection Facilities.
- Safety plan, including historical safety records with environmental history records, violations, and compliance plans.
- Security plan.
- Site maintenance plan.
- Substation equipment maintenance plan.

2.9.2 State whether the Proposer would **consider 24-hour staffing**. Explain how this would be done.

2.9.3 Describe the **Proposer's contingency plan**, including the Proposer's mitigation plans to address failures. Such information should be described in the Proposal to demonstrate the Project's reliability with regard to potential operational issues.

2.9.4 Describe if the Proposer will **coordinate their maintenance schedule** for the Project with the Company's annual planned generation maintenance.

2.9.5 Describe the **status of any O&M agreements or contracts** that the Proposer is required to secure. Include a discussion of the Proposer's plan for securing a long-term O&M contract.

2.9.6 Provide **examples of the Proposer's experience with O&M services** for other similar projects.

2.10 PERFORMANCE STANDARDS

2.10.1 Design and operating information. Provide a **description of the project design**. Description shall include:

- Configuration description, including conceptual or schematic diagrams
- Overview of the Facility Control Systems – central control and inverter- or resource-level control
- Diagrams approved by a Professional Electrical Engineer registered in the State of Hawai'i, indicated by the presence of the Engineer's Professional seal on all drawings and documents. Including but not limited to:
  - A single-line diagram, relay list, trip scheme and settings of the generating facility, which identifies the Point of Interconnection, circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes.
  - A three-line diagram which shows the Point of Interconnection, potential transformer (PT) and current transformer (CT) ratios, and details of the generating facility configuration, including relays, meters and test switches.

2.10.1.1 Provide the projected **hourly annual energy potential production profile of the Facility**[7] **(24 hours x 365 days, 8760 generation profile)** for the provided NEP RFP Projection.

2.10.1.2 Provide the **sample rate of critical telemetry** (i.e. frequency and voltage) based on inputs to the facility control systems.

2.10.1.3 Provide a description of the Facility's **capability to be grid-forming and have black start capability**.

2.10.1.4 Provide the explanation of the methodology and underlying **information used to derive the Project's NEP RFP Projection**, including the preliminary design of the Facility and the typical meteorological year file used to estimate the Renewable Resource Baseline, as required in Article 6.6 of the applicable RDG PPA and Mid-Tier SFC. The explanation of the methodology should include, but not be

[7] For Paired Projects, the projected hourly annual energy production profile is the projected output from the generating facility without curtailment and before any energy is directed to an energy storage component.

limited to, the long-term resource data used, the gross and net generation MWh, and assumptions (loss factors, uncertainty values, any grid or project constraints).

2.10.2 Capability of **Meeting Performance Standards**. The proposed Facility must meet the performance attributes identified in Section 2.1 of the RFP. Provide **confirmation that the proposed Facility will meet the requirements identified** or provide clarification or comments about the Facility's ability to meet the performance standards. 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.

2.10.3 **Reactive Power Control**: Provide the facility's ability to meet the Reactive Power Control capabilities, including Voltage Regulation at the point of interconnection, required in the Performance Standards, including contribution from the inverters of generation and/or storage and means of coordinating the response. Provide the inverter capability curve(s). Confirm ability to provide reactive power at zero active power.

2.10.4 **Ramp Rate** for Generation Facilities: Confirm the ability to meet the ramp rate requirement specified in the RDG PPA or Mid-Tier SFC.

2.10.5 **Undervoltage ride-through**: Provide the facility's terminal voltage level(s) and elapsed time at which the facility will disconnect from the utility system during the disturbance, if any. Confirm the ability to meet ride-through requirements and include supporting documentation regarding inverter design, control parameters, etc.

2.10.6 **Overvoltage ride-through**: Provide the facility's terminal voltage level(s) and elapsed time at which the facility will disconnect from the utility system during the disturbance, if any. Confirm the ability to meet ride-through requirements and include supporting documentation regarding inverter design, control parameters, etc.

2.10.7 **Transient stability ride-through**: Provide the facility's ability to stay online during Company System: (1) three-phase fault located anywhere on the Company System and lasting up to__ cycles; and (2) a single line to ground fault located anywhere on the Company System and lasting up to__ cycles. Provide the Facility's ability to withstand subsequent events.

2.10.8 **Underfrequency ride-through**: Provide the facility's terminal frequency level(s) and elapsed time at which the facility will disconnect from the utility system during the disturbance, if any. Confirm the ability to meet ride-through requirements and include supporting documentation regarding inverter design, control parameters, etc.

2.10.9 **Overfrequency ride-through**: Provide the facility's terminal frequency level(s) and elapsed time at which the facility will disconnect from the utility system during the disturbance, if any. Confirm the ability to meet ride-through requirements and include supporting documentation regarding inverter design, control parameters, etc.

2.10.10 **Frequency Response**: Provide the facility's frequency response characteristics as required by the RDG PPA or Mid-Tier SFC, including time of response, tunable parameters, alternate frequency response modes and means of implementing such features.

2.10.11 **Auxiliary Power Information**: Proposer must provide the maximum auxiliary power requirements for:

- Start-up
- Normal Operations (from generator)
- Normal Operating Shutdown
- Forced Emergency Shutdown
- Maintenance Outage

2.10.12 **Coordination of Operations**: Provide a description of the control facilities required to coordinate generator operation with and between the Company's System Operator and the Company's System.

- Include a description of the equipment and technology used to facilitate dispatch to the Company and communicate with the Company.
- Include a description of the control and protection requirements of the generator and the Company's System.

2.10.13 **Cycling Capability**: Describe the Facility's ability to cycle on/off and provide limitations.

2.10.14 **Active Power Control Interface**: Describe the means of implementing active power control and the Power Possible, including the contribution to the dispatch signal from paired storage, if any. Provide the Proposer's experience dealing with active power control, dispatch, frequency response, and ride-through.

2.10.15 Provide the details of the **major equipment** (i.e. batteries, inverters, battery management system), including, but not limited to, name of manufacturer, models, key metrics, characteristics of the equipment, and performance specifications.

2.10.16 **Energy Storage performance standards**: For projects that include a storage component, provide additional performance standard descriptions as follows:

- MWh storage output for a full year
- Ramp Rate: Provide the Facility's ramp rate, which should be no more than 2 MW/minute for all conditions other than those under control of the Company System Operator and/or those due to desired frequency response.
- System Response Time – Idle to Design Maximum (minutes)
- Discharge Start-up time (minutes from notification)
- Charge Start-up time (minutes from notification)
- Start and run-time limitations, if any
- Ancillary Services provided, if any (i.e. Spinning Reserves, Non-Spinning Reserves, Regulation Up, Regulation Down, Black Start capability, other)

2.10.17 Provide the description and details of the **grid-charging capabilities of the Facility**. Include a description on the ability to control the charging source.

2.11 INTERCONNECTION SUBMITTAL REQUIREMENTS

2.11.1 A summary of the model requirements and impact study scope can be found in Appx B Att 6 from the "1. Download Documents" tab.

2.11.2 For projects starting from 250 kW and less than 1 MW in size, provide project **single line and three line diagram(s)** and an **equipment list** with each Proposal. Note that additional interconnection submittal requirements, to be submitted 30 days after the Final Award Group selection, are identified in Section 5.1 of the RFP.

2.11.3 For projects greater than or equal to 1 MW in size, provide the following with each Proposal

- Completed **Project Interconnection Requirement Study Data Request worksheet** (The worksheet can be found in the "1. Download Documents" tab as Appx B Att 2 with the file name of Project Interconnection Data Request Worksheets (PV Generation) MS Excel files.);
- All **project diagram(s)**;
- **Models for equipment and controls**;
- **List(s)** identifying components and **respective files** (for inverters and power plant controller); and
- **Complete documentation with instructions**.

Proposers may also download the Facility Technical Model Requirements and Review Process documentation labelled as Appx B Att 3 from the "1. Download Documents" tab.

2.12 PROVEN TECHNOLOGY

2.12.1 Provide all supporting information for the Company to assess the **commercial and financial maturity of the technology** being proposed. Provide any supporting documentation that shows examples of projects that:

- Use the technology at the scale being proposed
- Have successfully reached commercial operations (for example, by submitting a PPA)
- Demonstrate experience in providing Active Power dispatch

2.13 EXPERIENCE AND QUALIFICATIONS

Proposers, its affiliated companies, partners, and/or contractors and consultants are required to demonstrate project experience and management capability to successfully develop and operate the proposed Project.

2.13.1 Provide a hierarchical **organizational / management chart** for the Project that lists all key personnel and project participants dedicated to the Project and that identifies the management structure and responsibilities. In addition to the chart, Proposers must provide biographies / resumes of the key personnel, including position, years of relevant experience and similar project experience. Proposers must provide specifics as they relate to financing of renewable energy projects. Identify architects and engineers or provision to provide same that are licensed to practice in the State of Hawaii. Providers must also provide a completed table:

- For each of the project participants (including the Proposer, partners, and proposed contractors), **fill out the table below** and provide statements that list the specific experience of the individual

in: financing, designing, constructing, interconnecting, owning, operating, and maintaining renewable energy generating or storage facilities, or other projects of similar size and technology, and

- Provide any evidence that the project participants have worked jointly on other projects.

	EXPERIENCE: In the applicable columns below, include project details (i.e., project name, location, technology, size) and relevant job duties (role/responsibilities) and time (in years/months) spent on the project. List multiple projects if applicable.						
Participant Name:	**Financing**	**Designing**	**Constructing**	**Interconnecting**	**Owning**	**Operating**	**Maintaining**
1.							
2.							
3.							
…							

2.13.2 Identify those **member(s) of the team** the Proposer is submitting to meet the experience and qualifications requirement, including the Threshold Requirement. Identify those **members of the team with experience and qualifications,** including affiliates, and their principal personnel who will be involved in the project. If the Proposer consists of multiple parties, such as joint ventures or partnerships, demonstrate each member(s) firm commitment to provide services to the project (e.g., letter of intent); provide this information for each party, clearly indicating the proposed role of each party, including an ownership chart indicating direct and indirect ownership, and percentage interests in the partnership or joint venture.

2.13.3 Provide a **listing in the table format below, of all renewable energy generation or energy storage projects** the Proposer has successfully developed or that are currently under construction. Describe the Proposer's role and responsibilities associated with these projects (lead developer, owner, investor, etc.). Provide the following information as part of the response:

Project Name	**Location (City, State)**	**Technology (wind, PV, hydro, plus storage, etc.)**	**Size (MW/ MWh)**	**Commercial Operation Date**	**Offtaker (if applicable)**	**Role & Responsibilities**
1.						
2.						
3.						
…						

2.14 STATE OF PROJECT DEVELOPMENT AND SCHEDULE

2.14.1 Provide a **project schedule in GANTT chart format** with complete **critical path activities** identified for the Proposal from the Notice of Selection of the Proposal to the start of Commercial Operations.

- The **schedule** must include:
  - Interconnection Requirement Study (IRS) assumptions
  - Anticipated contract negotiation period assumptions
  - Regulatory assumptions

  - Anticipated submittal and approval dates for permitting (including but not limited to environmental and archaeological compliance)
  - Siting and land acquisition
  - Cultural Resource implications and mitigation activities, including the Archaeological Literature Review and Field Inspection Report
  - Community outreach and engagement activities
  - Energy resource assessment
  - Financing
  - Engineering
  - Procurement
  - Facility construction including construction management events
  - Applicable reporting milestone events specified in the RDG PPA or Mid-Tier SFC
  - Testing
  - Interconnection (including engineering, procurement, and construction)
  - Commercial Operations Date
  - All other important elements outside of the direct construction of the Project
- For each project element, list the start and end date (must be in MM/DD/YY format), and include predecessors to clearly illustrate schedule dependencies and durations.
- Proposers must also list and describe critical path activities and milestone events, particularly as they relate to the integration and coordination of the project components and the Company's Electric System. Proposers must ensure that the schedule provided in this section is consistent with the milestone events contained in the RDG PPA or Mid-Tier SFC and/or other agreements.

2.14.2 Describe the **construction execution strategy** including:

- Identification of contracting/subcontracting plans
- Modular construction
- Safety plans[8]
- Quality control and assurance plan
- Labor availability
- Likely manufacturing sites and procurement plans
- Similar projects where these construction methods have been used by the Proposer.

2.14.3 Provide a description of any **project activities that have been performed to date**.

2.14.4 Explain how you plan to reach **safe harbor milestones** (if applicable) and **guaranteed commercial operations**, including durations and dependencies which support this achievement.

[8] A document that describes the various safety procedures and practices that will be implemented on the Project and how applicable safety regulations, standards, and work practices will be enforced on the Project.

3.0 PROPOSED CBRE PROGRAM

Provide a detailed description of the CBRE program that will be offered to eligible subscribers, including at a minimum, but not limited to, a discussion of the following. Please refer to the CBRE program non-price criteria in the RFP for elements of the proposed CBRE program that Proposals will be evaluated on.

- Financing Options
    - LMI Subscriber fees and payments
        - Upfront payments
        - Ongoing payments
    - Public funding options
    - Extent to which subscribers will be financially responsible for any facility underperformance
- Percentage of the project's capacity that will be available to subscribers vs. unsubscribed capacity
    - Capacity allocation (%) and other commitments to residential subscribers
    - Capacity allocation (%) and other commitments to low to moderate income ("LMI") subscribers
- Marketing or outreach plans to advertise the proposed project/program to LMI eligible customers
- Strategies for LMI customer retention and maintaining LMI customer participation levels
- Customer protection provisions
- Estimated benefits to LMI customer participants
    - Expected savings
    - Payback periods
    - Payback mechanisms
    - Other benefits
- Prior experience, specifically relating to community-based renewable energy projects
- Plans for CBRE program administration
    - Strategies for subscriber retention
    - How turnover and churn of subscribers will be handled

4.0 MINOR PROPOSAL VARIATION

Proposers submitting a minor variation to their base variation (as allowed in RFP Section 1.8.2 and 1.8.3) must provide the **details of the variation in the below section**. In this proposal variation Section 4.0 below, Proposers must (1) complete a Proposal Summary identical to Section 2.0 of this Appendix B. The information in this table must reflect the information for the variation being proposed. As specified in Section 2.2.2 above, Proposers submitting a variation must also (2) include a table summarizing the differences between the base variation and the minor variation. Additionally, Proposers must (3) identify all changes to any information provided in response to Sections 2.2.4 through 3.0 of this Appendix B for the proposal variation. If differences from any section in Sections 2.2.4 through 3.0 are not identified, the Company will assume that the information contained in the base variation (Sections 2.2.4 through 3.0) also applies to this proposal variation.

4.1 RESERVED

4.2.0 PROPOSAL VARIATION SUMMARY TABLE

Replicate the entire Summary Table here. The responses to all line items must reflect the variation being proposed.

4.2.1 through 4.3.0 RESPECTIVE SECTIONS AS NECESSARY

Identify differences to any Appendix B Section 2.1 through 3.0 here.

Note: Section 2.2.2 above requires a table summarizing the differences between the variations, if variations are proposed. For convenience, please duplicate the table summarizing the differences here.

Certification of Counsel for Proposer
Hawaiian Electric Company, Inc., Maui Electric Company, Ltd, and Hawai'i Electric Light Company, Inc.

Pursuant to Section 1.7.4 of Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc. and Maui Electric Company, Limited's (each a "Company" and collectively, the "Companies") Request For Proposals for Community-Based Rewewable Energy Projects for Low- and Moderate-Income Subscribers, Island of Maui ("RFP"), the Companies may require legal counsel who represent multiple unaffiliated proposers to sign a certification that they have not shared confidential information obtained through the representation of one proposer with any other unafilliated proposer.

Accordingly, by signing below, I hereby acknowledge, agree and certify that:

(1) in connection with the RFP, I represent the following company that has submitted a proposal(s) for the RFP: _____ ("Proposer");

(2) irrespective of any proposer's direction, waiver or request to the contrary, I will not share a proposer's confidential information or the Company's confidential information associated with such proposer, including, but not limited to, a proposer's or Company's negotiating positions, with third parties unaffiliated with Proposer (by contract or organizational structure), including other proposers responding to the RFP;

(3) the Companies may rely on this certification for purposes of the RFP; and

(4) at the conclusion of power purchase agreement negotiations, if any, the Company may require me to sign a certicate certifying that I have not shared a proposer's confidential information or the Company's confidential information associated with such proposer, including, but not limited to, a proposer's or Company's negotiating positions, with third parties unaffiliated with Proposer (by contract or organizational structure), including other proposers responding to the RFP.

_____
Name (print)

_____
Law Firm (if applicable)

_____ _____
Signature Date

Section 1.7.4 of the RFP provides in relevant part that:

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.

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 a Proposer's or Company's negotiating positions.

Project Interconnection - Data Request
FOR PV/BESS GENERATION
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
1)	**Please provide a plan map of the Renewable Generation facility. Please indicate the interconnection point to the HECO system.**	
2)	**Please provide the following generation and load information for the Renewable Generation facility:**	
	a. Gross and net output of the facility	
	b. Expected KW and KVAR loads including, but not limited to, generators' auxiliary load curve, process load(s) profile(s), etc.	
	c. Expected minimum and maximum MW and MVAR "import from" AND "export to" HECO.	
3)	**Please provide Single-Line Diagram(s), Three-Line Diagram(s), and Protective Relay List & Trip Schedule for the generation and interconnection facilities:**	
	a. The Single-line diagram(s) and Three-line diagram (s) should include: i. For main and generator step up transformer(s), please show: • Transformer voltage and MVA ratings.	
	• Transformer impedance(s).	
	• Transformer winding connections and grounding. If neutrals are grounded through impedance, please show the impedance value.	
	ii. The protective relaying and metering for the generators, transformers, buses, and all other main substation equipment.	
	iii. For the potential transformers, please indicate the type, quantity, ratio, and accuracy rating.	
	iv. For the current transformers, please indicate the type, quantity, ratio, and accuracy rating, and thermal rating factor.	
	v. Auxiliary power devices (e.g. capacitors, reactors, storage systems, etc.) and their rating(s); additional inquiries may be made to obtain technical data for these devices.	
	vi. For the interconnection / tie lines (overhead or underground) and the plant's generation system, please provide the following, as applicable: • Installation details such as cross-section(s), plan and profiles, etc.	
	• Conductor data such as size, insulation, length etc.	
	• Continuous and emergency current ratings.	
	• Voltage rating (nominal and maximum KV).	
	• BIL rating.	
	• Positive, negative, and zero-sequence impedances (resistance, reactance, and susceptance)	
	• Capacitance or charging current.	
	• Short-circuit current capability.	
	vii. Include station power for facility and all applicable details.	
	viii. All applicable notes pertaining to the design and operation of the facility.	
	b. The Protective relay list & trip schedule should list the protected equipment; the relay description, type, style number, quantity, ANSI Device No., and range; and the breaker(s)/switching device(s) tripped, for both the generator protection and the interconnection facilities protection.	
	c. Please provide both a paper and an electronic version (e.g. dgn, dxf, or pdf) of the single-line diagram(s) and the protective relay list & trip schedule.	
	d. Single-line diagrams should be provided for both the generation plant and the interconnection substation.	

Project Interconnection - Data Request
FOR PV/BESS GENERATION
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
4)	**For the PV Inverter Based Generating Faciltiy, please provide the following data, as applicable:**	
	a. Inverter manufacturer, Type, Size, Impedances. Attach copy of inverter data sheet.	
	b. Power Factor Range Capability	
	c. Inverter Reactive Power Capability Curve	
	d. Auxillary loads (P, Q, Power Factor)	
	e. Inverter's Internal Isolation Transformer Grounding Method, if used (i.e. effectively grounded, resonant grounded, low inductance grounded, high-resistance grounded, low-resistance grounded, ungrounded). If the transformer is not solidly grounded , provide the impedance value for the grounding neutral and the impedance for the isolation transformer.	
	f. Diagram for Inverter's internal isolation transformer	
	g. Switching and service restoration practice	
	h. Protection data (voltage ride-through and trip settings, frequency ride-through and trip settings etc.). Include setpoint and clearing time ranges for voltage and frequency settings.	
	i. Description of harmonic spectrum of inverter injection (order, magnitude)	

5)	**For the BESS Inverter Based Generating Faciltiy, please provide the following data (if system is DC coupled, please note DC coupling and reference to 4).**	
	a. Inverter manufacturer, Type, Size, Impedances. Attach copy of inverter data sheet.	
	b. Power Factor Range Capability	
	c. Inverter Reactive Power Capability Curve	
	d. Auxillary loads (P, Q, Power Factor)	
	e. Inverter's Internal Isolation Transformer Grounding Method, if used (i.e. effectively grounded, resonant grounded, low inductance grounded, high-resistance grounded, low-resistance grounded, ungrounded). If the transformer is not solidly grounded , provide the impedance value for the grounding neutral and the impedance for the isolation transformer.	
	f. Diagram for Inverter's internal isolation transformer	
	g. Switching and service restoration practice	
	h. Protection data (voltage ride-through and trip settings, frequency ride-through and trip settings etc.). Include setpoint and clearing time ranges for voltage and frequency settings.	
	i. Description of harmonic spectrum of inverter injection (order, magnitude)	

6)	**Energy Storage System, if applicable**	
	a. Operation characteristics	
	b. Voltage level	
	c. Capacity (how long and how much can the battery support)	
	d. Deployment strategy/schedule	
	e. Energy storage system data sheet	

7)	**For the PV plant's collector system, please provide the following, as applicable:**	
	a. Conductor data such as size, insulation, etc.	
	b. Continuous and emergency current ratings.	
	c. Voltage rating (nominal and maximum kV).	
	d. BIL rating.	
	e. Positive, negative, and zero-sequence impedances (resistance, reactance, and susceptance).	
	f. Capacitance or charging current.	
	g. Short-circuit current capability.	

Project Interconnection - Data Request
FOR PV/BESS GENERATION
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
8)	**For the BESS plant's collector system, please provide the following, as applicable (if system is DC coupled, please note DC coupling and reference to 7):**	
	a. Conductor data such as size, insulation, etc.	
	b. Continuous and emergency current ratings.	
	c. Voltage rating (nominal and maximum kV).	
	d. BIL rating.	
	e. Positive, negative, and zero-sequence impedances (resistance, reactance, and susceptance).	
	f. Capacitance or charging current.	
	g. Short-circuit current capability.	
9)	**Please provide the following software models that accurately represent the Facility, as applicable:** (For model requirements, refer to the HECO Facility Technical Model Requirements and Review Process)	
	a. Validated PSS/E load flow model up to the point of interconnection. The PSS/E model shall include the main transformer, collection system, generator step-up transformers, inverter systems, and any other components including capacitor banks, energy storage systems, DVAR, etc. An equivalent respresentation of the collection system, generator step-up transformers, and inverter systems is acceptable. Documentation on the model shall be provided.	
	b. Validated PSS/E dynamic model for the inverter; and other components including energy storage system, DVAR, etc. if applicable. The inverter model shall include the generator/converter, electrical controls, plant-level controller, and protection relays. Generic and Detailed models shall be provided. Documentation on the model(s) shall be provided, including the PSS/E dyre file with model parameters.	
	i. Generic models shall parameterize models available within the PSS/E standard model library.	
	ii. Detailed models shall be supplied by the vendor/manufacturer as user-written models. The uncompiled source code for the user-written model shall be provided to ensure compatability with future versions of PSS/E. In lieu of the uncompiled source code, a compiled object file and applicable library files shall be provided in PSS/E versions 33 AND 34 format. Updates of the object file compatible with future PSS/E versions must be provided as requested for the life of the project as written in the power purchase agreement. Documentation shall include the characteristics of the model, including block diagrams, values, names for all model parameters, and a list of all state variables.	
	c. Validated PSCAD model of the inverter; and other components including energy storage system, DVAR, auxiliary plant controllers, etc. if applicable. Documentation on the model(s) shall be provided. Refer to PSCAD Model Requirements Memo for model requirements.	
	d. Overlayed plots validating the performance of the three dynamic models for a three-phase fault. Plots shall include voltage, real and reactive power, real and reactive current.	
	e. Validated Aspen Oneliner short circuit model that accurately represents the facility (including energy storage system if applicable), and is valid for all faults conditions anywhere on the Utility system. Documentation on the model(s) shall be provided. (OTHERWISE SEE ADDITIONAL TABS FOR REQUIRED INFORMATION TO MODEL INVERTER AS A GENERATOR OR A VOLTAGE CONTROLLED CURRENT SOURCE)	
10)	**For the main transformer and generator step-up transformers, please provide:**	
	a. Transformer voltage and MVA ratings, and available taps. Attach copy of transformer test report or data sheet	
	b. The tap settings used.	
	c. The LTC Control Scheme.	
	d. Transformer winding connections and grounding used. If the transformer is not solidly grounded, provide the impedance value for the grounding method.	
	e. Positive, negative, and zero sequence impedance values.	

Project Interconnection - Data Request
FOR PV/BESS GENERATION
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

	Response
11) **For the circuit breakers and fault-clearing switching devices, including the generator breakers, please provide:**	
a. The voltage, continuous current and interrupting capability ratings.	
b. The trip speed (time to open).	
12) **For the power fuses, please provide:**	
a. The manufacturer, type, size, and interrupting capability.	
b. The minimum melt and total clearing curves.	
13) **For the protective relaying, please provide:**	
a. Data for the CTs used with the relaying including the manufacturer, type of CT, accuracy class, and thermal rating factor.	
b. Data for the PTs used with the relaying including the manufacturer, type of PT, voltage ratings, and quantity.	

Instructions:
Please fill in the data in the green blanks below
(Note: This does not include the internal isolation transformer, if used)

[1] Maximum rated output power = _____ kVA

[2] Impedances in **Per Unit** based on kVA from [1]

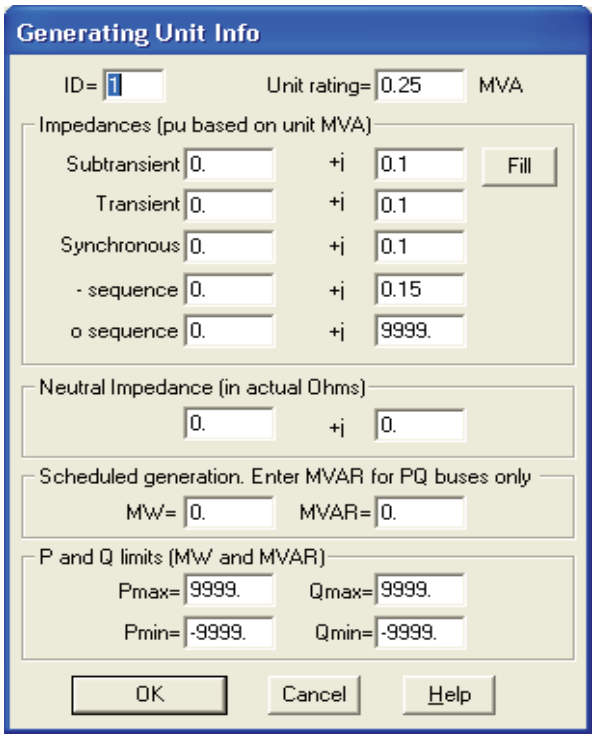
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[3] Neutral impedance (if any) in actual **Ohms**:

R	X

NOTE: These parameters should reflect the inverter response for all types of faults at any point on the electrical system to which the inverter is connected. This includes faults at the inverter output terminals, and also on the 138 kV transmission system. If the stated parameters do not cover this range, please state the adjustments needed to these parameters to accurately represent the inverter response across this range.

These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:



Instructions:
Please fill in the data in the green blanks below

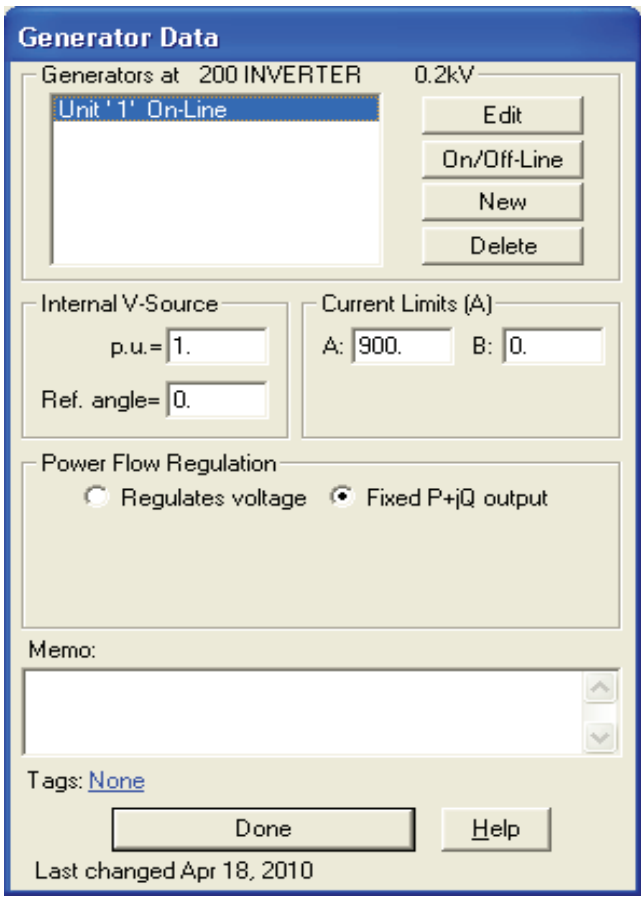
[1] Internal open circuit voltage

Magnitude = _____ Per Unit
Angle = _____ Degrees

[2] AC Output Current Limit = _____ Amps

NOTE: These parameters should reflect the inverter response for all types of faults at any point on the electrical system to which the inverter is connected. This includes faults at the inverter output terminals, and also on the 138 kV transmission system. If the stated parameters do not cover this range, please state the adjustments needed to these parameters to accurately represent the inverter response across this range.

These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:



Instructions:
Please fill in the data in the green blanks below

[1] Inverter MVA Rating: _____ MVA

[2] Voltage-Current Characteristics:

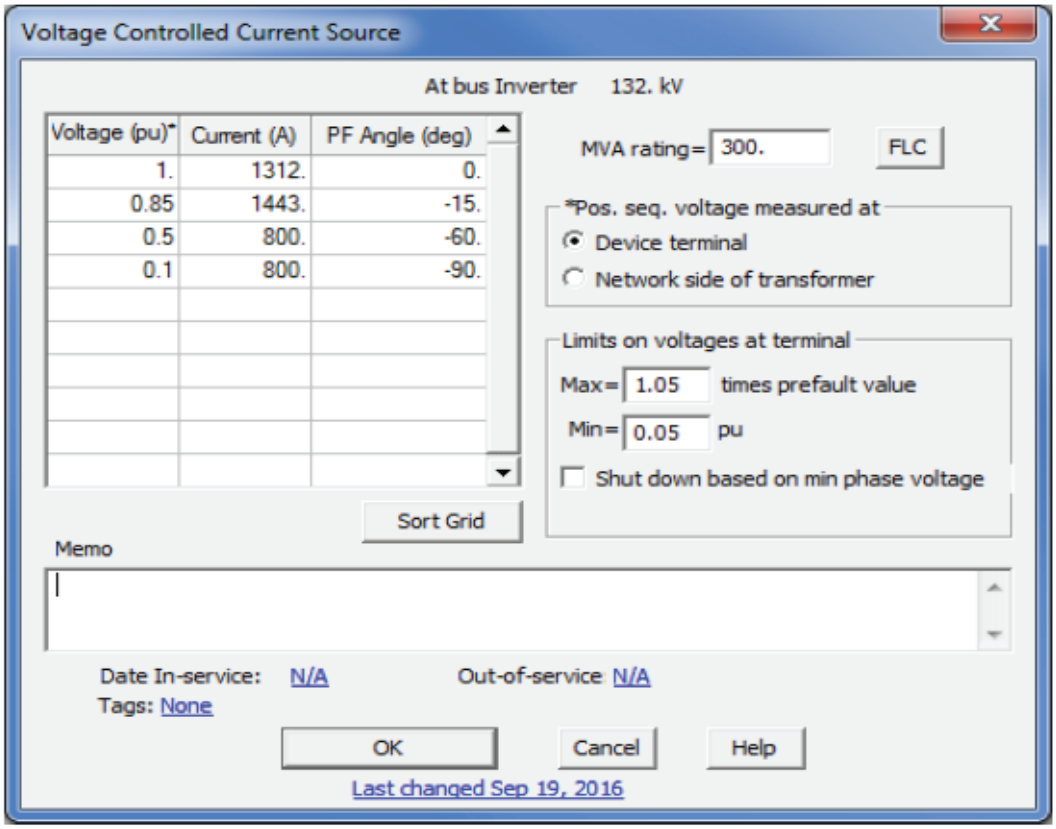
Voltage PU	Current (A)	PF Angle (deg)

[3] Location of Voltage Measurement:
_____ Device Terminal OR
_____ Network side of Transformer

[4] Maximum Voltage: _____ Times prefault value

[5] Minimum Voltage _____ Per Unit

These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:



Instructions:
Please fill in the data in the green blanks below
(Note: This is not required if an internal isolation transformer is not used)

[1] Transformer rated power = _____ kVA

[2] Winding Configuration

Inverter Side = _____ Delta/Wye
Customer Side = _____ Delta/Wye

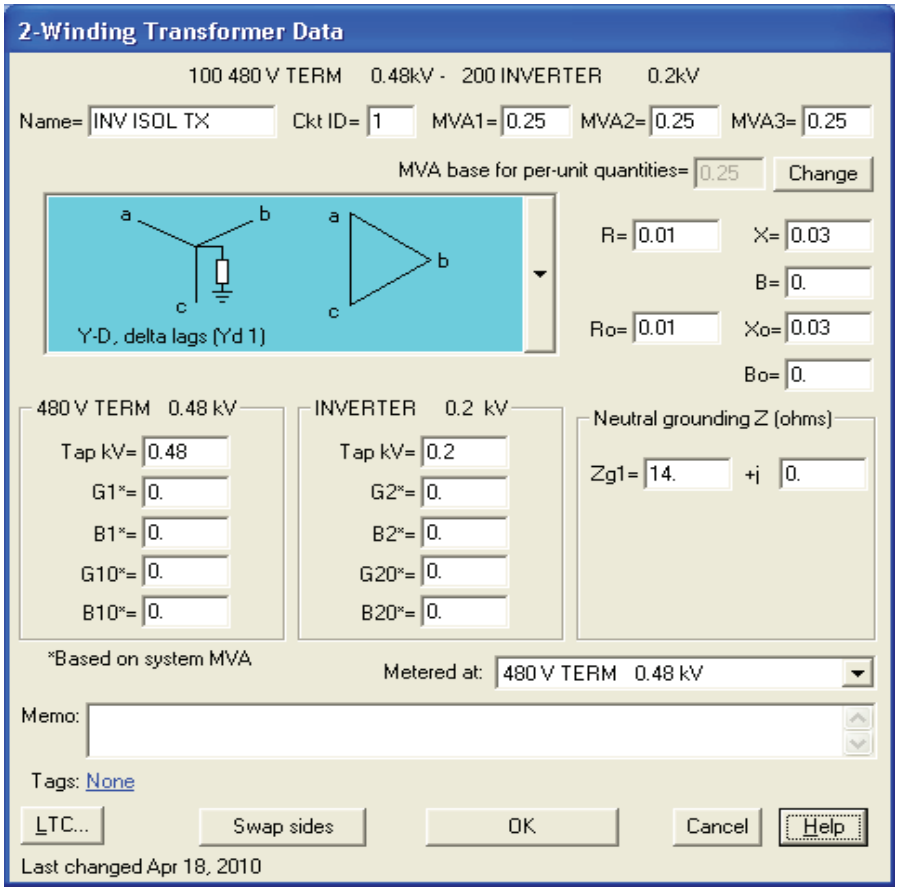
[2] Impedances in **Per Unit** based on kVA

	R	X
Positive Sequence =		
Zero Sequence =		

[3] Neutral impedance (if any) in actual **Ohms**:

R	X

These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:



HAWAIIAN ELECTRIC FACILITY TECHNICAL MODEL REQUIREMENTS AND REVIEW PROCESS

August 23, 2021

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1 INTRODUCTION

This document summarizes requirements of generation facility technical model submittals for request for proposals for variable renewable dispatchable generation and energy storage and describes the review process for model submittals. The requirements and examples provided are based on the Company's current information as of the date of this document and are subject to change.

2 FACILITY TECHNICAL MODEL REQUIREMENTS

To fully investigate impacts of the proposed generation facility on Hawaiian Electric's system and correctly identify any mitigation measures, the proposed generation facility technical model, along with related technical documents, will need to be submitted for review prior to System Impact Study (SIS).

2.1 Overview of Submission

For all generation facility types, the technical model submittal shall include:

1. PSCAD model[1]
2. PSS/E power flow model
3. Standard Library PSS/E dynamic model
4. User defined PSS/E dynamic model, and
5. ASPEN Oneliner model

For generation facilities categorized as inverter-based resources, both Grid Following (GFL) and Grid Forming (GFM) Mode capability may be required from the project. In this case, for each project, two sets of models shall be submitted: one with the project in GFL mode, and the other with the project in GFM mode. The GFL mode technical model submittal shall follow the list above. The GFM mode technical model submittal shall include:

6. GFM PSCAD model
7. GFM User defined PSS/E dynamic model
8. GFM ASPEN Oneliner model if it differs from the GFL model

Subject to Hawaiian Electric's approval, if the manufacturer can certify current standard library dynamic models accurately represent their equipment, standard library dynamic models may be provided and used in lieu of user defined dynamic models. As an example, if the generation facility is a traditional synchronous machine, of which the technology is standardized and widely understood across the industry, it can generally be accurately represented with current standard library dynamic models and thus a user defined dynamic model will not be required.

Along with the technical models, the following documents shall also be submitted for review:

9. User manual for all technical models, including a description of GFM functionality if GFM is used.
10. Generation facility one-line diagram
11. Generation unit manufacturer datasheet(s)
12. Generation unit reactive power capability curve(s)
13. Overlaid generation facility technical model output data for three-phase fault and single-phase fault. (Sample plots are shown in Appendix A)

[1] For specific PSCAD model requirements, refer to http://www.electranix.com/wp-content/uploads/2021/02/Requirements-Rev.-10-Feb-3-2021.pdf

2.2 Background Functional Description of GFM and GFL

Grid Following and Grid Forming are terms with some ambiguity in current industrial usage. For the purpose of this document, the following definitions are provided as high level functional descriptions. For more detailed descriptions of what is required for each of these control modes, it is recommended to carefully review descriptions of the functional tests which will be performed.

Grid Following (GFL) Mode:

Grid Following is defined as follows: An inverter-based resource that relies on fast synchronization with the external grid in order to tightly control the inverter's active and reactive current outputs. If these inverters are unable to remain synchronized effectively during grid events or under challenging network conditions, they are unable to maintain controlled, stable output. Advanced versions of these devices (Advanced Inverters) can provide grid supporting functions such as: voltage and frequency ride-through, volt-VAR, frequency-Watt, volt-watt, etc.; when they are able to remain synchronized.

Grid Forming (GFM) Mode:

Grid Forming is defined as follows: GFM controls set an internal voltage waveform reference such that an inverter with the GFM control shall be able to synchronize with the grid and regulate active and reactive power generation appropriately, regardless of the grid's strength, or operate independently of other generation. An inverter with GFM control shall immediately respond to grid disturbances to support stability of the grid and maintain its own control stability during the system disturbances.

2.3 General requirements for all technical models

All technical models need to represent the whole generation facility, not only a generation unit such as one inverter or as separate files representing pieces of the facility. At minimum, the following equipment shall be included in the single whole generation facility model:

1. Generation unit, such as inverter with DC side model, or a rotating machine with model of exciter and governor.
2. Step up transformer, with correct impedances and winding configuration
3. Collection system, aggregated per WECC guidance[2]
4. Main interconnection transformer, or GSU, with its tap changer if applicable, including correct impedances and winding configuration
5. Grounding transformer if used
6. VAR compensation device, such as cap bank or STATCOM, if applicable
7. Power plant controller (not for ASPEN model)
8. Documentation
9. Gen-tie line (as applicable)

[2] https://www.wecc.org/Reliability/WECCWindPlantPowerFlowModelingGuide.pdf

Equivalent or aggregated representations of the collection system, generator step-up transformers, and inverter systems are acceptable if it can accurately represent the generation facility and its response characteristics.

2.4 Requirements for generation facility PSCAD model

In addition to the general requirements mentioned above, the generation facility PSCAD model shall satisfy requirements as described in the latest version of the PSCAD Model Requirements document from Electranix Corporation (https://www.electranix.com/the-electranix-library/) and provided by Hawaiian Electric.

The control implementation (e.g., turbine controls, inverter controls, protection and measurement algorithms, and plant-level controller) in the generation facility PSCAD model shall implement the actual control code from the equipment. The PSCAD model shall provide output channel of voltage and frequency measured by the Facility and used for Facility's control and protection.

For the generation facility with grid-forming control, a document which describes the general mechanism and implementation of the grid-forming control is required.

2.5 Requirements for generation facility PSS/E power flow model

The generation facility PSS/E power flow model shall be provided for PSS/E versions 33, 34 and 35 . Besides the general requirements mentioned above, the following modeling data shall be provided in the model:

1. Conductor
    a. Impedance, both positive sequence and zero sequence
    b. Rating: Rating A – normal rating, and Rating B – emergency rating
2. Transformer
    a. Nominal voltages of windings
    b. Impedance data: specified R and X
    c. Tap ratios
    d. Min and Max tap position limits
    e. Number of tap positions
    f. Regulated bus
    g. Ratings: Rate A – normal rating; Rate B – emergency rating
    h. Winding configuration
3. Reactive power compensation, if applicable
    a. Fixed Shunts: G-Shunt (MW), B-Shunt (MVAr)
    b. Switched Shunts: Voltage limits (Vhi and Vlow), mode of operation (fixed, discrete, continuous), regulated bus, Binit (MVAr), steps and step size (MVAr)
4. Generation unit
    a. Pmax
    b. Pmin
    c. Qmax
    d. Qmin
    e. Name plate MVA

f. Transformer data: R Tran, X Tran, and Gentap.
g. Voltage control point

2.6 Requirements for generation facility user defined PSS/E dynamic model

The submitted user defined PSS/E dynamic model shall meet the following requirements:

1. The generation facility PSS/E dynamic model shall be provided for PSS/E versions 33, 34 and 35.
2. The project shall be modeled at full output per the project's Interconnection Request.
3. User defined dynamic models must accurately model all the relevant control modes and characteristics of the equipment, such as:
    a. All available voltage/reactive power control modes
    b. Frequency/governor response control modes
    c. Voltage and frequency ride-through characteristics
    d. Power plant controller or group supervisory functionality
    e. Appropriate aggregate modeling capability
    f. Charging mode if applicable (e.g., for a battery energy storage device)
4. Dynamic model source code (.flx, .for, .f90, .f, etc.), or dynamic linked library (.dll), and PSS/E dyr file shall be provided.
5. User defined dynamic model plant-specific settings shall comply with requirements listed in the Power Purchase Agreement, including ride-through thresholds and other specified control settings if applicable.
6. User defined dynamic models related to individual units shall be editable in the PSS/E graphic user interface. All model parameters (CONS, ICONS, and VARS) shall be accessible and shall match the description in the model's accompanying documentation.
7. User defined dynamic models shall have all their data reportable in the "DOCU" listing of dynamics model data, including the range of CONS, ICONS, and VARS numbers. Models that apply to multiple elements (e.g., park controllers) shall also be fully formatted and reportable in DOCU.
8. User defined dynamic models shall be capable of correctly initializing and run through the simulation throughout the range of expected steady state starting conditions without additional manual adjustments.
9. User defined dynamic models shall be capable of allowing all documented (in the model documentation) modes of operation without error.
10. User defined dynamic model shall be accompanied by the following documentation:
    a. A user's guide for each model
    b. Appropriate procedures and considerations for using the model in dynamic simulations
    c. Technical description of characteristics of the model
    d. Block diagram for the model, including overall modular structure and block diagrams of any sub-modules
    e. List of plant-specific settings, which may include:
        i. Ride-through thresholds and parameters
        ii. Plant-level voltage controller settings
        iii. Power ramp rate settings
        iv. ICON flag parameters for specific control modes

v. Deadbands
vi. Initial State of Charge (SOC)

f. Values, names and detailed explanation for all model parameters
g. List of all state variables, including expected ranges of values for each variable

2.7 Requirements for generation facility generic PSS/E dynamic model

The submitted generic PSS/E dynamic model should meet the following requirements:

1. All generic PSS/E dynamic models must be standard library models in PSS/E.
2. The generation facility PSS/E dynamic model shall be provided for PSS/E versions 33, 34 and 35.
3. The project shall be modeled at full output per the project's Interconnection Request.
4. Generic dynamic models must accurately model all the relevant control modes and characteristics of the equipment, such as:
    a. All available voltage/reactive power control modes
    b. Frequency/governor response control modes
    c. Voltage and frequency ride-through characteristics
    d. Power plant controller or group supervisory functionality
    e. Appropriate aggregate modeling capability
    f. Charging mode if applicable (e.g., for a battery energy storage device)
5. PSS/E dyr file shall be provided.
6. Generic dynamic models' plant-specific settings should comply with requirements listed in the Power Purchase Agreement, including ride-through thresholds and other specified control settings if applicable.
7. Generic dynamic models shall be capable of correctly initializing and run through the simulation throughout the range of expected steady state starting conditions without additional manual adjustments.
8. Generic dynamic models shall be accompanied by the following documentation:
    a. A user's guide for each model
    b. Appropriate procedures and considerations for using the model in dynamic simulations
    c. Technical description of characteristics of the model
    d. List of plant-specific settings, which may include:
        i. Ride-through thresholds and parameters
        ii. Plant-level voltage controller settings
        iii. Power ramp rate settings
        iv. ICON flag parameters for specific control modes
        v. Deadbands
        vi. Initial State of Charge (SOC)

2.8 Requirements for generation facility ASPEN model

Besides the general requirements, validation results of three-phase fault current from the generation unit represented in the generation facility ASPEN Oneliner model shall be provided.

3 GENERATION FACILITY TECHNICAL MODEL REVIEW PROCESS

To review the generation facility technical model, the following procedures are performed in the PSCAD and PSS/E environment. A review of the results will be documented and provided to the Customer for confirmation of model acceptance or further model updates.

3.1 Model review in PSCAD

1) Review model data against latest version of the PSCAD Model Requirements document from Electranix Corporation (https://www.electranix.com/the-electranix-library/) provided by Hawaiian Electric. In this step, it will be determined whether the model is complete, generation facility settings are according to the Power Purchase Agreement, and if the model can be compiled and run without any error. Checklists are provided in this document which are useful for both preparing a model submission, and for reviewing a model submission.
2) Initialization test:
   In this step, the generation facility PSCAD model will be determined whether the model initialization is acceptable. Hawaiian Electric requires that:
   1) The PSCAD model shall initialize as quickly as possible (e.g. <1-3 seconds) to user defined terminal conditions.
   2) Project PSCAD model shall initialize properly and that the same power flow and voltage conditions shall be observed between the PSCAD and PSS/E models after initialization.
3) Voltage and frequency ride-through tests:
   In this step, the generation facility PSCAD model ride-through performance will be reviewed by performing voltage and frequency ride-through simulations in PSCAD. The review will focus on the generation facility model dynamic response during and after ride-through and generation facility trip time.
4) Fault simulation tests:
   Two types of fault tested at the Point of Interconnection bus of the generation facility will be performed in this step.
   i) 3-phase to ground fault with 6-cycle clearing time (same as the PSS/E ring down model test described in the following section).
   ii) 1-phase to ground fault simulation with 6-cycle clearing time.

   In this test, fault current contribution from the generation facility observed in the simulation will be reviewed by comparing it against the generation facility technical document.

3.2 Model review in PSS/E

1) Model data review:

Review model data based on the requirements for PSS/E power flow and dynamic model provided by Hawaiian Electric. In this step, the review determines whether the model is complete, generation facility settings is according to the PPA, and model can be compiled and run without any error.

a. Steady State Model Data Review

Review the ratings and impedances of all equipment in the ASPEN Oneliner, PSS/E and PSCAD models and check for discrepancies.

Table 1. Steady State Model Data Review

Equipment	Comments
Gen-Tie Line	PSS/E, PSCAD and ASPEN models should match
Main Power Transformer Impedance	PSS/E, PSCAD and ASPEN models should match
Main Power Transformer Impedance	PSCAD and ASPEN models should match
PV Collector System Data	PSS/E, PSCAD and ASPEN models should match
BESS Collector System Data	PSS/E, PSCAD and ASPEN models should match
Inverter Pad Mount Transformer Impedance	PSS/E, PSCAD and ASPEN models should match
Inverter Pad Mount Transformer Configuration	PSCAD and ASPEN models should match
Inverter Power Flow Data	PSS/E and PSCAD models should match
Voltage Control Point	PSS/E and PSCAD models should match

b. Dynamic Data Review

Compare the various dynamic model parameters and note any discrepancies.

Table 2. Dynamic Model Data Review

Equipment	Comments
Power Plant Controller (PPC)	Review number of PPCs. Should represent actual setup of plant when in service.
Control Flags	PSS/E and PSCAD control flags should match.
Control Bus/Point of Measurement	Control buses should match in PSS/E and PSCAD models.
Frequency Control Dead Band	The frequency thresholds for primary and secondary control should match in the PSCAD and PSS/E models.
Initial State of Charge (SOC)	Make sure the initial state of charge is set up correctly to prevent initialization issues.
Voltage and Frequency Ride Through	The voltage and frequency ride through settings should match in the PSS/E user-written, PSS/E generic and PSCAD models.
P/Q priority data	The P/Q priority flags should match in the PSS/E user-written, PSS/E generic and PSCAD models

2) Flat start test:

PSS/E models shall initialize correctly and be capable of successful “flat start” testing using the 20 Second No-Fault simulation: This test consists of a 20 second simulation with no disturbance applied. Flat run in a two-machine system (one machine is a synchronous machine, e.g., GENCLS model, and the other machine is a project’s model.)

3) Ring down test:

PSS/E models shall initialize correctly and be capable of successful "ring down" testing using the 60 Second Disturbance Simulation: This test consists of the application of a 3-phase fault for 6 cycles at POI bus, followed by removal of the fault without any lines being tripped. The simulation is run for 60 seconds to allow the dynamics to settle.

4) Voltage and frequency ride-through tests:

In this step, the generation facility PSS/E model ride-through performance will be reviewed by performing voltage and frequency ride-through simulation in PSS/E. The review will focus on the generation facility model dynamic response during and after ride-through and generation facility trip time. **The procedures and values listed in this section are illustrative and serve as examples only; ride-through durations shall be tested against the minimum requirements outlined in the respective PPA.**

a. Voltage Ride-Through

- In these simulations, the POI voltage is varied to test the facility's ride-through capabilities and responses to POI voltage excursions. In the PSS/E simulations, two sets of tests are performed: one for testing the ride-through capabilities and the other for testing the responses to voltage excursions. These two sets of tests are similar, except that the grid equivalent representation is different. For the ride-through tests, the grid equivalent is represented by a generator with a very large MVA, which connects to the POI bus directly.
    - *As an example, for the voltage excursion response tests, the grid equivalent may be represented by a 200 MVA generator (actual MVA rating dependent on POI, please consult the Company for representative values) which connects to the POI through a branch with a reactance of 0.1 p.u.*
- In the PSCAD simulations, the focus is on testing the facility's reactive power responses to POI voltage excursions, and not on testing the voltage ride-through capability.

Table 3 shows the voltage excursions that will be simulated in the PSCAD tests.

Table 3. Voltage	**Duration (s)**
1.20	0.8
1.10	2.0
0.88	2.0
0.70	2.0

Each of the above discussed tests were performed for the following three generation dispatches:

i. PV output only: In this dispatch, the PV unit is at maximum output and the BESS unit is online at 0 MW.

ii. BESS output only: In this dispatch, the BESS unit is discharging at maximum output and the PV unit is online at 0 MW.

iii. PV charging BESS: In this dispatch, the PV unit is at its maximum output and is charging the BESS at its minimum level.

b. Frequency Ride-Through

- In these simulations, the system frequency is varied to test the facility's responses to grid's frequency excursions. In the PSS/E tests, high and low frequency excursions are simulated to mimic the frequency ride through thresholds specified in the PPA and the response of the facility is observed. Both the frequency ride-through capability of the facility and its active power response to frequency excursions are tested in the PSS/E simulations.
- In the PSCAD simulations, the focus is on testing the facility's active power responses to frequency excursions, and not on testing the frequency ride-through capability. Table 4 and Table 5 show example frequency excursions that are simulated in the PSCAD tests.

Table 4. Frequency Excursions for PSCAD High Frequency Response Test

Frequency Level (Hz)	Duration (s)
60.1	2.0
63.0	2.0

Table 5. Frequency Excursions for PSCAD Low Frequency Response Test

Frequency Level (Hz)	Duration (s)
59.9	2.0
56.0	2.0

5) Expected Model Performance

a. Matching steady-state model parameters between the PSS/E user-written, generic models and the PSCAD model.
b. Matching control options between the three types of models.
c. Matching voltage and frequency ride-though parameters between the three types of models. The settings should meet the ride-through requirements specified in the PPA.
d. Flat run results do not show any movement for any of the three models.
e. Ring-down simulation results show stable and proper responses, and the responses from the three models should show reasonable matches.
f. Ride-through simulation results should show stable and proper responses, and the responses should show reasonable matches. The ride through performance should meet the PPA requirements.

3.3 GFM Model review in PSCAD and PSS/E

The tests described below will be performed in addition to the GFL model tests described in section 3.1.

Test notes:

- Applicable for generation facilities which have grid-forming control capability
- Assumption is that BESS has available energy and is dispatched suitably for the tests
- Each test will be repeated with three initial operating conditions, as applicable (PV output only, BESS output only, PV charging BESS)
- The project should be configured to be in GFM mode throughout these tests

1) **Able to black start and operate in an electrical island (applicable if project is providing black start capability):**
   Test sequence: energize main power transformer from project side, then connect project to a load, then apply a bus fault at the POI, then remove the fault. Expected results: voltage and frequency should be stable and settle back to close to their nominal values after the disturbances.
2) **Loss of the last synchronous machine:**
   Test system will be a three-machine system including: a synchronous machine modeled by GENROU with a simple excitation system model (e.g., SCRX) and a simple governor model (e.g., TGOV1), a load with both real and reactive components, and duplicates of a project's model. Duplicates of a project's model are utilized here to check if the project is able to share real and reactive power properly with other generators. Test event: trip the synchronous generator. Expected results: voltage and frequency should be stable and settle back to close to their nominal values after the disturbance, within the tolerance of the droop and deadband settings.
3) **Weak grid operation:**
   Test system is the project plant model and an equivalent voltage source behind an impedance connected at the POI. The test will be to gradually decrease MVA of the equivalent voltage source within a range and check if the project's model is able to work with the studied MVA range.
4) **Able to operate in harmony with other converter resources and synchronous machines:**
   Test system is the three-machine system including: a synchronous machine modeled by GENROU with a simple excitation system model and a simple governor model, a load with both real and reactive components, and duplicates of a project's model. Simulation tests to be performed may include load step up/down, ringdown, voltage ride through and frequency ride-through tests. Expected results: voltage and frequency should be stable and settle back to close to their nominal values after the disturbances.
   Particularly related to frequency control characteristics, we will test for configurable frequency droop control and configurable deadband characteristics. The frequency deadband should be settable in the range from +/- 0.01 Hz to +/- 1.0 Hz and the frequency droop shall be settable in the range of 0.1% to 10% with a typical value of 4%. A sample characteristic of frequency droop control with deadband is shown in Figure 1.

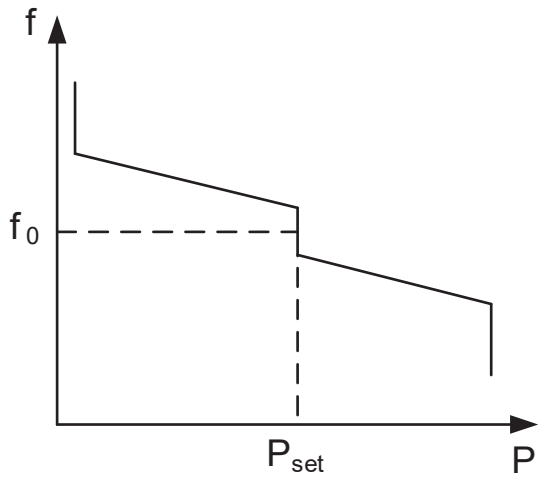

Figure 1 – Frequency Droop Control Characteristic with Deadband

5) **Switching from an electrical island to a grid-connected configuration while in GFM mode (dependent on specific project technology and controls)**
Test system is the two-machine system. Test sequence: energize main power transformer from project side, then connect project to a load (if project model does not have black-start capability, the plant will be initialized using a voltage source which will be switched out after initialization). At this point, the project will be operating in an island. Then switch in the synchronous generator. Expected results: voltage and frequency should be stable and settle back to close to their nominal values after the disturbances.

Tests to be performed for PSS/E models only

6) **Reduction in frequency deviation in GFM mode**
Test system will be a relevant HECO island system model. Test event is loss of a large generator. Project model will be in GFL mode and GFM mode. Result: less degree of frequency deviation is expected when project is in GFM mode than when the project is in GFL mode.

ASPEN Model Check

7) **A review of the ASPEN Oneliner generation models will be performed.**
As mentioned above, two models are expected for each project: one model for GFL mode, and the other for GFM mode. Documentation associated with the models should be provided. The model review will check if the components of a project are modeled properly, such as transformers, equivalent collector system, equivalent generator, etc., and that the model data are consistent to the PSS/E and PSCAD model data. A fault simulation test will also be performed in a two-machine system. Total current at the fault location and contribution from each machine will be reviewed and documented.

4 TYPICAL ISSUES IDENTIFIED FROM THE FACILITY MODEL SUBMITTALS DURING THE PAST RFP PROCESS

1. **Missing documentation**
   Only generation technical facility models are submitted, but no model user manual or any other documentation. Without model documentation, it is very difficult to know the correct procedures of using the technical models and identifying issues during the review.
2. **Model incompleteness**
   Often, the model of a single generation unit, such as an inverter, is submitted instead of model of the whole generation facility, which is insufficient. The model of the generation facility should include models for all equipment listed in the section of "General requirements for all technical models".
3. **Settings in the model**
   Type issues in this category are:
   - The PSCAD (GFL and/or GFM) and PSS/E model ride-through settings are not consistent with the minimum settings defined in the Power Purchase Agreement.
   - Generation MW is not set as defined.
   - Model is set for 50 Hz instead of 60 Hz
4. **Model function issues**
   Some models do not function as expected during different test scenarios. For example:
   - Fault current contribution from the generation facility is higher than what is described in the generation facility datasheet
   - Generation level is not stable with provided settings during the initialization test
   - Inadequately damped oscillations observed in the ringdown test
   - Ride-through performance does not reach minimum requirements defined in the Power Purchase Agreement
5. **Power Plant Controller (PPC)**
   Often, the PPC control had not yet been fully considered when models are submitted, which results in improperly configured PPC controls, or model submissions missing the PPC altogether. The PPC(s) included in the facility model should include coordination functionality between the plant components, and should represent the actual planned implementation.

REFERENCE

[1] New England Iso Planning procedure – Interconnection planning procedure for generation and elective transmission upgrades
[2] ERCOT Planning Guide, 2019
[3] PJM MOD-032 Steady State, Dynamics, and Short Circuit Modeling Data Requirements and Reporting Procedures Document

APPENDIX A: SAMPLE OVERLAID GENERATION FACILITY TECHNICAL MODEL OUTPUT PLOT FOR THREE-PHASE FAULT

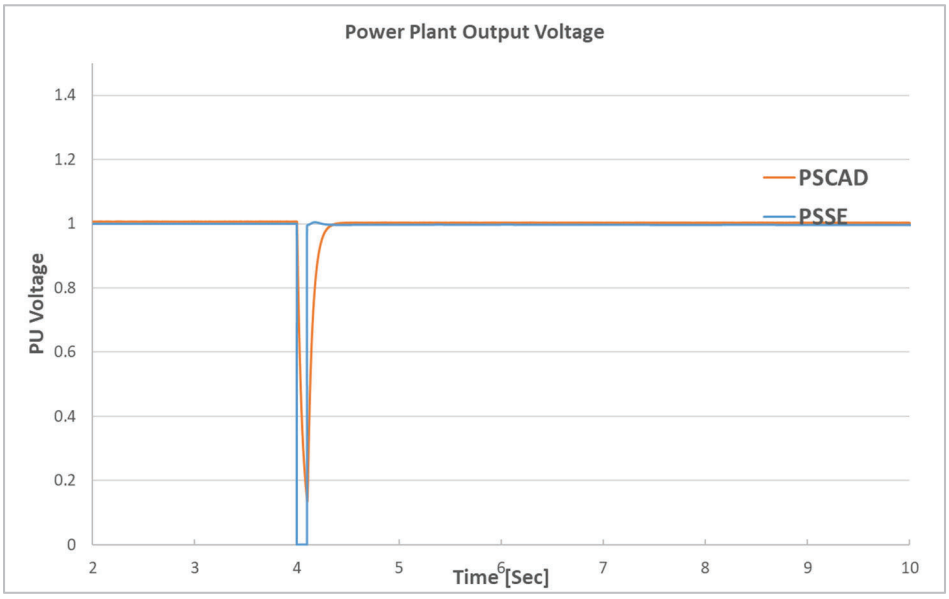

Figure 1: Overlaid plot for power plant voltage

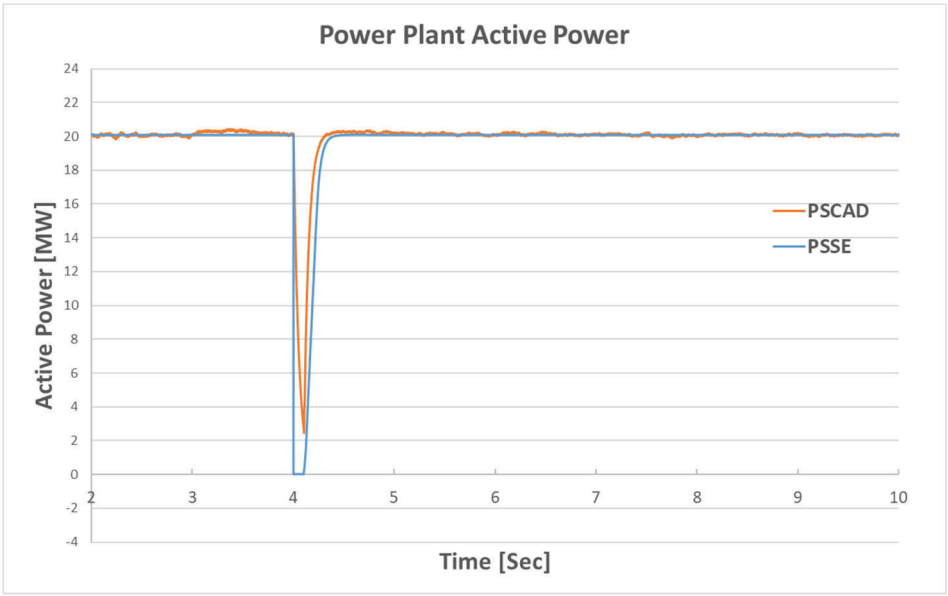

Figure 2: Overlaid plot for power plant active power generation

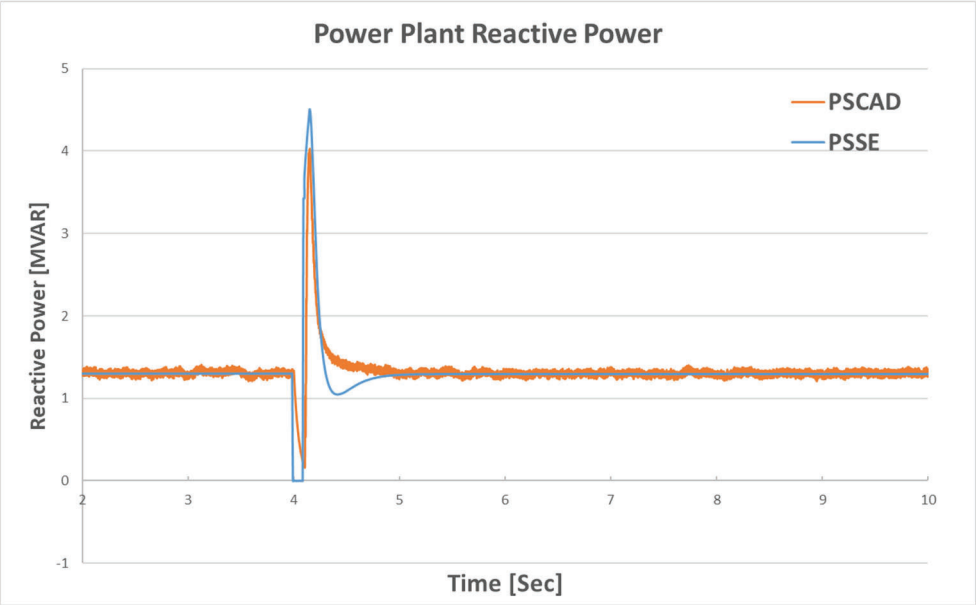

Figure 3: Overlaid plot for power plant reactive power generation

APPENDIX B: SAMPLE TEST SYSTEM TOPOLOGYINFORMATION

On weak grids such as island systems, it is important to test the models using a representative high Thevenin equivalent impedance.

A typical topology of testing circuit which represents Hawaiian Electric system for 46 kV project is shown in Figure 4. Sample 46 kV Thevenin equivalent impedance is available upon request for model testing.

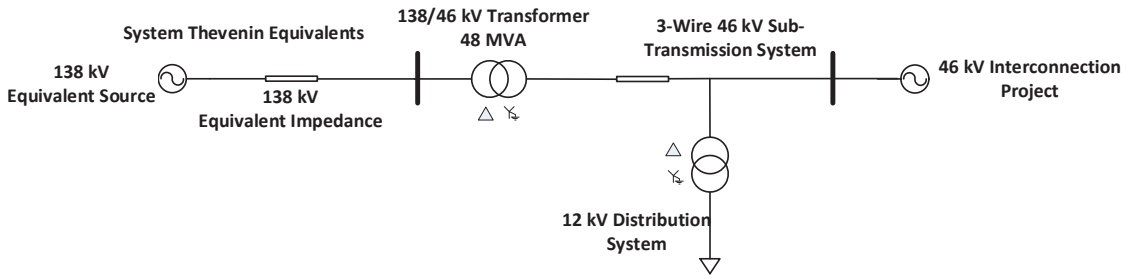

Figure 4: Testing circuit single line diagram for 46 kV project

A typical topology of testing circuit which represents Hawaiian Electric system for 138 kV project is shown in Figure 5. Sample 138 kV Thevenin equivalent impedance is available upon request for model testing.

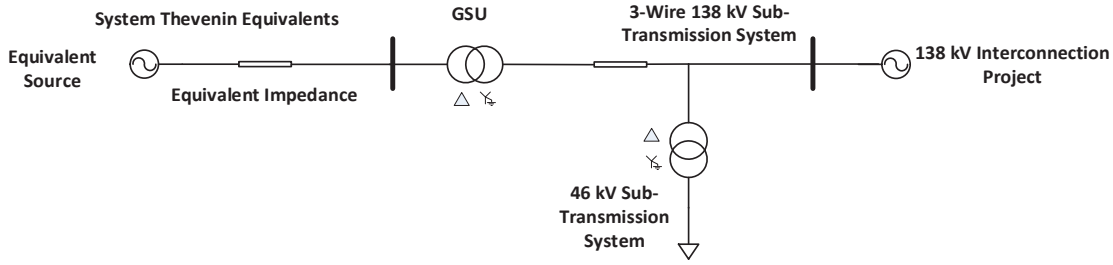

Figure 5: Testing circuit single line diagram for 138 kV project

DETAILED INSTRUCTIONS FOR COMMUNITY OUTREACH PLAN

- The Community Outreach Plan should be as current and explanatory as possible.
    - The Community Outreach Plan information must be included in the information Proposers selected to the Final Award Group make available on their website when the website is posted publicly.
- Proposers selected to the Final Award Group must develop a public Project website, which shall include all the information on the Community Outreach Plan table for their Project.
- Proposers must develop Project presentations that include all the information on the Community Outreach Plan table (sample template provided).
- Due to the uncertainty of the duration of the COVID-19 pandemic, all Proposers are required to plan for both in-person and virtual community meetings. As we near the dates that community meetings are scheduled, in the interest of public health and safety, the conditions at the time will determine if in-person meetings or virtual meetings will be required.
    - Virtual community meetings can either be community televised, or online, but must incorporate technology that allows for live engagement and interaction between the Proposer and community participants.
- Proposers must communicate important information about the Project with stakeholders in advance of community meetings.
- Proposers must perform media outreach (earned media) and advertising (paid media) to raise community awareness of any public meeting. Media advisories (sample attached) must be issued to the following media and organizations a minimum of 30 days prior to a public meeting. Media advisories do not need to be reviewed and approved by Hawaiian Electric, but must be shared with Hawaiian Electric for awareness.
    - For Oahu Projects
        - Star Advertiser
        - Civil Beat
        - Hawaii News Now
        - KHON2 News
        - KITV4 News
        - Neighborhood Boards
    - For Maui Projects
        - Maui News
        - Maui Now
        - Civil Beat
        - Hawaii News Now
        - KHON2 News
        - KITV4 News
    - For Hawaii Island Projects
        - Hawaii Tribune Herald
        - West Hawaii Today
        - Civil Beat
        - Hawaii News Now
        - KHON2 News
        - KITV4 News
- Advertisements must be placed in area community publications.
    - Guidance from the Company can be provided upon request

    - Information in the ads must be consistent with the media advisory
- Public comments in support and in opposition to the proposed Project must be compiled and filed verbatim with the Public Utilities Commission.
- Proposers must work with and inform neighboring communities and stakeholders to provide community members timely information during ALL phases of the project, which must include, but not be limited to the Power Purchase Agreement negotiation period, the permitting process periods, and throughout construction.
- Should any COVID-19 related events interfere with the Proposer's ability to perform the listed actions, Proposer should inform the Company immediately of such effects for Company's consideration and guidance, and possible proposal of alternate actions.

CONTACT: NAME, 808.XXX.XXXX **FOR IMMEDIATE RELEASE**

Email address Date

Media Advisory: Title

Project description to be drafted by developer. Description must include the location of proposed project and supporting background information.

Date: TBD

Time: TBD

Location: TBD

Purpose: To share information about a TYPE (e. g. CBRE solar, etc.) renewable energy project proposed to be developed in COMMUNITY near AREA REFERENCE and to solicit public comments to be filed with the Public Utilities Commission.

Contact: For more information, call 808.XXX.XXXX or visit (website/social media)

# # #

Project Name

Proposer Name

1

Project Benefits

- Details

2

Community Benefits

- Details

3

Proposed Facility Location in/near what City/Area

- Map
- Dimensions of proposed project
- Include all project components

4

Project Description

- Details

5

Site Layout Plan

- Project Layout
- Project Visual Simulations
  - Multiple public vantage points

6

Interconnection Route

- Map

7

Required Government Permits and Approvals

- Preliminary Schedule
- Opportunities for public comment

8

Environmental Impacts

- Preliminary environmental assessment of the site (including any pre-existing environmental conditions)

9

Cultural Impacts

- Identify any cultural, historic or natural resources that will be impacted by the project
- Describe the potential impacts on these resources
- Identify measures to mitigate such impacts.

10

Construction Related Updates

- Plan for reporting construction schedules and activities
  - Including resulting impacts (ex. traffic, noise, and dust) and mitigation plans
  - Begins at least one month prior to the start of scheduled work
    - To extend throughout the construction and development of the project

11

Local Labor and Prevailing Wage Commitment (if any)

- Detailing Proposer's commitment, if any, that 80% of non-supervisory construction and operations workers' hours associated with the construction or repowering of a Project will be paid at the prevailing wage equivalent under HRS Chapter 104 during all periods of construction.
- Describing commitment, if any, to hire qualified construction, operations, and maintenance works who reside in the county where the Project is being constructed, and the State of Hawaii, in that order, before hiring non-resident labor.

12

Where to Find More Information

- Project website
- Proposer email and contact information

13

How to Provide Comments

14

CBRE Stage 2 Model and Interconnection Requirements Study (IRS) Scope

<table>
<tr><th>Island</th><td>O`ahu, Maui, Hawai`i Island</td><td>O`ahu, Maui, Hawai`i Island</td><td>O`ahu, Maui, Hawai`i Island</td></tr>
<tr><th>Size</th><td>250kW ≤ Facility < 1MW
Primary Metered &
Dedicated Transformer
Connecting to 4kV, 12kV</td><td>250kW ≤ Facility < 1MW
Secondary Metered &
Dedicated Transformer
Connecting to 4kV, 12kV</td><td>≥ 1MW
Connecting to 4kV, 12kV
Max Size Allowed – 3MW</td></tr>
<tr><th>Models</th><td>A PSCAD model will be required
for Over-Voltage analysis</td><td>A PSCAD model will be required
for Over-Voltage analysis</td><td>PSS®E generic, PSCAD ASPEN

If providing Grid Forming Capability add:
• Grid Forming PSCAD and Grid Forming PSS®E

For Maui and Hawai`i Island:
Facilities > 2.5MW:
• PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.</td></tr>
<tr><th>Interconnection Requirement Study Scope</th><td>Results of ITR and SR determine if IRS is required and its scope.

If IRS is required:
<table><tr><th>Tasks
(Include selected tasks in the IRS. Exclude tasks that are unselected)</th></tr><tr><td>☒ Interconnection One-Line, Three-Line, and Equipment List</td></tr><tr><td>☒ Project Data Requirements and Facility Technical Model Review</td></tr><tr><td>☒ Review of Existing System Performance (Base-Case)</td></tr><tr><td>☒ Develop Project Model (IRS Case)</td></tr><tr><td>☒ Steady-State Power Flows
☒ Reverse Power Flow
☒ Reactive Power Requirements</td></tr><tr><td>☒ Protection Review</td></tr><tr><td>☐ Voltage Flicker</td></tr><tr><td>☒ Voltage Transients (In-Rush Current)</td></tr><tr><td>☐ System Stability
☐ PSSE Analyses
☐ PSCAD Analyses for Weak Grid Conditions
☐ Grid Forming Analyses</td></tr><tr><td>☒ Ride-Through Requirements</td></tr><tr><td>☐ Unintended Islands
☐ Transient Overvoltage (TrOV)
☐ Unintended Islands Fault Overvoltage (GFOV)</td></tr><tr><td>☐ Harmonics
☐ Harmonics Model Analysis
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1. If Flicker and Unintended Islands checks fail the ITR & SR screening, additional study for these will be required in the IRS
a. If the project connects on a 4kV circuit, then Flicker analysis will be required
2. Voltage Transients Analysis depends on transformer size:
a. 250kW – Analysis not required
b. 250KW< Size < 1MW – Analysis dependent on location on the circuit</td><td>Results of ITR and SR determine if IRS is required and its scope.

If IRS is required:
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(Include selected tasks in the IRS. Exclude tasks that are unselected)</th></tr><tr><td>☒ Interconnection One-Line, Three-Line, and Equipment List</td></tr><tr><td>☒ Project Data Requirements and Facility Technical Model Review</td></tr><tr><td>☒ Review of Existing System Performance (Base-Case)</td></tr><tr><td>☒ Develop Project Model (IRS Case)</td></tr><tr><td>☒ Steady-State Power Flows
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3. If there is a breaker on the high side - Voltage Transients Analysis depends on transformer size:
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Note:
1. System Stability analysis for the portfolio may be required to analyze the aggregated impact of the projects.
2. Grid Forming analysis shall be added to projects providing the Grid Forming capability
3. If an IRS is determined to not be necessary, a technical model checkout will still be required per Section 5.1.1 of the RFP.</td></tr>
<tr><th>Reference Single Line Diagram (See Appendix H)</th><td>Typical Primary Distribution (250kW and larger to less than 1MW) Interconnection Single Line Diagram for CBRE</td><td>Typical Secondary Distribution (250kW and larger to less than 1MW) Interconnection Single Line Diagram for CBRE</td><td>Typical Distribution Primary Interconnection (1MW and larger) Single Line Diagram for CBRE</td></tr>
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<table>
<tr><th>Island</th><td>O`ahu</td><td>O`ahu,</td></tr>
<tr><th>Size</th><td>Connecting to 46kV
Max size – limited to circuit capacity
NO paired BESS</td><td>Connecting to 46kV
Max size – limited to circuit capacity
w/paired BESS</td></tr>
<tr><th>Models</th><td>PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.</td><td>Facilities < 5MW:
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Facilities ≥ 5MW:
Grid Forming Models
PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.</td></tr>
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Grid Forming analyses will be performed for facilities ≥ 5MW.</td></tr>
<tr><th>Reference Single Line Diagram (See Appendix H)</th><td>Typical 46kV Interconnect Single Line Diagram for RFP</td><td>Typical 46kV Interconnect Single Line Diagram for RFP</td></tr>
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Island	Maui, Hawai`i Island	O`ahu	O`ahu,
Size	Connecting to 69kV w/ paired BESS	Connecting to 138kV NO paired BESS	Connecting to 138kV w/paired BESS
Models	Grid Forming Models • PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.	PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.	Grid Forming Models: • PSS®E Generic, PSS®E User Defined, PSCAD, and ASPEN.
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DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2021

Docket No. 2015-0389

Appendix C – Code of Conduct Procedures Manual

Hawaiian Electric

I. INTRODUCTION

The Framework for Competitive Bidding ("Framework") adopted on December 8, 2006, by the Public Utilities Commission of the State of Hawaii (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 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 ("RFP") 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. The proposed *Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for Community-Based Renewable Energy* (the "Code of Conduct") requires the Companies to also propose this *Code of Conduct Procedures Manual* (the "Procedures Manual") to implement the requirements of the Framework and the Code of Conduct.

This Procedures 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 system resources. This Code of Conduct Procedures Manual has been developed for the Companies' Community-Based Renewable Energy RFPs 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, the Company Self-Build team, 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 the Community-Based Renewable Energy 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 and Tariff Rule 19.

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 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 – 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 of the Company who prepare a proposal to be submitted to the Company in response to a Company RFP.
- ATRs – The Affiliate Transaction Requirements, issued by the Commission, applicable to the Companies and Affiliates, attached as Exhibit B to Order No. 36112 issued on January 24, 2019 in Docket No. 2018-0065.
- Code of Conduct – The *Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for Community-Based Renewable Energy* 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 system resource proposal in response to an RFP. The Code of Conduct follows the requirements described in Section IV.H.9.c of the Framework.

- Code of Conduct Acknowledgement – The Competitive Bidding Code of Conduct Acknowledgement of Receipt form acknowledging review of, and agreeing to abide by, the Code of Conduct and this Procedures Manual.
- Communications Log – A written record to note activities and/or information shared between the Company RFP Team or Company Self-Build Team with Shared Resources or Unassigned Company Resources, accessed via the RFP Communication Tool Kit SharePoint Site.
- Companies' Executive in Charge – The Companies' 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 Companies' of the Code of Conduct. The Companies' 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 Companies, 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. Subject to the transfer rules specified herein, the Company RFP Team will have fixed team members who will not have any involvement with the Company Self-Build Team for the subject RFP.
- Company Self-Build Team – The Company personnel and outside consultants responsible for the development of the Company's self-build responses to the RFP. Subject to the transfer rules specified herein, the Company Self-Build Team will have fixed team members who will not have any involvement with the Company RFP Team for the subject RFP.
- 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 Company's public filings with the Commission.

- Director of Renewable Acquisition – The supervisor of the Division that will oversee the Company's competitive bidding process.
- 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.
- Energy Contract Manager – The staff position(s) within the Company's Renewable Acquisition Division responsible for managing the Company RFP Team(s). The Energy Contract Manager shall be a member of the Company RFP Team he/she manages.
- 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 appointed by either the Commission or utility 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 Energy Procurement - The supervisor of the department within the Company's Renewable Acquisition Division responsible for directing the resources responsible for the implementation of the competitive bidding process pursuant to the Framework. The Manager of Energy Procurement will report to the Director of Renewable Acquisition on the status of the competitive bidding process and shall be a member of the Company RFP Team.
- Non-Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal non-price related criteria as set forth in these RFPs. Non-Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Non-Wires Alternative - An electricity grid project that uses non-traditional transmission and distribution (T&D) solutions, such as distributed generation (DG), energy storage, energy efficiency (EE), demand response (DR) and grid software and controls, to defer or avoid the need for conventional transmission and/or

distribution infrastructure investments.

- Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal price related criteria set forth in these RFPs. Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Proposer – Entity who submits or plans to submit a proposal in response to a Company-issued RFP. An Affiliate of the Company or a Company Self-Build Team participating in the RFP and submitting a proposal shall be considered a Proposer.
- RFP – A written request for proposals issued by one of the Companies to publicly solicit bids to supply future system resources to the Company pursuant to the competitive bidding process established in the Framework.
- Roster – A consolidated list of members that comprise the Company RFP Team, Company Self-Build Team, Shared Resources and Unassigned Company Resources located in the RFP Communication Tool Kit SharePoint Site. Company employee names and titles and consultants in their designated role will be identified.
- Shared Resource – Company employees and consultants who, because of the scarcity of their expertise within the Company, are designated and authorized to provide information or input to both the Company RFP Team and the Company Self-Build Team (but not any Affiliate Team) and is not a resource dedicated to either team. For example, Shared Resources may include an environmental attorney and members of the Company's Risk Management Department.
- Unassigned Company Resource – Company employees unassigned to an essential team that may be called upon by the Company RFP Team and/or the Company Self-Build Team (but not any Affiliate Team) to assist in meeting unforeseen tasks for the RFP or the self-build proposal. For example, the Company RFP Team may be unable to evaluate an unforeseen technical specification included in a bid. In that event, the Company RFP team would need to request assistance from a Company employee or a consultant that is not already assigned to an essential team and possesses the specific expertise. Such personnel are intended to assist the requesting team only in an ad hoc manner, limited in scope and purpose to the particular task required.

III. STATEMENT OF OBJECTIVES

On April 9, 2020, the Commission issued Order 37070, commencing Phase 2 of the Community-Based Renewable Energy Program ("Phase 2"). Phase 2 requires the Companies to implement competitive bidding to procure CBRE projects on all islands served by the Companies. These procurements will be concurrent and overlapping. Subsequent phases of CBRE may require further procurements through competitive bidding. Accordingly, under the Framework and the Code of Conduct, for each of the competitive procurements under the program, 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 CBRE program requirements.

Given that multiple RFPs for CBRE, including and in addition to other RFPs currently being administered by the Companies, will be active at the same time, and because the Companies must work expeditiously, 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 endeavor to create, designate and maintain the Roster at all times for quicker and more decisive implementation across all active RFPs. Subject to the transfer rules specified herein, the Roster will be maintained for the durations of the RFPs. 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 Procedures Manual address (1) communication requirements and procedures associated with the relationship between utility employees (Company RFP Team, Company Self-Build Team, Shared Resources and Unassigned Company Resources); (2) communication requirements and procedures associated with the relationship between the Company RFP Team, the Company Self-Build Team and Proposers; and (3) communication requirements associated with the relationship between Company management and the Company RFP Team.

The Code of Conduct and this Procedures Manual also include procedures for the sharing of resources, where appropriate, by the Company RFP Team and the Company

Self-Build Team for the purposes of completing their efforts to effectively evaluate an RFP or to submit a bid in response to an RFP. The small size of the Companies and limitation of resources will require specialized services, information exchange and sharing of resources in certain limited circumstances. Company personnel and consultants identified as "Shared Resources" shall be designated by the Companies for this specific purpose.

IV. ORGANIZATION AND COMMUNICATION RESPONSIBILITIES

This section outlines the RFP organizational structure for the development of the RFP and the Company self-build options and the organization's responsibilities to ensure that communications between Company personnel and consultants working on their respective RFPs or self-build projects are conducted in a fair, consistent, and equitable basis so that the Company Self-Build Team does not enjoy any unfair advantage over other Proposers responding to an RFP.

A. Organization

The Companies shall identify and maintain two separate teams to facilitate the independence and objectivity of the Company resources working on an RFP and ensure an arms-length relationship with the resources working on the Company's self-build project to avoid any real or perceived inequity in an RFP process. The two essential teams shall be the "Company RFP Team" and the "Company Self-Build Team."

Other limited Company resources, such as select staff from various functional areas of the Company that are in short supply and thus cannot be dedicated solely to either team, may be designated as "Shared Resources" to perform services for the Company RFP Team and Company Self-Build Team. Shared Resource employees are allowed to carry on with both their RFP (for either the Company RFP Team and/or the Company Self-Build Team) and regular functions throughout the resource planning process (including the development of any Company Parallel or Contingency Plan as defined in the Framework), which may require communications with or services performed for the Company Self-Build Team. Shared Resource employees, however, will not participate in the evaluation and selection process of proposals submitted in response to

an RFP. Rules for communications between Shared Resources and the essential teams are specified below.

Company employees unassigned to an RFP may be called upon by the Company RFP Team, Company Self-Build Team, or both for help to meet unforeseen tasks. After completing the Code of Conduct training, these "Unassigned Company Resources" are eligible to assist on an ad hoc basis with the requirement that all communications as an Unassigned Company Resource must be memorialized and logged in the same manner as communications with Shared Resources on the Communication Log. If an Unassigned Company Resource is called upon repeatedly for a substantial amount of assistance by a particular team, the employee should be assigned to such team or evaluated for designation as a shared resource.

B. 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 Company RFP Team will be comprised of a Price Evaluation Team and a Non-Price Evaluation Team and 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, siting/land use, environmental, transmission planning, fuel procurement, legal, financial planning, system operations, integrated resource planning, generation planning, production cost analysis, and others as needed.

The Price Evaluation Team and the Non-Price Evaluation Team 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 Priority List.

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

2. The Company Self-Build Team. The Company Self-Build Team, tasked with preparing any Company proposal to be submitted by the Company in response to a Company RFP, will consist primarily of Company employees, along with possible outside consultants with backgrounds in a number of disciplines necessary to complete a competitive proposal in response to a Company RFP. The members of the team will include professionals with experience in the following areas of expertise: engineering, siting/land use, environmental, transmission planning, fuel procurement, legal, financial planning, system operations, integrated resource planning, generation planning, production cost analysis, and others as needed.

3. Affiliate Team. Any Affiliate Team will be comprised solely of employees and consultants of the Affiliate and no Company employee or consultant shall serve as a member of an Affiliate Team; provided, however, that a consultant may perform services for an Affiliate and the Company so long as appropriate "walls" are established satisfactory to the Company that ensures that employees of the consultant working for the Affiliate Team do not also perform work for the Company nor communicate with employees of the consultant performing work for the Company, and vice versa. The Company will inform consultants providing services for the Company RFP Team of these separation requirements, and will seek confirmation in writing from any consultant performing services for an Affiliate and the Company that such separation requirements will be met. Affiliate Teams will be considered and treated as separate independent third-party Proposers for all purposes within any RFP and shall have no access to, interaction or communications with Shared Resources or Unassigned Company Resources for the purpose of completing a proposal in response to any RFP. Affiliate Teams shall also be subject at all times to the terms, conditions and restrictions specified in the Company's ATRs.

4. Transfers between Teams. As members of both the Company RFP

Team and the Company Self-Build Team are intended to be fixed, transfers between teams should not be permitted. However, there will be instances where a member of a particular team (whether Company RFP or Company Self-Build) transfers to a position in which he/she may be requested, as part of his/her new job responsibilities, to participate as a member of the other team. Such employee shall not be permitted to transfer from one team to the other during the pendency of any particular RFP (or stage or phase of a particular RFP). After completion of the RFP (or stage or phase of a particular RFP) under which the employee recently participated, the employee may transfer to the other team under the following conditions: (a) the employee is prohibited from disclosing any Confidential Information known to such employee as a result of being a member of his/her former team with members of the new team he/she is joining; and (b) for a period of one (1) year, such employee shall not participate or be involved in the evaluation of any subsequent stage(s) or phase(s) of a prior RFP which such employee participated in with his/her former team.

Transfers of employees between the Company and any Affiliate and their subsequent work on RFPs shall be subject to the terms, conditions and restrictions specified in the ATRs.

C. Communications Protocols

1. Overview and General Requirements.

The Company has developed policies and procedures governing communication between the Company RFP Team, the Company Self-Build Team, Shared Resources, 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 Company self-build and/or 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, Company Self-Build Team and Shared Resources shall read, acknowledge and sign the Code of Conduct Acknowledgement. Unassigned Company Resources who are called upon by the Company RFP Team or Company Self-Build Team for help to meet unforeseen tasks shall also read, acknowledge and sign the Code of Conduct Acknowledgement.

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.

In cases where staffing and resources are limited or constrained, the Company may identify Shared Resources or those employees eligible to provide information or serve as a resource to both the Company RFP Team and the Company Self-Build Team. Specific rules to log communications with the Company RFP Team or the Company Self-Build Team are described below.

Shared Resources will not have access to the Company's shared drive established for the RFP process which will include the documentation of the bid evaluation results.

Team members should clearly mark all e-mails, documents, or other communications that contain Confidential Information and make clear which team should not receive it with the following header or a substantially similar message: "This communication contains self-build information that must be kept confidential. DO NOT copy, forward, or discuss the contents with Company RFP Team members" OR "This communication contains Company RFP Team information that must be kept confidential. DO NOT copy, forward, or discuss the contents with Company Self-Build Team members."

2. Communications Between the Company RFP Team and

Proposers, including the Company Self-Build Team and any Affiliate Team.

During the RFP process, the Energy Contract Manager 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 Company Self-Build Team and/or Affiliate Team shall be considered a Proposer for communication purposes and any request for information from the Company Self-Build Team or 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, including the Company Self-Build Team and any Affiliate Team, 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 provided to the IO for monitoring purposes via email or the PowerAdvocate messaging system. 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:

A. 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; and (2) Confidential Information in documents may be transmitted to approved recipients through the Company's secure email system.

B. 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.

C. 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 the particular applicable RFP. Questions and responses that do not contain Confidential Information and which are deemed relevant to all Proposers will be published without identifying information via the Company RFP website.

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.

g. A single exception to the communication process outlined above shall be instituted for the purpose of facilitating the verification of proposed project models and documentation required to perform the IRS. For this limited scope, the Company's Manager of Interconnection Services will serve as the primary contact person for all such interconnection communications with the Proposers on the Priority List, provided that all necessary confidentiality and

non-disclosure agreements are in place. The Manager of Interconnection Services and personnel in the Interconnection Services Department shall be members of the Company RFP Team. Interconnection communications will be limited to a Proposer's bid and no more information other than as necessary to facilitate such communications will be permitted. Discussion of locations of proposed projects shall be limited to that necessary only to determine the interconnection requirements of such project. The IO shall have the right to monitor all such communications in his/her discretion.

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 Company 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 Confidential Information. The IO will coordinate all activities through the Energy Contract Manager. The IO will be invited to participate in any meetings or discussions between the Company 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 the Company Self-Build Team or any Affiliate Team.

Any communication between the Company RFP Team and the Company Self-Build Team or any Affiliate Team with respect to the RFP shall be handled no differently than with Proposers and other outside parties. Accordingly, the Company Self-Build Team or any Affiliate Team will be required to submit any questions or information requests to the Company RFP Team via the Company RFP website and all responses will be provided in the same manner as to other Proposers. Accordingly, as stated in Section 2 above, responses will be provided to the IO for monitoring purposes via email or the PowerAdvocate messaging system. Members of the Company RFP Team are prohibited from providing any input into the development of the self-build option by the Company or an Affiliate. Company RFP Team members are prohibited from sharing any Confidential Information (i.e., detailed evaluation criteria, other proposals, etc.) with any Company Self-Build or Affiliate Teams except in accordance with the procedures in the Code of Conduct, this Manual or the RFP.

Company RFP Team members and Company Self-Build Team members may continue to work with each other on projects not related to the RFP. Further, members of each respective team do not have to be physically separated from each other, but members of each team must make reasonable efforts to keep all Confidential Information (including electronic data) secure and inaccessible to the other team.

Company RFP Team members and Affiliate Team members may continue to work with each other on matters not related to the RFP as permitted under the ATRs.

6. Communications among the Company RFP Team, the Company Self-Build Team and Shared Resources.

Shared Resources may provide services to the Company RFP Team and the Company Self-Build Team (but not any Affiliate Team). Shared Resources shall be limited as much as possible to instances where Company resources cannot provide a dedicated member to the Company RFP Team and the Company Self-Build Team at the same time and still provide the necessary functions of its area to the Company as a whole. Shared

Resources are expressly prohibited from providing any information developed on behalf of the Company RFP Team to the Company Self-Build Team or any information developed on behalf of the Company Self-Build Team with the Company RFP Team, except through the formal communication process outlined above, i.e., through the Company RFP website.

Additionally, 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 or the Company Self-Build Team that pertain to the RFP shall be maintained on the Communications Log. The RFP Communication Tool Kit SharePoint Site will be set up and managed by the Energy Contract Manager to provide an easy to use and understand mechanism to log and memorialize these conversations.

Shared Resources will not have direct access to the Company's shared drive developed for the RFP process which will include documentation of the bid evaluation results.

7. Communications between the Company RFP Team, the Company Self-Build Team and any Unassigned Company Resource or consultant that is not a Shared Resource.

There may be times where a Company RFP or Company Self-Build team (but not an Affiliate Team) member may need ancillary or other ministerial or administrative assistance that requires communication and/or assistance from Company personnel who are neither on any team nor considered a Shared Resource. 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 other team, be it the Company RFP or Company Self-Build 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.

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 Energy Contract Manager 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 or the Company Self-Build Team that pertain to the RFP shall be maintained on the Communication Log. The RFP Communication Tool Kit SharePoint Site will be set up and managed by the Energy Contract Manager to provide an easy to use and understand mechanism to log and memorialize these conversations.

e. If assistance from an Unassigned Company Resource becomes more than occasional or more substantive than ancillary, ministerial or administrative services, the Unassigned Company Resource should be considered for inclusion on the team that he/she has been assisting on such basis. Additionally, the Unassigned Company Resource may also be considered for inclusion as a Shared Resource. Members of the Company RFP Team and/or Company Self-Build Team shall consult with the Company executive for resolution.

8. Communications between the Company RFP Team, the Company Self-Build Team and Company Management.

The Company RFP Team and the Company Self-Build Team will necessarily require management approval of the RFP and the Company Self-Build Team proposal. Because of the size of the Company, it may be possible that a single employee (at whatever level) (the "Approver") may have approval responsibility for matters affecting the RFP and the Company Self-Build Team proposal. Approvers in this situation must use their best judgment in making decisions reviewing and approving matters for the respective teams. The Code of Conduct must be adhered to in these situations and the Approver must not communicate matters learned from the Company RFP Team with the Company Self-Build Team.

If an Approver feels that he/she cannot manage this potential conflict, the Approver is recommended to consult with his/her immediate supervisor to determine whether such higher authority could be appointed with the task of reviewing and approving matters for a designated team, either the Company RFP Team or the Company Self-Build Team. In matters where a team of employees (including one or more Approvers) is responsible for reviewing and approving matters for the respective teams, approving employees (from whatever level, including executives) with information from reporting personnel beneath them from both the Company RFP Team and the Company Self-Build Team may consider recusing himself/herself from the decision making if such employee cannot objectively make a decision on the matter.

Finally, an Approver may be a member of the Company RFP Team and have a subordinate reporting to him/her that is a member of the Company Self-Build Team (or vice versa). In such situations, because the Code of Conduct prohibits communication between the teams, the Approver must recuse himself/herself from the decision making and request his/her manager to review and approve the matter in his/her place.

In all instances, it is possible that any particular situation above may be addressed and/or resolved by the terms and conditions of the Company's internal code of conduct implemented for all employees and consultants of the Company. As appropriate, an Approver or any other team member, Energy Contract Manager or Company executive in Charge may involve the Company's Corporate Compliance Officer for input and possible

resolution under the Company's internal corporate code of conduct.

V. WHEN THE CODE OF CONDUCT BECOMES EFFECTIVE

A. Prior to development of the requirements for any particular RFP, the Code of Conduct for that RFP will be activated. However, if the Company Self-Build Team determines at any time that it will not pursue a self-build option for a particular RFP, the Code of Conduct may be de-activated.

B. Upon the activation of the Code of Conduct, members of the Company RFP Team and the Company Self-Build Team must then conduct activities on the RFP or self-build process 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 or a self-build option except through the formal communication processes outlined above.

C. Immediately upon assignment to a Company team (RFP or Self-Build), designation as a Shared Resource, or request to assist as an Unassigned Company Resource, each such employee or consultant must review this Manual, and sign the Code of Conduct Acknowledgement.

D. Within the RFP process, after a member has been assigned to a particular Company team (RFP or Self-Build), he or she will not be able to transfer to the other Company team during the pendency of any particular RFP (or stage or phase of a particular RFP). It is the responsibility of each team to fill vacant team positions with employees that have not been previously assigned as a team member for a team until the PPA negotiations have been concluded and the final contracts are executed.

E. Each employee and consultant working on the RFP shall review the Code of Conduct and sign the Code of Conduct Acknowledgement attesting to his/her compliance with the Code of Conduct until the employee is no longer working in the position he/she was in while working on the RFP.

F. The Energy Contract Manager will be responsible for maintaining the Roster and the signed Code of Conduct Acknowledgements. 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. Prior to development of the requirements for any particular RFP, a Roster listing employee (with their title) and consultants in their designated role; Company RFP Team, Company Self-Build Team, Shared Resource or Unassigned Company Resource. When the IO is appointed, this Roster shall be provided to him/her. The Roster shall be placed in the RFP Communication Tool Kit SharePoint Site so that any Company personnel can access the database to determine the identity of the respective teams and Shared Resources.

B. Upon the finalization of the Roster for the RFP, the Energy Contract Manager 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, the Company Self-Build Team, Shared Resources or Unassigned Company Resources, have acknowledged receipt of the Code of Conduct and his or her responsibility to comply with the Code of Conduct by submitting the Code of Conduct Acknowledgement (with electronic acknowledgment being acceptable). If an employee or consultant is later added to a team, the Energy Contract Manager shall also verify that such employee or consultant has submitted the Code of Conduct Acknowledgment.

C. Prior to any solicitation for comments or questions to the RFP, establishment of the Company email address to accept requests for information from Proposers, including the Company Self-Build Team or any Affiliate Team.

D. Prior to the drafting of any documents for any particular RFP, establishment of the Company-secured site that houses the accessible database (such as SharePoint).

VII. WHEN THE CODE OF CONDUCT TERMINATES

A. The Code of Conduct for a specific RFP will terminate after the following two conditions are met 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 Manager of Energy Procurement 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
- Communications Log
- Roster

IX. APPLICABILITY OF THE ATRs

Except as specifically made applicable under Section V.C.1.i of the ATRs with respect to wholesale power procurement from Affiliates, the ATRs shall not apply to RFP matters covered by the Framework, the Code of Conduct and this Procedures Manual as it relates to the Companies' interactions between the Company RFP Teams and Affiliate Teams. Reference to the ATRs in the Code of Conduct and/or this Manual are specifically

for matters outside the Companies' administration of the RFP; provided, however, that such applicability may be revised as necessary and as may be directed by the Commission for any RFP.[1]

[1] See Decision and Order No. 35962, filed on December 19, 2018, in Docket 2018-0065, at 56-57.

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix D – PowerAdvocate User Information

Hawaiian Electric

PowerAdvocate®

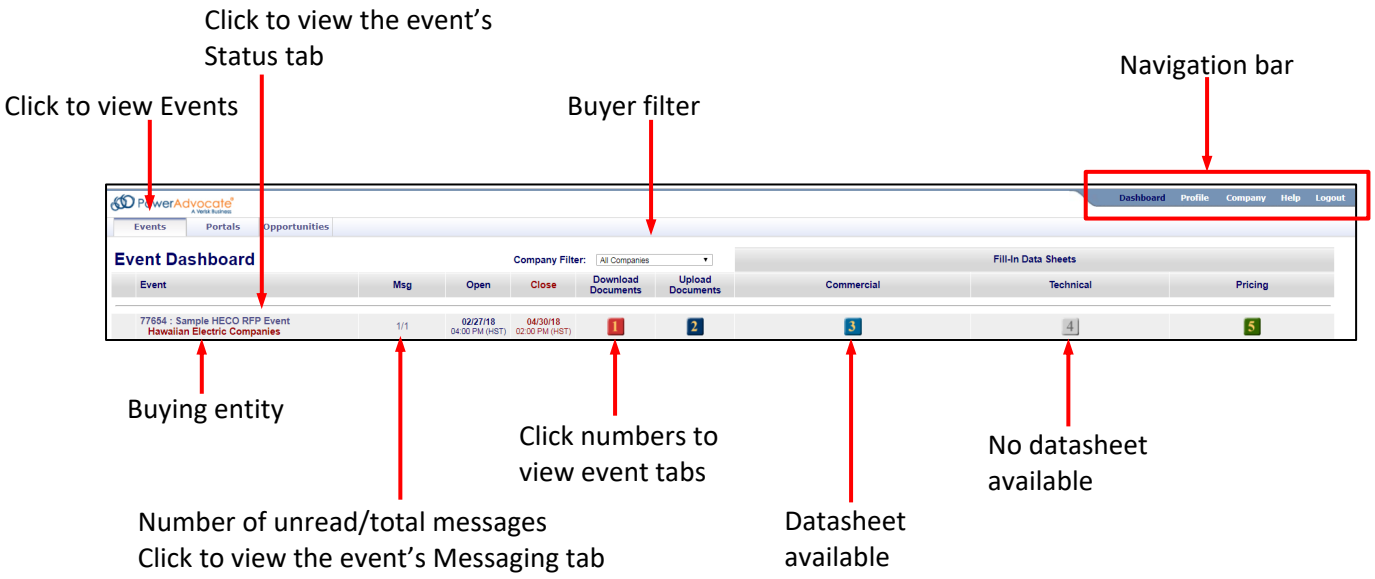
Sourcing Intelligence Quick Start for Suppliers

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.

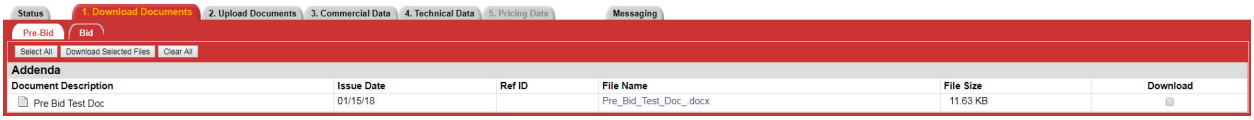


- Click an event name to view its Status tab, which displays a summary of your activity and key event dates. To view specific details of an event, click the buttons 1-5 to view the corresponding tab.
- To return to the Dashboard, click **Dashboard** in the navigation bar at the top of the window.
- An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

PowerAdvocate®

Downloading Bid Packages

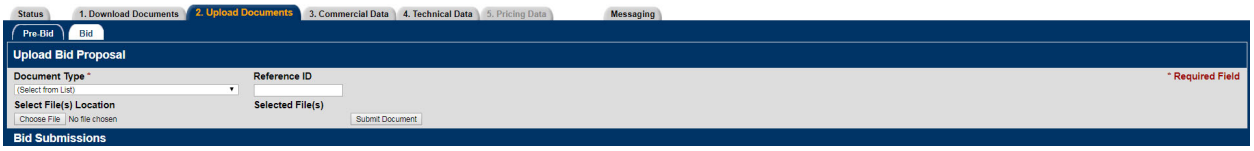
All of the Buyer's bid package documents (if any) are centrally stored on the PowerAdvocate Platform. To view bid documents, click "1" on your Dashboard or on the **1. Download Documents** tab from within the event.



- 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**.

PowerAdvocate®

Datasheets

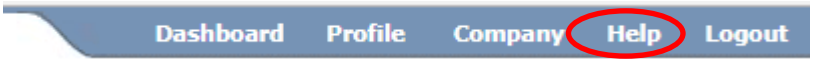
Datasheets (3. Commercial Data, 4. Technical Data, 5. Pricing Data) will not be used in this RFP event. All Proposal information will be uploaded for submission through the 2. Upload Documents tab. Buttons/tabs are grayed out if the event is not using a particular type of datasheet.

Communicating with the Bid Event Coordinator /Company Contact

Suppliers should use Email to contact the Bid Event Coordinator /Company Contact while the bid event is open. In these CBRE RFPs, PowerAdvocate Messaging will not be used.

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.

DRAFT

REQUEST FOR PROPOSALS

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FOR

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O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix E – Mutual Confidentiality and Non-Disclosure Agreement

Hawaiian Electric

APPENDIX E
MUTUAL CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT
Independent Power Producers – ("IPPs")

This Mutual Confidentiality and Non-Disclosure Agreement (this "Agreement") is effective as of _____, 20____ (the "Effective Date") between [INSERT NAME OF IPP], a [State of incorporation/organization] [type of entity] ("IPP") and Hawaiian Electric Company, Inc., Maui Electric Company, Limited, and Hawaii Electric Light Company, Inc., each a Hawaii corporation (collectively, the "Companies"). 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 Companies have or intend to issue a Request for Proposals ("RFP") for Community-Based renewable energy projects. The IPP has or intends to submit one or more proposals for a nominal [ ] MW [TYPE OF FACILITY] facility located at [LOCATION] on the island of [ISLAND], State of Hawai'i ("Proposal").

In connection with the IPP's proposed project, the Companies may conduct an interconnection requirements study ("IRS") to establish the requirements for interconnection of the IPP's proposed project to the Companies' electric grid. The RFP process may also result in the award of a potential power purchase agreement, the terms of which must be agreed upon by the parties ("PPA Negotiations"). For purposes of this Agreement the term "Project" refers to the RFP, Proposal, potential IRS and PPA Negotiations.

In order to evaluate the Project, either party may from time to time provide to the other party certain Confidential Information. The parties are willing to provide such Confidential Information to each other 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, confidential or proprietary 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 Companies' generation, transmission, and distribution systems (e.g., engineering and operating characteristics of the Companies' 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 Recipient 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 of 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 Proprietary 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 Companies 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 IPP nor any of its Representatives will oppose action by the Companies 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 Hawaii Revised Statutes Chapter 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 Recipient’s 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 Recipient's 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 Companies 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 to any patents or patent applications of the Provider.

11. Publicly Traded

The IPP acknowledges that the Companies' holding company is a publicly traded company, and that Confidential Information of the Companies may constitute material, non-public information with respect to the Companies. The IPP understands, and will advise its Representatives to whom Confidential Information of the Companies 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) Companies:

By Mail:

Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840
Attn: Manager of Procurement, Renewable Acquisition Division

Delivered By Hand or Overnight Delivery:

Hawaiian Electric Company, Inc.
Central Pacific Plaza
220 South King St, 21st Floor
Honolulu, HI 96813
Attn: Manager of Procurement, Renewable Acquisition Division

By E-mail:

Hawaiian Electric Company, Inc.
Attn: Manager of Procurement, Renewable Acquisition Division
Email: renewableacquisition@hawaiianelectric.com

With a copy to:

By Mail:

Hawaiian Electric Company, Inc.
Legal Department
P.O. Box 2750
Honolulu, Hawaii 96840

Delivered By Hand or Overnight Delivery:

Hawaiian Electric Company, Inc.
American Savings Bank Tower
1001 Bishop Street, Suite 1100
Honolulu, Hawaii 96813
Attn: Legal Department

By E-mail:

Hawaiian Electric Company, Inc.
Legal Department
Email: legalnotices@hawaiianelectric.com

(2) [IPP]

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 Hawaii. 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 Hawaii. 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 Hawaii is an inconvenient forum or improper venue.

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 or 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. 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.

22. 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.

23. 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.

24. 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.

HAWAIIAN ELECTRIC COMPANY, INC.

By: _____
Print Name: _____
Its: _____

MAUI ELECTRIC COMPANY, LIMITED

By: _____
Print Name: _____
Its: _____

HAWAII ELECTRIC LIGHT COMPANY, INC,

By: _____
Print Name: _____
Its: _____

"Companies"

[Insert Name of IPP]
_____

By: _____
Print Name: _____
Its: _____

"IPP"

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix F – Description of Available Sites

Hawaiian Electric

HAWAIIAN ELECTRIC COMPANIES
COMMUNITY-BASED RENEWABLE ENERGY PROJECTS RFP
DESCRIPTION OF AVAILABLE SITES

Land Request for Information

On June 15, 2020, Hawaiian Electric issued a Land Request for Information ("Land RFI") seeking information on available land and rooftop space for potentially siting future utility scale renewable energy projects on the islands of O'ahu, Maui, Moloka'i, and Hawai'i. This effort is a new solicitation from the previous Land RFI that was issued on December 12, 2016 in advance of the Company's Stage 1 and Stage 2 RFPs. The information that has been gathered through this RFI is available upon request by following the instructions at http://hawaiianelectric.com/landrfi.

This information is being provided for proposers' consideration only. Project proposals submitted in response to this RFP are not required to be sited at a location identified through the Land RFI. The Hawaiian Electric Companies also make no representations as to the suitability of the listed sites for renewable energy production with regard to resource quality, interconnection constraints, zoning and permitting issues, community support, or other issues. Proposers should perform their own evaluation of these factors in determining whether a site is suitable for renewable energy project development. After further evaluation, proposers that are interested in any of the identified sites are invited to engage in further discussions directly with landowners to negotiate any required rights to use the property.

Additional Information

Additionally, the following links to a few publicly available resources relating to renewable energy project siting and development from the Hawai'i State Energy Office are being provided for use at proposers' sole discretion:

Project Permitting Assistance and Resources

http://energy.hawaii.gov/developer-investor/project-permitting-assistance-and-resources

Provides numerous resources to support more informed and appropriate project siting and permitting, including the Permit Guide, Renewable Energy Permitting Consultants, DOH, ePermitting Portal, Renewable EnerGIS, Permitting Wizard, and the Renewable Energy Projects Directory.

Hawai'i Clean Energy Programmatic Environmental Impact Statement
http://energy.hawaii.gov/testbeds-initiatives/hawaii-clean-energy-peis/peis-overview

The Hawaii Clean Energy Programmatic Environmental Impact Statement (PEIS) analyzes, at a programmatic level, the potential environmental impacts of clean energy activities and technologies in the following clean energy categories: (1) Energy Efficiency, (2) Distributed Renewables, (3) Utility-Scale Renewables, (4) Alternative Transportation Fuels and Modes, and (5) Electrical Transmission and Distribution.

Hawai‘i Statewide GIS Program
http://planning.hawaii.gov/gis/

Provides Hawai‘i GIS data and other resources to support site identification and analysis.

Aloha Aina: A Framework for Biocultural Resource Management in Hawai‘i’s Anthropogenic Ecosystems
https://nmshawaiihumpbackwhale.blob.core.windows.net/hawaiihumpbackwhale-prod/media/archive/council/pdfs/aloha_aina.pdf

A framework developed by the Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council to integrate Native Hawaiian and Western scientific management approaches toward ecosystem management. While intended for the Sanctuary, this document provides useful insight into successful collaboration in Hawai‘i.

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix G – (Reserved)

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix H – Interconnection Facilities Cost and Schedule Information

Hawaiian Electric

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Hawaiian Electric Company
APPENDIX H – INTERCONNECTION FACILITIES COST AND SCHEDULE INFORMATION

To assist Proposers in estimating costs of potential projects, the information provided in this document can be used to approximate the cost for Company-Owned Interconnection Facilities (COIF), including substation, telecommunications, security, transmission and distribution lines, and project management. The Company will develop assumed costs for interconnection based on this information and will use these assumed costs as a proxy in the evaluation process.

Tariff Rule No. 19, approved by the PUC, establishes provisions for Interconnection and Transmission Upgrades (https://www.hawaiianelectric.com/billing-and-payment/rates-and-regulations/). 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. Tariff Rule No. 19 and applicable RFP requirements will be utilized as the basis for addressing interconnection and transmission upgrades for any projects developed. Proposers will comply with the terms and conditions as specified therein.

SECTION 1 – COST RESPONSIBILITIES

For the purposes of the LMI RFP, the Company will be responsible for the costs of Company-Owned Interconnection Facilities (COIF), subject to any limitations, as described in Section 1. Company shall be responsible for building the COIF, except to the extent set forth in this Appendix H. For those portions of the COIF to be constructed by the Selected Proposers, Company shall reimburse the selected Proposers for such work. Selected Proposers shall confirm the scope and cost of work for COIF prior to starting any such work. The Company will not be responsible for reimbursing any costs related to work deemed excessive and/or corrective in nature. The information below will help to clarify the responsibilities of the Company and the Proposer for COIF.

1.1 – DEFINITIONS

1. Betterment – Any upgrading to a facility made solely for the benefit of and at the election of the Company and is not required by applicable laws, codes, Company Standards, and the interconnection requirements in accordance with Tariff Rule No. 19.
2. Company – Hawaiian Electric, Maui Electric, or Hawai‘i Electric Light.
3. Company-Owned Interconnection Facilities – The equipment and devices owned by Company between the Point of Interconnection and the Grid Connection Point that are required to permit a generating facility to operate in parallel with and deliver electric energy to Company’s system and provide reliable and safe operation of, and power quality on, Company’s system.
4. Grid Connection Point – The point that the new interconnection facilities associated with the Proposer’s project interconnects to the Company’s existing electrical grid.
5. Interconnection Agreement – The executed contract between the Company and Proposer (e.g., Power Purchase Agreement, Standard Interconnection Agreement, etc.).
6. Point of Interconnection – The point of delivery of energy supplied by Proposer to Company, where the Facility owned by the Proposer interconnects with the facilities owned or to be owned by the Company.

7. Proposer – The developer proposing a renewable project in response to a Company RFP.

1.2 – ABBREVIATIONS

1. ADSS – All Dielectric Self-Supporting
2. COIF – Company-Owned Interconnection Facilities
3. CSAT – Control System Acceptance Test
4. CT – Current Transformer
5. DFR – Digital Fault Recorder
6. DTT – Direct Transfer Trip
7. FS – Facility Study
8. GCP – Grid Connection Point
9. HVAC – Heating, Ventilation, and Air Conditioning
10. IRS – Interconnection Requirements Study (includes both SIS and FS)
11. NDA - Non-Disclosure Agreement
12. OPGW- Optical Ground Wire
13. POI – Point of Interconnection
14. PT – Potential Transformer
15. RTU – Remote Terminal Unit
16. SCADA – Supervisory Control and Data Acquisition
17. SIS – System Impact Study
18. UFLS – Under-Frequency Load Shed

1.3 – FACILITIES AT PROPOSER SITE

1. Proposer shall be responsible for obtaining all permitting and land rights.
2. Except for costs agreed to be paid by Company under Items 3, 4, and 5 below, Proposer shall be responsible for the design, procurement, and construction of all facilities at the Proposer's project site. This may include, but is not limited to:
    a. Civil infrastructure and site work (grading, trenching, manholes/handholes, conduits, cable trench, concrete pads/foundations, fencing, roadways/driveways, ground grid, lighting, etc.)
    b. Communications cabinets and infrastructure (poles/towers for antenna/microwave dish, equipment pads, conduits, foundations, HHs, AC power, grounding, etc.)
    c. Security systems/equipment
    d. T&D infrastructure drawings showing the route of OH and UG lines and equipment locations at the project site
        i. Any UG conduits for a T&D line extension that need to extend off the property should stubout at the property line for the Company to connect to
3. Company will reimburse Proposer for construction costs of non-electrical COIF installed by the Proposer, which includes civil infrastructure (ductlines, manholes, handholes, etc.) required for the line extension from the GCP to the Proposer's project. Company will not reimburse for grading/site prep for a new switching station.

4. Company shall be responsible for costs related to the design, procurement, construction, and testing of electrical COIF at the project site. This may include, but is not limited to:
    a. Equipment (circuit breakers, transformers, relays, switches, arresters, batteries, HVAC, RTU, DFR, DTT, meters, PTs, CTs, etc.)
    b. Pre-wired control equipment enclosure/cabinet
    c. Communications equipment
    d. Electrical work (bussing, wiring, lightning protection, fiber optic cable, etc.)
5. Company is responsible for Betterment costs.

1.4 – PROPOSER FACILITY SERVICE POWER AND COMPANY SWITCHING STATION POWER

1. For all distribution-level service power, Proposer shall submit an Electrical Service Request Form via www.hawaiianelectric.com. Please refer to the Large Customer New Service Request brochure for milestones and estimated timeline.
2. Proposer shall be responsible for all costs related to providing service power to the Proposer's facility. Facility service power is NOT a part of COIF, but Proposers should account for it in the total costs to build the project.
3. Station power is required if a new Company switching station or substation is built to allow the interconnection of the Proposer's project. Company shall be responsible for all costs related to providing the primary station power source per Item 4a below. Proposer shall be responsible for all costs related to providing the primary station power source per Item 4b below. This may include, but is not limited to:
    a. Project management, design, permitting/regulatory fees and approvals, land rights, installation labor, inspection, construction management, and testing
    b. Overhead electrical facilities (poles, conductor, insulators, crossarms, guy wires, transformers, etc.)
    c. Underground electrical facilities (cables, splices, termination, grounding, transformers, switchgears, etc.)
    d. Step-down transformer
    e. Civil/structural work (survey, grading, trenching, conduits, manholes/handholes, concrete pads, concrete pier foundations, pole hole excavation, etc.)
    f. Vegetation trimming and traffic control
4. Options for primary station power sources for the Company's various switching station voltages are:
    a. Tap off the bus through a step-down transformer for 23kV through 69kV
    b. 12kV line extension and service transformer for 23kV through 138kV
    c. Gensets are not an allowable substitute for the above options
5. For 69kV interconnections, Company shall be responsible for all costs related to the backup station power source.
6. For 138kV interconnections, Proposer shall be responsible for all costs related to providing a backup station power source.
7. Proposer shall be responsible for obtaining all permitting and land rights.

1.5 – REMOTE SUBSTATION FACILITIES

1. Company shall be responsible for all costs. This may include, but is not limited to:
    a. Betterment
    b. System upgrades, changes, or replacement of existing facilities (e.g., breaker replacements, relay upgrade, transformer installs, Under-Frequency Load Shed (UFLS) settings, etc.)
    c. Site work associated with those system upgrades (grading, trenching, manholes/handholes, conduits, cable trench, concrete pads/foundations, fencing, roadways/driveways, ground grid, lighting, etc.)
    d. Substation structures
    e. New control equipment cabinet or existing enclosure expansion
    f. Equipment (circuit breakers, transformers, relays, switches, arresters, batteries, HVAC, DFR, DTT, meters, PTs, CTs, SCADA equipment, telecommunications routers, etc.)
    g. Electrical work (bussing, wiring, lightning protection, fiber optic cable, etc.)
    h. Telecommunications equipment

1.6 – LINE EXTENSION FROM GRID CONNECTION POINT (GCP) TO PROPOSER SITE

1. Company shall be responsible for the design, procurement, and construction of the line extension between the GCP and the Proposer site. This may include, but is not limited to:
    a. Overhead electrical facilities (poles, conductor, insulators, crossarms, guy wires, etc.)
    b. Underground electrical facilities (cables, splices, terminations, grounding, transformers, switchgears, etc.)
    c. Civil/structural work (design, survey, grading, trenching, conduits, manholes/handholes, concrete pads, concrete pier foundations, pole hole excavation, etc.)
    d. Vegetation trimming and traffic control
    e. Betterment
2. Proposer shall be responsible for obtaining all permitting and land rights.

1.7 – T&D SYSTEM UPGRADES

1. Company shall be responsible for all costs related to system upgrades or changes required to accommodate the Proposer's project (e.g., reconductoring or recircuiting of existing lines that do not have the required ampacity, re-fusing or re-programming of protective devices upstream of the GCP, etc.)

1.8 – COMPANY-OWNED FIBER

1. If Company-owned fiber is used to satisfy the communications requirements in the IRS, then the Company shall be responsible for all costs related to the design, procurement,

construction, and testing of the ADSS fiber or OPGW from the nearest existing splice point to the Proposer site. This may include, but is not limited to:

a. Company fiber-optic cable (ADSS fiber cable or OPGW shieldwire) and associated equipment/hardware (splice boxes, innerduct, vibration dampers, etc.)
b. Splicing and Testing of fiber strands
c. Pole replacements and additional equipment if needed for additional capacity
d. Civil/structural work outside of Proposer's project site (design, survey, grading, trenching, conduits, manholes/handholes, concrete pads, concrete pier foundations, pole hole excavation, etc.)
e. Vegetation trimming and traffic control
f. Betterment

2. Company will provide the location(s) of the existing fiber splice point(s) after the Proposer has signed a Non-Disclosure Agreement (NDA).
3. Proposer shall be responsible for obtaining all permitting and land rights.

1.9 – TELECOMMUNICATION FACILITIES

1. Company shall be responsible for design, procurement, construction, and testing of Company-owned telecommunication facilities. This may include, but is not limited to:
   a. Fiber cable to the "meet point" outside of Proposer's facility and termination at Company's nearest point of interconnection.
   b. Microwave radio or wireless radio equipment at the Proposer's facility and at remote site(s) (e.g., microwave dish/equipment, waveguide, cables, antenna system, etc.).
   c. Telecommunication service equipment required to provide circuits to support various applications at the Proposer's facility.
2. Proposer shall be responsible for all costs related to the following:
   a. A telecommunication cabinet required to accommodate the telecommunication equipment at the Proposer's facility.
   b. Telecommunication power at the Proposer's facility (e.g., battery racks, banks, fuse panels, and associated power system equipment).
   c. Ordering and installing a 3rd party leased service at the site. This may include, but is not limited to the initial cost to establish leased line(s) required for the project, monthly recurring leased cost of the service(s), and on-going maintenance of the service(s).
3. Proposer shall be responsible for obtaining all permitting and land rights.

1.10 – CONTROL SYSTEM ACCEPTANCE TEST (CSAT)

1. Proposer shall be responsible for all costs related to the CSAT, including all Company costs in support of the Proposer's CSAT.

1.11 – PROPOSER PAYMENTS

1. Proposer is responsible for payments to the Company related to service contracts for service power.

SECTION 2 – INTERCONNECTION REQUIREMENTS AND COSTS

The information in Section 2 is based on typical interconnections as shown in Attachments 2-7 to this Appendix H referenced below. Conceptual design is not intended to cover all interconnection requirements. Final interconnection design will be subject to the results of a technical review. The per-unit cost figures below should not be used to create a detailed project estimate. A detailed project estimate typically requires a certain level of engineering to assess project site conditions and to factor in other parameters specific to the project.

The Proposer should identify the components assumed for their project and the quantity assumed for each. Each table below provides notes on the assumptions for each of the unit cost estimates. If a Proposer's project requirements are different than what is assumed in the notes, the Proposer should identify each difference and provide an estimated additional cost or savings resulting from those differences. Please see Attachment 1 for examples of how to apply the per-unit costs provided. All costs provided are Company costs only and do not include costs related to Proposer responsibilities including, but not limited to, permitting, land rights, community outreach, biological and/or cultural (archeological) surveys. Proposers should do their own due diligence for these costs.

For the purposes of Section 2, voltages are classified as follows:

- Distribution – 12kV and below for O'ahu, Maui, and Hawai'i Island.
- Subtransmission – 46kV for O'ahu.
- Transmission – 138kV for O'ahu and 69kV for Maui and Hawai'i Island.

2.1 – SUBSTATION & METER BASELINE COSTS

A. Typical Distribution Interconnection

The costs in Section 2.1A are reflective of typical standard interconnections at distribution voltages. Costs provided in this section assume the COIF will be built by the Company.

Item	Description	Cost
1	Attachment 2 – Projects ≥ 250 kW and < 1 MW Secondary Interconnection	$390,000
2	Attachment 3 – Projects ≥ 250 kW and < 1 MW Primary Interconnection	$390,000
3	Attachment 4 – Projects ≥ 1 MW Primary Interconnection	$476,000
4	Components at Company's remote substation, including DTT and relaying requirements – Projects ≥ 1 MW (O'ahu)	$270,000 / site

Item	Description	Cost
5	Components at Company's remote substation, including DTT and relaying requirements – Projects ≥ 1 MW (Maui/Hawai'i)	$170,000 / site

Notes:
a) Costs provided are in 2022 dollars.
b) Includes Company costs for engineering, materials, construction, and testing of Substation & Meter components shown in the referenced attachment.
c) Does NOT include T&D, Project Management, Telecommunications, or Security costs.
d) Civil infrastructure and space for COIF provided by Proposer.
e) Substation relay protection requirements have not been identified so costs are based upon typical line protection relaying requirements.
f) Does not include costs for permitting, land rights, or a Relay Coordination Study.
g) Item 4 assumes the substation is not SCADA enabled.
h) Item 5 assumes the substation is SCADA enabled.
i) For T&D costs (including service power costs) – See Section 2.2.
j) For Project Management costs – See Section 2.3.
k) For Telecommunications costs – See Section 2.4.
l) For Security requirements – See Section 2.5.

B. Typical Subtransmission Interconnection

The costs in Section 2.1B are reflective of typical standard interconnections at subtransmission voltages. Costs provided in this section assume the COIF will be built by the Company.

Item	Description	Cost
15	Attachment 5 – 46kV Interconnection (O'ahu)	$796,000
21	Components at Company's 46kV remote substation, including DTT and relaying requirements	$424,000 / site

Notes:
a) Costs provided are in 2022 dollars.
b) Includes Company costs for engineering, materials, construction, and testing of Substation & Meter components shown in the referenced attachment.
c) Includes Company costs for engineering, materials, construction, and testing for Company-responsible items (See Section 3) related to Substation & Meter components as shown in the referenced attachment.
d) Does NOT include T&D, Project Management, Telecommunications, or Security costs.
e) Civil infrastructure and space for COIF provided by Proposer.
f) Substation relay protection requirements have not been identified so costs are based upon typical line protection relaying requirements.
g) Does not include costs for permitting, land rights, or a Relay Coordination Study.
h) For T&D costs (including service power costs) – See Section 2.2.
i) For Project Management costs – See Section 2.3.
j) For Telecommunications costs – See Section 2.4.
k) For Security requirements – See Section 2.5.

C. Typical Transmission Interconnection

The costs in Section 2.1C are reflective of typical standard interconnections at transmission voltages. Costs provided in this section assume the COIF will be built by the Company.

Item	Description	Cost
30	Attachment 6 – 69kV Interconnection (Maui/Hawai‘i Island)	$9,600,000
32	Attachment 7 – 138kV Interconnection (O‘ahu)	$11,710,000
Remote Substation Costs		
34a	69kV line relay upgrades	$210,000 each
34b	69kV circuit switcher and differential protection per transformer/switchgear	$270,000 each
34c	69kV circuit breaker replacement	$340,000 each
34d	69kV 3ph line PTs required for Synch Check	$110,000 each
36	Components at Company’s 138kV remote substation, including DTT and relaying requirements (O‘ahu)	$460,000 each

Notes:

a) Costs provided are in 2022 dollars.
b) Includes Company costs for engineering, materials, construction, and testing of Substation & Meter components shown in the referenced attachment.
c) Includes Company costs for engineering, materials, construction, and testing for Company-responsible items (See Section 3) related to Substation & Meter components as shown in the referenced attachment.
d) Does NOT include T&D, Project Management, Telecommunications, or Security costs.
e) Civil infrastructure and space for COIF provided by Proposer.
f) Substation relay protection requirements have not been identified so costs are based upon typical line protection relaying requirements.
g) Does not include costs for permitting, land rights, or a Relay Coordination Study.
h) For T&D costs (including service power costs) – See Section 2.2.
i) For Project Management costs – See Section 2.3.
j) For Telecommunications costs – See Section 2.4.
k) For Security requirements – See Section 2.5.

2.2 – T&D BASELINE AND LINE EXTENSION COSTS

A. Typical Distribution Interconnection Baseline

The costs in Section 2.2A are the baseline T&D costs for interconnections at distribution voltages. It includes 100ft of UG line extension. For any extensions > 100ft, please add costs per Section 2.2D. Costs provided in this section assume the COIF will be built by the Company.

Hawaiian Electric Company
APPENDIX H – INTERCONNECTION FACILITIES COST AND SCHEDULE INFORMATION

Item	Description	Cost
100	Secondary Interconnect – Tap to OH (Attachment 2) • Includes 3ph riser fuses (100A max) or disconnects, 1 wood pole, 100ft UG line extension (1 feeder), padmount transformer, and 3ph, 4W, 600V cables from transformer to Proposer switchgear	$283,000
101	Secondary Interconnect – Tap to UG Main (Attachment 2) • Includes UG tap, 100ft UG line extension (1 feeder), padmount switch (fuse 100A max), padmount transformer, cable between switch and transformer, and 3ph, 4W, 600V cables from transformer to Proposer switchgear.	$362,000
102	Secondary Interconnect – Tap to UG Fused Feeder (Attachment 2) • Includes costs for engineering, materials, construction for UG tap, 100ft UG line extension (1 feeder), padmount transformer, and 3ph, 4W, 600V cables from transformer to Proposer switchgear	$266,000
103	Primary Interconnect – Tap to OH (Attachments 3 and 4) • Includes 3ph riser fuses (100A max) or disconnects, 1 wood pole, 100ft UG line extension (1 feeder), and primary termination to Proposer switchgear	$172,000
104	Primary Interconnect – Tap to UG Main (Attachments 3 and 4) • Includes UG tap, 100ft UG line extension (1 feeder), padmount switch (fuse 100A max), and primary cables and terminations between switch and Proposer switchgear	$245,000
105	Primary Interconnect – Tap to UG Fused Feeder (Attachments 3 and 4) • If Project < 100A – Includes UG tap, 100ft UG line extension (1 feeder), and primary termination to Proposer switchgear • If Project ≥ 100A – Not allowed	$147,000

Notes:

a) Costs provided are in 2022 dollars.
b) Includes costs for engineering, materials, and construction for Company-responsible items.
c) Interconnection will typically require one of these items depending on the existing facilities in the area and/or the type of construction for any line extension.
d) Includes 100ft UG line extension of one feeder (minimum requirement).
e) OH Line extension – Add applicable costs per Items 140, 141, and/or 142.
f) UG Line extension (if > 100ft) – Add costs per Items 143 or 145.
g) Additional OH/UG transitions – Add costs per Item 147.
h) Secondary voltage from Proposer is assumed to be 480Y/277V in these scenarios.
i) Maximum of 11 secondary connections is allowed on the Company-owned transformer.
j) Assumes padmount equipment is within 10ft of each other.
k) OH/UG route and civil infrastructure drawings provided by Proposer.
l) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer.
m) Includes review of Proposer civil infrastructure designs and materials and inspection of Proposer civil infrastructure construction.
n) Does not include vegetation clearing, grading, dewatering, permitting or land rights.

B. Typical Subtransmission Interconnection Baseline

The costs in Section 2.2B are the baseline T&D costs for interconnections at subtransmission voltages. It includes 100ft of OH or UG line extension. For any extensions > 100ft, please add costs per Section 2.2D. Costs provided in this section assume the COIF will be built by the Company and apply to 46kV (O'ahu) only.

Item	Description	Cost
120	OH to OH Final Tap by Company (Attachment 5) • Includes 1 wood pole, 1 span (100ft) OH line extension toward Proposer facility and assumes Proposer designs, procures, and installs the required gang-operated switch	$85,000
121	OH to UG Final Tap by Company (Attachment 5) • Includes 1 wood pole, 1 gang-operated switch, 100ft UG line extension and splice in Proposer-installed manhole	$409,000
122	UG to UG Final Tap by Company (Attachment 5) • Includes cut and splicing in existing Company manhole, a 100ft UG line extension and terminations at a Proposer-installed riser pole for one set of cables, and 100ft UG line extension and splices in a Proposer-installed manhole	$542,000

Notes:

a) Costs provided are in 2022 dollars.
b) Includes Company costs for engineering, materials, construction, and testing of Company-responsible items.
c) Interconnection will typically require one of these items depending on the existing facilities in the area and/or the type of construction for any line extension.
d) Includes a 100ft OH or UG line extension.
e) OH or UG line extensions (if > 100ft) – Add applicable costs per Section 2.2D.
f) OH/UG route and civil infrastructure drawings provided by Proposer.
g) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer. Estimated construction costs are included.
h) Includes review of Proposer civil infrastructure designs and materials and inspection of Proposer civil infrastructure construction.
i) Does not include vegetation clearing, grading, dewatering, permitting or land rights.

C. Typical Transmission Interconnection Baseline

The costs in Section 2.2C are the baseline T&D costs for interconnections at transmission voltages. It includes 100ft of OH or UG line extension. For any extensions > 100ft, please add costs per Section 2.2D. Costs provided in this section assume the COIF will be built by the Company.

Item	Description	Cost
69kV – Maui / Hawai'i Island		

Item	Description	Cost
130	69kV OH to OH Final Tap by Company (Attachment 6) • Includes 2 wood poles, 1 span (100ft) OH line extension from each new pole toward Proposer facility and the removal of existing conductors between the new poles	$140,000
138kV – O'ahu		
133	138kV OH to OH Final Tap by Company (Attachment 7) • Includes 2 steel poles, 1 span (100ft) OH line extension from each new pole toward Proposer facility and the removal of existing conductors between the new poles	$1,079,000

Notes:
a) Costs provided are in 2022 dollars.
b) Includes Company costs for engineering, materials, construction, and testing of Company-responsible items.
c) Interconnection will typically require one of these items depending on the existing facilities in the area and/or the type of construction for any line extension.
d) OH or UG line extensions (if > 100ft) – Add applicable costs per Section 2.2D.
e) OH/UG route and civil infrastructure drawings provided by Proposer.
f) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer.
g) Includes review of Proposer civil infrastructure designs and materials and inspection of Proposer civil infrastructure construction.
h) Does not include vegetation clearing, grading, dewatering, permitting or land rights.

D. Line Extensions and Upgrades

The costs in Section 2.2D are typical per unit costs for T&D line extensions using typical assumptions based on the Company's current standards and practices. Costs provided in this section assume the COIF will be built by the Company.

12kV and Below

Item	Description	Cost
145	OH accessible (200ft spans, #1/0 AAC)	$684,000 / mile
146	OH underbuild accessible (200ft spans, #1/0 AAC)	$438,000 / mile
147	OH inaccessible (250ft spans, #1/0 AAC)	$1,443,000 / mile
148	UG feeder ≤ 200A (200ft spans, #4/0 AL PEICN)	$5,505,000 / mile
150	UG feeder > 200A (200ft spans, 1000KCM AL PEICN)	$6,881,000 / mile
152	3ph riser w/ disconnects (including pole/anchor)	$39,000 each
153	Upgrade existing OH lines (200ft, accessible)	$719,000 / mile

Notes:
a) Costs provided are in 2022 dollars.
b) OH/UG route drawings provided by Proposer.

Item	Description	Cost
	c) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer. Civil infrastructure outside of Proposer's site is designed, procured, and installed by Company. Estimated construction costs are included. d) Does not include vegetation clearing, grading, dewatering, permitting or land rights. e) Includes engineering, materials, construction labor and contractor costs. f) OH assumes wood poles and 3ph overhead conductor with neutral underbuild. g) Accessible assumes vehicles can be used during construction. h) Inaccessible assumes helicopters are needed during construction. i) Item 146 assumes no poles need to be replaced.	

46kV (O'ahu) and 69kV (Maui/Hawai'i)

Item	Description	Cost
163	OH accessible (250ft spans, 556.5 AAC)	$964,000 / mile
164	OH inaccessible (250ft spans, 556.5 AAC)	$1,808,000 / mile
165	Overbuild on existing accessible 12kV (200ft spans, 556.5 AAC)	$1,327,000 / mile
166	Overbuild on existing inaccessible 12kV (250ft spans, 556.5 AAC)	$2,261,000 / mile
167	UG feeder (400' avg spans, 1500KCM AL PEICN)	$7,243,000 / mile
168	3ph riser (including pole/achor)	$71,000 each
169	OH switch	$47,000 each
170	Upgrade existing OH lines (250ft spans, accessible)	$754,000 / mile

Notes:
a) Costs provided are in 2022 dollars.
b) OH/UG route drawings provided by Proposer.
c) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer. Civil infrastructure outside of Proposer's site is designed, procured, and installed by Company. Estimated construction costs are included.
d) Does not include vegetation clearing, grading, dewatering, permitting or land rights.
e) Includes engineering, materials, construction labor and contractor costs.
f) OH assumes wood poles.
g) Accessible assumes vehicles can be used during construction.
h) Inaccessible assumes helicopters are needed during construction.
i) Items 165 and 166 assume all poles need to be replaced.
j) Item 170 assumes no poles need to be replaced.

138kV (O'ahu)

Item	Description	Cost
178	OH accessible (400ft spans, 2-556.5 AAC)	$6,800,000 / mile
179	OH inaccessible (600ft spans, 2-556.5 AAC)	$10,515,000 / mile
180	Overbuild on existing accessible 46kV (400ft spans, 2-556.5 AAC)	$6,960,000 / mile
181	UG feeder (1,000ft spans, 2-1500KCM CU XLPE)	$14,111,000 / mile

Item	Description	Cost
182	3ph riser (including pole/foundation)	$824,000 each
183	Upgrade existing OH lines (400ft spans, accessible)	$1,764,000 / mile

Notes:

a) Costs provided are in 2022 dollars.
b) OH/UG route drawings provided by Proposer.
c) Civil infrastructure (pads, MH/HHs, conduits, etc.) at Proposer's site is designed, procured, and installed by Proposer. Civil infrastructure outside of Proposer's site is designed, procured, and installed by Company. Estimated construction costs are included.
d) Does not include vegetation clearing, grading, dewatering, permitting or land rights.
e) Includes engineering, materials, construction labor and contractor costs.
f) OH assumes steel poles with drilled pier anchor bolt foundations.
g) Accessible assumes vehicles can be used during construction.
h) Inaccessible assumes helicopters are needed during construction.
i) Item 180 assumes all poles need to be replaced.
j) Item 183 assumes no poles need to be replaced.

E. Service Power

Section 2.2E provides typical requirements and costs for distribution-level service power to the Proposer's facility and/or the proposed Company switching station. Execution of a proposal letter provided by Company in response to Proposer's electrical service request, and separate from the Interconnection Agreement, will be required for service power.

Service power to the Proposer's facility shall emanate from an existing distribution line via new Company overhead and/or underground facilities to the Proposer's service connection point.

For 138kV interconnections, primary station service power requires a line extension and a separate padmount transformer at the proposed Company switching station. Proposer is responsible for providing a backup station power source.

Item	Description	Cost
188	Facility or Station Service Power • Includes 100ft UG 12kV line extension of two (2) feeders and one (1) padmount transformer and assumes no switchgear is required	$81,000 each
189	Distribution OH accessible (200ft spans, #1/0 AAC)	$655,000 / mile
190	Distribution OH underbuild accessible (200ft spans, #1/0 AAC)	$420,000 / mile
191	Distribution OH inaccessible (250ft spans, #1/0 AAC)	$1,382,000 / mile
192	Distribution UG double feeder (electrical only)	$1,014,000 / mile
193	Distribution 3ph double riser w/ fuses (including pole/anchor)	$38,000 each

Notes:

a) Costs provided are in 2022 dollars.
b) OH/UG route and civil infrastructure drawings provided by Proposer.

Item	Description	Cost
	c) Civil infrastructure (pads, MH/HHs, conduits, etc.) is designed, procured, and installed by Proposer. d) Does not include vegetation clearing, grading, dewatering, permitting or land rights. e) Includes engineering, materials, construction labor for electrical work, and inspection of UG civil infrastructure. f) OH line extension – Add applicable costs per Items 189-191. g) UG line extension costs (if > 100ft) – Add costs per Item 192. h) Additional OH/UG transitions – Add costs per Item 193. i) OH assumes wood poles and 3ph overhead conductor with neutral underbuild. j) Item 190 assumes no poles need to be replaced. k) Accessible assumes vehicles can be used during construction. l) Inaccessible assumes helicopters are needed during construction.	

For 69kV interconnections, the cost for primary and backup station power is included in the Substation baseline costs in Section 2.1C.

2.3 – PROJECT MANAGEMENT BASELINE COSTS

Section 2.3 provides typical Project Management costs for interconnection projects which require a dedicated project manager. The total costs will be dependent on the Proposer's schedule and durations for engineering, construction, and testing/closeout.

A. Distribution Projects ≥ 1 MW (O'ahu / Maui / Hawai'i Island)

Item	Description	Cost
195	Project Management Costs • Includes facilitation, coordination, and support for Engineering Design, Procurement, Construction (start of construction through back feed energization), and Developer system testing and CSAT	$360,000
	Notes: a) Costs provided are in 2022 dollars. b) Assumes 22-month duration. o 18-month duration to GCOD. o 4 months for Closeout. c) Assumes work is done in parallel with Interconnection Project.	

B. Subtransmission 46kV Projects (O'ahu)

Item	Description	Cost
196	Project Management Costs • Includes facilitation, coordination, and support for Engineering Design, Procurement, Construction (start of construction through back feed energization), and Developer system testing and CSAT	$503,000

Item	Description	Cost
Notes: a) Costs provided are in 2022 dollars. b) Assumes 28-month duration. o 24-month duration to GCOD. o 4 months for Closeout. c) Assumes work is done in parallel with Interconnection Project.		

C. Transmission Projects (O‘ahu / Maui / Hawai‘i Island)

Item	Description	Cost
197	Project Management Costs • Includes facilitation, coordination, and support for Engineering Design, Procurement, Construction (start of construction through back feed energization), and Developer system testing and CSAT	$503,000
Notes: a) Costs provided are in 2022 dollars. b) Assumes 28-month duration. o 24-month duration to GCOD. o 4 months for Closeout. c) Assumes work is done in parallel with Interconnection Project.		

2.4 – TYPICAL TELECOMMUNICATIONS REQUIREMENTS AND COSTS

Section 2.4 provides typical telecommunications requirements and costs for interconnection projects. The communications equipment will require a communications channel(s). Some options include cellular, lease line, licensed radio, fiber, or microwave. The number of communications circuits (primary/backup) and type of communication circuits required will vary depending on the type/size of the project. Requirements are subject to change based on project specific evaluations, technical reviews, or the IRS.

A. Distribution Projects ≥ 250 kW and < 1 MW

1. Primary communications links can consist of cellular, lease line, licensed radio, fiber, or microwave.
2. Back-up communications links not required.
3. Additional communications links are required to support revenue meters and can consist of LTE, AMI meter, or analog leased telephone lines (Proposer shall do their own due diligence for costs on this).
4. Requirements are subject to change based on project specific evaluations, technical reviews, or IRS.

B. Projects ≥ 1 MW and ≤ 3 MW

1. Primary communications links can consist of lease line, licensed radio, fiber, or microwave.
2. Back-up communications links are optional (can consist of lease line, licensed radio, fiber, or microwave).
3. Additional communications links are required to support revenue meters and can consist of LTE, AMI meter, or analog leased telephone lines (Proposer shall do their own due diligence for costs on this).

C. Projects > 3 MW

1. Primary communications links can consist of lease line, fiber, or microwave.
2. Back-up communications links are required (can consist of lease line, licensed radio, fiber, or microwave).
3. Back-up communications links must be transport diverse until the "last mile" for projects greater than 10MW.
4. Additional analog leased telephone lines are required to support revenue meters (Proposer shall do their own due diligence for costs on this).

D. Transmission Projects

1. If Proposer's substation is not adjacent to the proposed Company switching station, then Proposer is responsible for providing a communications link between the two (2) sites.
    a. If Proposer chooses to run fiber between the sites, Proposer will own the fiber from their site up to a splice box immediately outside of the Company switching station ("meet point"). Company will own fiber from the meet point to the termination into the Company switching station – See Item 220.
    b. For other communications options, a communications cabinet will be required at both sites – See Item 202.
2. If Proposer's substation is adjacent to the proposed Company switching station, no additional Company costs are anticipated to be required for the Proposer's substation.

E. Telecommunications Baseline Costs

The costs below are high level per unit costs for communications requirements in support of the Project. Sections 2.4A through 2.4D above provide typical scenarios of when these options may be utilized.

Communications Cabinet or Enclosure

Item	Description	Cost
200	Communications Enclosure with circuits to support SCADA (Projects < 1 MW)	$43,000 / site

Item	Description	Cost
	• Only applicable to Cellular, Lease Line, or Company-owned fiber options	
201	Communications Cabinet with circuits to support SCADA (Projects ≥ 1 MW and ≤ 3 MW) • Projects with SCADA and DTT but no diverse communication circuits	$164,000 / site
202	Communications Cabinet with circuits to support SCADA and Relay Protection (Projects > 3 MW or Subtransmission) • Projects with SCADA, DTT, and diverse communication circuits	$192,000 / site

Notes:
a) Costs provided are in 2022 dollars.
b) All projects that require communications will require facilities to store the communications equipment. The examples above are provided but other alternatives may be available upon request.
c) Cabinet is used to support Company equipment and capable of providing communications circuit for SCADA.
d) Communications cabinet cost does not include fiber, microwave, radio equipment or lease circuits.
e) Proposer will provide all conduits, foundations, HHs, AC power, grounding as required per Company standards.

Cellular or Lease Line Options

Item	Description	Cost
203	Cellular or Lease Line one-time and recurring costs	Will vary based on 3rd party provider

Notes:
a) Add cost of Communications Cabinet – See Items 200-202.
b) Check with Company to understand the current cellular or lease line requirements.
c) Communication circuit requirements will be based on applications needed for the project.
d) Company can provide communication circuit interconnection requirements and assist with review of circuit order from the 3rd party provider as needed.
e) Proposer to work directly with 3rd party provider if a cellular or lease line circuit is needed.
f) Cost will be the responsibility of the Proposer and is to be negotiated with the 3rd party provider.

Licensed 900 MHz Radio Option

Item	Description	Cost
204	Licensed 900 MHz Radio Equipment • Incudes 2 each antenna equipment to create a radio link	$140,000 / link

Notes:
a) Costs provided are in 2022 dollars.
b) Add cost of Communications Cabinet – See Items 201-202. The radio equipment will be installed within the Communication Cabinet.

Item	Description	Cost
	c) Assumes there is radio line-of-sight clearance between the communication endpoints. d) Assumes FCC licensed 900MHz Frequencies are available. e) Assumes there is an existing structure/building with space available on the Company side to mount the antenna equipment and house the radio equipment. f) Assumes Telecommunications grounding standards are up to date at both sites. g) Assumes 48 V DC power with 12-hour battery backup is available. h) Does not include special site-specific permit/approval activities that may be required including, but not limited to, Neighborhood Board(s), Conservation District Use Application, Environmental Assessment, Shoreline Management Area approval, biological (endangered species or habitat) surveys, and/or cultural (archeological) surveys or the cost of any migration required for approvals to be granted. Proposers should conduct their own due diligence for these costs. i) Proposer is responsible to install a structure to mount the antenna equipment on the Proposer side and provide any conduit required between the Communications Cabinet and the antenna mount structure.	

Fiber-Optic Cable Option

Item	Description	Cost
205	New Fiber-only pole line (200' avg spans, 60-strand ADSS) • Includes new wood poles	$386,000 / mile
206	Fiber underbuild on new or existing pole line (200' avg spans, 60-strand ADSS) • Assumes no replacements of existing poles are needed	$179,000 / mile
Notes: a) Costs provided are in 2022 dollars. b) Add cost of Communications Cabinet – See Items 200-202. c) Assumes no splices are needed along the route.		

Microwave Option

Item	Description	Cost
207	Point-to-Point Microwave Link • Includes 2 each antenna equipment to create a radio link	$697,000 / link
208	50ft Microwave Tower	$612,000 each
209	100ft Microwave Tower	$888,000 each
Notes: a) Costs provided are in 2022 dollars. b) Add cost of Communications Cabinet – See Items 201-202. c) Assumes there is radio line-of-site clearance between the communication endpoints. d) Assumes FCC licensed microwave frequencies are available. e) Assumes there are existing structures/buildings with space available on both ends to house the radio equipment. f) Assumes Telecommunications grounding standards are up to date at both sites. g) Assumes 48 V DC power with 12-hour battery backup is available.		

Item	Description	Cost
	h) Does not include special site-specific permit/approval activities that may be required including, but not limited to, Neighborhood Board(s), Conservation District Use Application, Environmental Assessment, Shoreline Management Area approval, biological (endangered species or habitat) surveys, and/or cultural (archeological) surveys or the cost of any migration required for approvals to be granted. Proposers should conduct their own due diligence for these costs. i) Assumes space is available at both ends to construct antenna towers or structures that are rated to survive a Saffir-Simpson category 4 hurricane. j) Other options for Microwave Towers of varying heights may be available.	

Transmission Projects Only

Item	Description	Cost
220	Fiber from "meet point" to termination in Company switching station	$31,000
Notes: a) Costs provided are in 2022 dollars. b) Includes splicing, termination, and testing work. c) Required if the Proposer's substation is not adjacent to the Company switching station per Section 2.4D1a. d) Assumes the "meet point" is within 500ft of the termination in the Company switching station. e) Assumes 24-strand fiber cable. f) Civil infrastructure (HHs, conduits, etc.) is designed, procured, and installed by Proposer.		

2.5 – TYPICAL SECURITY REQUIREMENTS

Section 2.5 provides typical security requirements for new facilities installed as a part of the interconnection. Security requirements can vary based on many factors including, but not limited to, location, crime rate, environment, aspects of the surrounding area, terrain, accessibility, layout of the facility, etc. The specific requirements for each facility will be subject to final review during the design and engineering phase. Additional information, including the Company's Physical Security Strategy, is available upon request after execution of an NDA with the Company.

A. Proposer Responsibilities at Proposer Facility

The Proposer shall be responsible to incorporate security components and systems for **their facilities** that consider the Security Guidelines for the Electricity Sector (CIP-014-2): Physical Security, as published by the North American Electric Reliability Corporation (NERC) and that at a minimum, meet the requirements below.

For Company-owned facilities within the Proposer's Facility, Company requires:

1. Standard 8ft high security fence with 3-strand barbed wire V-top.

2. Interior mounted 4‘ high cattle fencing.
3. All gates will be secured using a proprietary padlock system.
4. Proposer-owned cabinets/enclosures housing Company equipment shall be secured with a lock provided by Company.
5. Company requires 24/7 access to Company facilities within the Proposer facility.

B. New Company-Owned Substations

Transmission substations (69kV and above) typically require high levels of security due to the critical role they play in the Company’s system including, but not limited to:

1. Camera Monitoring – Company to procure and install all camera mounts and cameras, terminate cables, and adjust and optimize system as needed.
2. Electronic Card Access System – For control & microwave houses, Company procures/mounts card access devices and installs/terminates cables, and programs and tests devices and peripherals.
3. Infrastructure – Conduits and associated electrical and junction boxes shall be installed by the Proposer as a part of the substation site development. Conduits shall be rigid PVC, dedicated for Security systems purposes only, and sealed properly from the origin to the termination point.
4. Cabling – Cabling shall be installed and terminated by the Company.
5. Integrator – Company’s Security Integrator will procure the server and necessary switches, terminate all ends, program the server, and set all fields of view for all camera shots.
6. Fencing – Schedule 40 galvanized fence post and fence fabric is required for fencing. The fencing shall be 8 feet high with heavy gauge support wire along the length of the bottom. 3-strand barbed wire shall be mounted atop the fence at a 45-degree angle on the inside and outside for the entire length of fence and gates.
7. Locks – All gates shall be secured using a proprietary padlock system. Company will provide physical padlocks for gates and electrical equipment.
8. Lighting – Motion and static lighting are necessary for additional safety and security deterrent measures and to enhance camera viewing at night. Company shall procure and install all lighting as a part of the substation site development. Motion LED lighting arrays shall be placed on all corners and entrances. Static LED lighting arrays shall be placed on the control house and throughout the yard to meet required lighting levels. Lighting shall be Dark Sky compliant.
9. Perimeter Intrusion Detection (138kV only) - Company shall procure and install devices and cables using a contractor that is trained and qualified to install the specified system. Company’s Security Integrator will terminate cables, program, and test system. The specific models for the system will be provided to Proposer after execution of an NDA with the Company.

SECTION 3 – [NOT USED]

SECTION 4 – TYPICAL COMPANY DURATIONS FOR INTERCONNECTION PROJECTS

The tables below in Section 4 are to be used as a reference when developing an overall project schedule to assist Proposers in setting realistic durations and deadlines for critical milestones. These tables represent typical durations for the Company to complete the listed critical milestones that assist in moving the interconnection project through the IRS, Engineering, Procurement, and Construction phases. The durations below do not include time for Proposer to complete items they are responsible for. These high-level typical durations are for planning purposes only and is not intended to cover all project specific requirements. Specific project details can increase or decrease these durations. The detailed project schedule will be determined after the IRS is completed.

4.1 – DISTRIBUTION PROJECTS

Milestone	Company-Build Duration	Notes
IRS Phase		
Model Validation	2-3 months	May increase depending on # of iterations
System Impact Study (SIS)	150 calendar days	Following Model Acceptance
Facility Study (FS)	40 business days	Following completion of SIS, SLD Acceptance, and Receipt of Developer Drawings and Schedules
Engineering Phase		
30% Design & Review	40 business days	
60% Design & Review	50 business days	Following 30% Design acceptance.
90% Design & Review	50 business days	Following 60% Design acceptance
Issued for Construction (IFC) Design & Review	30 business days	Following 90% Design acceptance.
Procurement Phase		
Procurement	9 months	Procurement of materials typically happens at 60% design completion
Construction Phase		
Construction	7-8 months	Based on scope/complexity of work. Construction to begin after procurement completion. For Mid-Tier projects ≥ 1 MW, construction can begin 3 months after completion of IFC.
Acceptance Testing	10 business days	Approximately 2 weeks after construction completion
CSAT	30 business days	To occur after commissioning of Proposer's Facility. Duration depends on Proposer's ability to meet the Performance Standards. Required for projects ≥ 1 MW.

4.2 – SUBTRANSMISSION 46KV (O'AHU) PROJECTS

Milestone	Company-Build Duration	Notes
IRS Phase		
Model Validation	2-3 months	May increase depending on # of iterations
System Impact Study (SIS)	150 calendar days	Following Model Acceptance
Facility Study (FS)	40 business days	Following completion of SIS, SLD Acceptance, and Receipt of Developer Drawings and Schedules
Engineering Phase		
30% Design & Review	40 business days	
60% Design & Review	50 business days	Following 30% Design acceptance.
90% Design & Review	50 business days	Following 60% Design acceptance
Issued for Construction (IFC) Design & Review	30 business days	Following 90% Design acceptance.
Procurement	9 months	Procurement of materials typically happens at 60% design completion
Construction Phase		
Construction	10-12 months	Based on scope/complexity of work. Construction to begin after procurement completion.
Acceptance Testing	30 business days	Approximately 3 weeks after construction completion
CSAT	30 business days	To occur after commissioning of Proposer's Facility. Duration depends on Proposer's ability to meet the Performance Standards.

4.3 – TRANSMISSION PROJECTS

Milestone	Company-Build Duration	Notes
IRS Phase		
Model Validation	2-3 months	May increase depending on # of iterations
System Impact Study (SIS)	150 calendar days	Following Model Acceptance
Facility Study (FS)	40 business days	Following completion of SIS, SLD Acceptance, and Receipt of Developer Drawings and Schedules
Engineering Phase		
30% Design & Review	40 business days	
60% Design & Review	50 business days	Following 30% Design acceptance.
90% Design & Review	50 business days	Following 60% Design acceptance
Issued for Construction (IFC) Design & Review	30 business days	Following 90% Design acceptance.
Procurement Phase		
Procurement	9 months	Procurement of materials typically happens at 60% design completion
Construction Phase		

Milestone	Company-Build Duration	Notes
Construction	10-12 months	Based on scope/complexity of work. Construction to begin after procurement completion.
Acceptance Testing	30 business days	Approximately 3 weeks after construction completion
CSAT	30 business days	To occur after commissioning of Proposer's Facility. Duration depends on Proposer's ability to meet the Performance Standards.

Appendix H, Attachment 1

PROJECT EXAMPLES (O'AHU, MAUI, HAWAI'I) - APPENDIX H UNIT COST TABLE

Examples provided for illustrative purposes only.
Estimated costs represent Company assumed costs that will be used as a proxy in the evaluation process.

Projects ≥ 250 KW AND < 1 MW interconnecting to a distribution circuit (secondary interconnection)

Example 1

270kW PV system with secondary interconnection. Line extension includes tap to existing UG fused feeder and 400ft UG to Company transformer. Proposer site built per Attachment 2 of this Appendix H. Proposer to provide cellular communications with another provider. Company to install communications enclosure.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
1	Company work at Proposer site	1	EA	$390,000	$390,000
102	Tap to UG FF (sec interconnection)	1	EA	$266,000	$266,000
148	12kV UG	0.06	MI	$5,505,000	$312,784
200	Comm Enclosure (< 1MW)	1	EA	$43,000	$43,000
203	Cellular line (by Proposer)	1	LS	$0	$0
			ESTIMATED TOTAL =		**$1,011,784**

Projects ≥ 250 KW AND < 1 MW interconnecting to a distribution circuit (primary interconnection)

Example 2

750kW PV system interconnecting to an existing 12kV UG circuit. Line extension includes tap to existing UG main and 200ft UG to Company switchgear. Proposer site built per Attachment 3 of this Appendix H. Proposer to provide cellular communications with another provider. Company to install communications enclosure.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
2	Company work at Proposer site	1	EA	$390,000	$390,000
104	Tap to UG Main (primary interconnection)	1	EA	$245,000	$245,000
148	12kV UG	0.02	MI	$5,505,000	$104,261
200	Comm Enclosure (< 1MW)	1	EA	$43,000	$43,000
203	Cellular line (by Proposer)	1	LS	$0	$0
			ESTIMATED TOTAL =		**$782,261**

Appendix H, Attachment 1

Projects 1MW or greater interconnecting to a distribution circuit (primary interconnection)

Example 3

2.5MW PV system interconnecting to an existing overhead 12kV circuit on Maui. Line extension includes tap to existing OH line, 500ft underbuild on existing 46kV OH lines, then transitions underground to Proposer's switchgear (within 100ft). All lines are accessible. Proposer site built per Attachment 4 of this Appendix H. DTT required so work required at 1 remote substation site. Proposer to provide leased line telecommunications with another provider. Company to install Company-owned equipment in Proposer-provided communications cabinet. Assumed project duration = 18 months.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
3	Company work at Proposer site	1	EA	$476,000	$476,000
5	Remote substation work (Maui)	1	EA	$170,000	$170,000
103	Tap to OH (primary interconnection)	1	EA	$172,000	$172,000
146	12kV OH underbuild accessible	0.09	MI	$438,000	$41,477
195	Project Management	1	LS	$360,000	$360,000
201	Comm Cabinet (1MW to 3MW)	1	EA	$164,000	$164,000
203	Leased line (by Proposer)	1	LS	$0	$0
			ESTIMATED TOTAL =		**$1,383,477**

Projects interconnecting to a subtransmission circuit

Example 4

5MW PV system interconnecting to an existing overhead 46kV circuit. Line extension includes tap to existing OH line, 450ft overbuild on existing 12kV lines, and 200ft of new 46kV overhead lines to Proposer substation. All lines are accessible. Proposer substation built per Attachment 5 of this Appendix H. DTT and sync/deadline check relay required at 1 remote substation site. Company to install 650ft of ADSS fiber (underbuild) to the Proposer substation and install Company-owned equipment in Proposer-provided communications cabinet; back-up communications is required. Proposer to provide leased line for backup telecommunications. Assumed project duration = 24 months.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
15	Company work at Proposer substation	1	EA	$796,000	$796,000
21	Company work at Remote sites	1	EA	$424,000	$424,000
120	46kV OH to OH Final Tap	1	EA	$85,000	$85,000
163	46kV OH accessible	0.04	MI	$964,000	$36,515
165	46kV OH overbuild accessible	0.09	MI	$1,327,000	$113,097
169	46kV OH switch	1	EA	$47,000	$47,000
196	Project Management	1	LS	$503,000	$503,000
202	Comm Cabinet (> 3MW)	1	EA	$192,000	$192,000
203	Leased line (by Proposer)	1	LS	$0	$0
206	Company fiber underbuild (primary)	0.12	MI	$179,000	$22,036
			ESTIMATED TOTAL =		**$2,218,648**

Appendix H, Attachment 1

Example 5

10MW PV system interconnecting to an existing overhead 46kV circuit. Line extension includes riser tap to existing OH line and 700ft UG to Proposer substation. Proposer substation built per Attachment 4 of this Appendix H. DTT and sync/deadline check relay required at 2 remote sites. Proposer to provide leased line telecommunications with another provider, back-up communications is required. Assumed project duration = 24 months.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
15	Company work at Proposer substation	1	EA	$796,000	$796,000
21	Company work at Remote sites	2	EA	$424,000	$848,000
121	46kV OH to UG Final Tap	1	EA	$409,000	$409,000
167	46kV UG	0.11	FT	$7,243,000	$823,068
196	Project Management	1	LS	$503,000	$503,000
202	Comm Cabinet (> 3MW)	1	EA	$192,000	$192,000
203	Primary Leased line (by Proposer)	1	LS	$0	$0
203	Backup Leased line (by Proposer)	1	LS	$0	$0
			ESTIMATED TOTAL =		**$3,571,068**

Projects interconnecting to a 69kV circuit

Example 6

30MW PV system on Maui/Hawai'i interconnecting to an existing 69kV OH circuit. Company to build a new 2-bay BAAH switching station per Attachment 6 of this Appendix H. Company to build line extension which includes interception of existing line and 1000ft extension of two (2) new 69kV OH lines to new Company switching station. All lines are accessible. Two (2) 69kV circuit switchers and differential protection for two (2) tsf/swgr, line relay upgrades, and line PTs for synch check are required at remote substations. Company to install 650ft of ADSS fiber (underbuild) to the Company switching station and install Company-owned equipment in communications cabinet; back-up communications is required. Proposer to provide leased line for backup telecommunications. Assumed project duration = 36 months.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
30	Company work at new 69kV substation	1	EA	$9,600,000	$9,600,000
34a	69kV line relay upgrades	1	EA	$210,000	$210,000
34b	Circuit switcher & diff protection	2	EA	$270,000	$540,000
34d	3ph line PTs required for synch check	1	EA	$110,000	$110,000
130	69kV OH to OH Final Tap	1	EA	$140,000	$140,000
163	69kV OH accessible	0.34	MI	$964,000	$328,636
197	Project Management	1	LS	$503,000	$503,000
202	Comm Cabinet (> 3MW)	1	EA	$192,000	$192,000
203	Leased line (by Proposer)	1	LS	$0	$0
206	Company fiber underbuild (primary)	0.12	MI	$179,000	$22,036
			ESTIMATED TOTAL =		**$11,645,672**

Appendix H, Attachment 1

Projects interconnecting to a 138kV circuit

Example 7

30MW PV system on O'ahu interconnecting to an existing 138kV OH circuit. Company to build a new 2-bay BAAH switching station per Attachment 7 of this Appendix H. Line extension includes interception of existing line and 1000ft extension of two (2) new 138kV OH lines to new switching station. All lines are accessible. Remote substation work required required at 2 remote subs. Company to install 650ft of ADSS fiber (underbuild) to the Company switching station and install Company-owned equipment in communications cabinet; back-up communications is required. Proposer to provide leased line for backup telecommunications. Assumed project duration = 36 months.

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
32	Company work at new 138kV substation	1	EA	$11,710,000	$11,710,000
36	138kV Remote substation work	2	EA	$460,000	$920,000
133	138kV OH to OH Final Tap	1	EA	$1,079,000	$1,079,000
178	138kV OH accessible	0.34	MI	$6,800,000	$2,318,182
197	Project Management	1	LS	$503,000	$503,000
202	Comm Cabinet (> 3MW)	1	EA	$192,000	$192,000
203	Leased line (by Proposer)	1	LS	$0	$0
206	Company fiber underbuild (primary)	0.12	MI	$179,000	$22,036
				ESTIMATED TOTAL =	**$16,744,218**

Primary station service for Company-owned switching station

Example 8

Primary station service for a Company-owned switching station will be tapped off of the facility service line extension, riser underground, with 2 feeders going to a padmount station service transformer in the switching station located 400ft away from the tap point.

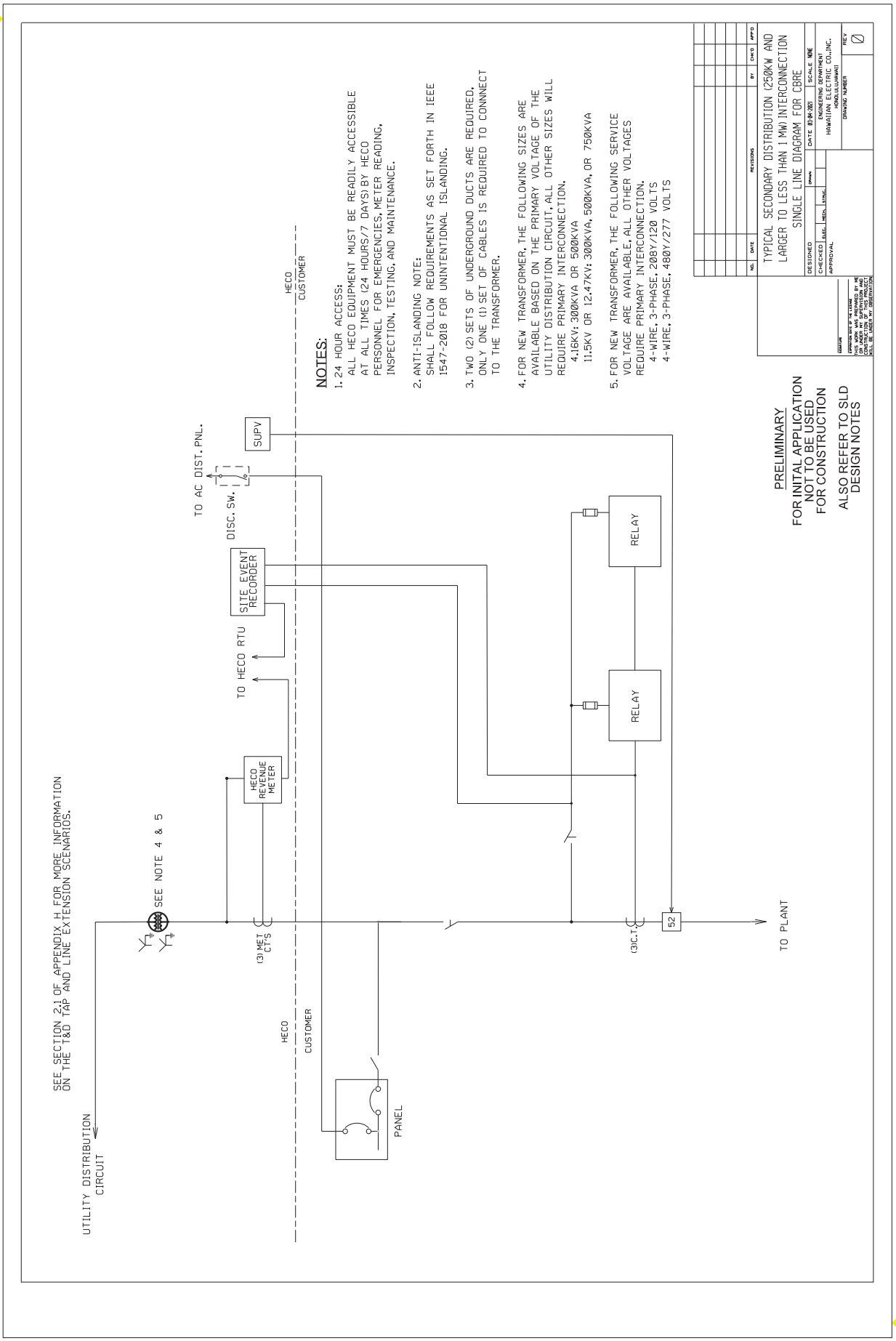
Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
188	Station Service Power	1	EA	$81,000	$81,000
193	12kV 3ph double riser	1	EA	$38,000	$38,000
192	UG double feeder	0.06	MI	$1,014,000	$57,614
				ESTIMATED TOTAL =	**$176,614**

Electrical service to Proposer Facility

Example 9

Proposer requests service from existing 12kV line 0.5 miles away from the facility (new OH line for 0.4 miles and 0.1 miles underbuilt on the Company-owned interconnection lines). The OH lines will riser down and 2 feeders will serve a padmount transformer 100ft away from the riser pole. Proposer to install civil infrastructure (ductlines, MH/HH/vaults, equipment pads, etc.).

Appx H Item	Description	Quantity	Unit	Unit Price ($)	Total Cost ($)
188	Facility Service Power	1	EA	$81,000	$81,000
189	12kV OH accessible	0.4	MI	$655,000	$262,000
190	12kV OH underbuild	0.1	MI	$420,000	$42,000
193	12kV 3ph double riser	1	EA	$38,000	$38,000
192	UG double feeder	0.02	MI	$1,014,000	$19,205
				ESTIMATED TOTAL =	**$442,205**


NOTES:
1. 24 HOUR ACCESS:
ALL HECO EQUIPMENT MUST BE READILY ACCESSIBLE AT ALL TIMES (24 HOURS/7 DAYS) BY HECO PERSONNEL FOR EMERGENCIES, METER READING, INSPECTION, TESTING, AND MAINTENANCE.
2. ANTI-ISLANDING NOTE:
SHALL FOLLOW REQUIREMENTS AS SET FORTH IN IEEE 1547-2018 FOR UNINTENTIONAL ISLANDING.
3. TWO (2) SETS OF UNDERGROUND DUCTS ARE REQUIRED, ONLY ONE (1) SET OF CABLES IS REQUIRED TO CONNNECT TO THE TRANSFORMER.
4. FOR NEW TRANSFORMER, THE FOLLOWING SIZES ARE AVAILABLE BASED ON THE PRIMARY VOLTAGE OF THE UTILITY DISTRIBUTION CIRCUIT, ALL OTHER SIZES WILL REQUIRE PRIMARY INTERCONNECTION.
4.16KV: 300KVA OR 500KVA
11.5KV OR 12.47KV: 300KVA, 500KVA, OR 750KVA
5. FOR NEW TRANSFORMER, THE FOLLOWING SERVICE VOLTAGE ARE AVAILABLE, ALL OTHER VOLTAGES REQUIRE PRIMARY INTERCONNECTION.
4-WIRE, 3-PHASE, 208Y/120 VOLTS
4-WIRE, 3-PHASE, 480Y/277 VOLTS
PRELIMINARY
FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION
ALSO REFER TO SLD
DESIGN NOTES
TYPICAL SECONDARY DISTRIBUTION (250KW AND LARGER TO LESS THAN 1 MW) INTERCONNECTION
SINGLE LINE DIAGRAM FOR CBRE
DESIGNED
CHECKED
APPROVAL
DATE 8-14-2021
SCALE NONE
ENGINEERING DEPARTMENT
HAWAIIAN ELECTRIC CO.,INC.
HONOLULU,HAWAII
DRAWING NUMBER
REV
0
NO. DATE REVISIONS BY CHKD APP'D
SEE SECTION 2.1 OF APPENDIX H FOR MORE INFORMATION ON THE T&D TAP AND LINE EXTENSION SCENARIOS.
UTILITY DISTRIBUTION CIRCUIT
SEE NOTE 4 & 5
HECO REVENUE METER
(3) MET CT'S
TO HECO RTU
SITE EVENT RECORDER
TO AC DIST. PNL.
DISC. SW.
SUPV
HECO
CUSTOMER
PANEL
RELAY
RELAY
(3)C.T.
52
TO PLANT

Template Notes to be added to the 12kV PV/BESS (250kW and larger to less than 1MW) Project Single Line Diagram

Additional requirements may be added based on project design.

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
CUSTOMER SLD REVISION NUMBER AND DATE:	
UTILITY SLD REVISION NUMBER AND DATE:	
UTILITY SUBSTATION:	
UTILITY 12KV CIRCUIT:	
UTILITY 12KV CIRCUIT BREAKER #:	

Section A: Planning Notes

A1. If IRS required, by operation procedure(s), the Project shall be paralleled with the utility system only when the ____(12kV circuit name) 12 kV circuit is in normal operating configuration served via breaker _____ (utility breaker number) at ____(utility substation name) Substation.

A2. Customer to ensure manual closing of Customer's main AC kV breaker CB-A (utility# XXXX) shall be allowed only for hot line (____(utility 12kV circuit) 12 kV line-side) and dead bus (Customer-side) unless otherwise allowed by the Company. There shall be no auto reclosing on Customer's main AC breaker CB-A (utility# XXXX).

Section B: System Operation Notes

B1. Utility load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0, or other utility-approved protocol interface:
   a. Maximum Power Limit and Power Reference Limit (dispatch) set point control signals. Customer is not allowed to override utility's curtailment control; and

B2. The following signals provided by the Customer shall be telemetered to Utility load dispatch office:
   a. Status of Customer's 12kV breaker CB-A (utility# XXXX);
   b. Distribution voltage (3 phase L-N);
   c. Facility Power Possible (kW);
   d. Facility Online/Offline Status;
   e. Facility output (kW) that is being exported to Company System;
   f. Facility's confirmation of a Company control being received and value of that control as implemented.

B3. The facility equipment should be capable of supporting, at a future date additional telemetry data requested by the Company as applicable:
   a. Distribution line amps (3 phase), frequency, NET kW, NET kVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;
   b. PV kW and kVAR output;
   c. BESS kW and kVAR output/charge;
   d. Received kWh accumulator, sent kWh accumulator, received kVARh accumulator, Sent kVARh accumulator;
   e. Plane of Array Solar Irradiance in Watts/m2;
   f. kW output for each inverter;
   g. Status for each inverter (by DNP status);
   h. Facility Net Power Possible (kW);
   i. Volt-Var curve and deadband settings;
   j. Volt-Var Enabled/Disabled Status;
   k. Volt-Watt curve and deadband settings;
   l. Volt-Watt Enabled/Disabled Status;
   m. Frequency-Watt curve and deadband settings;
   n. Frequency-Watt Enabled/Disabled Status;
   o. BESS State of Charge (%);
   p. BESS Energy remaining (kWH);
   q. kW set point for each inverter

B4. The following occurrences shall initiate separate alarm to utility load dispatch office.
   a. RTU Loss of Communication;
   b. Violation of Maximum Ramp Rate Upward (Performance Standard); and
   c. Violation of Maximum Ramp Rate Downward (Performance Standard).

B5. Utility requires 24 hour access to utility-owned SCADA, communication, and utility-owned relaying and monitoring equipment.

B6. Utility shall own a high-speed digital fault recorder (DFR) (i.e., Tesla Lite Model) near the point of interconnection, which shall be in continuous service and on a rolling window basis monitoring sub-cycle voltages, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. Utility requires 24 hour access to this equipment. Customer to provide the following hard wired inputs to utility's power quality device:
   a. Status of Customer's main AC breaker CB-A (utility# XXXX);
   b. line amps (3 phase); and
   c. line-to-line voltage (3 phase)

Section C: Telecommunication Notes

C1. Secure and reliable communication is required for the following:

a. Monitoring and control to/ from Customer's facility;
b. Revenue metering for power export and consumption readings (for 1MW facility; and
c. Phone circuits as required.

C2. Customer to provide leased service from Hawaiian Telecom as required. Customer to coordinate with utility for details

Section D: Metering Notes

D1. Customer to design revenue metering facilities in accordance with the requirements in Chapter 4 of the Hawaiian Electric Company's Electric Service Installation Manual.

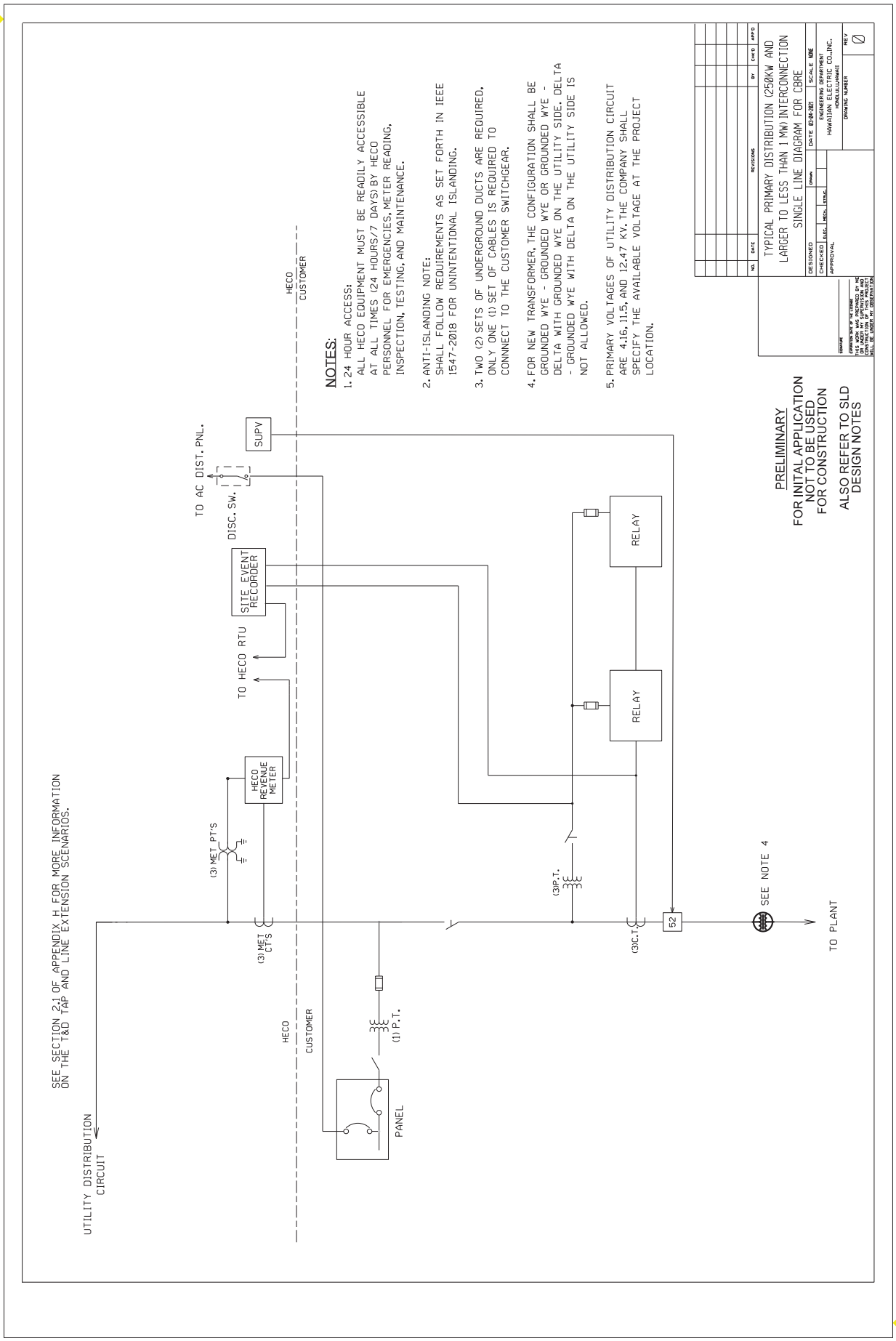
Section E: Design Notes

E1. Customer to provide a reliable DC source for 12 hour backup period; specific voltage to be determined by utility at a later date.

E2. Customer to provide a source of station service power for its facility that will remain available when Customer's 12kV breaker CB-A (utility# XXXX) is opened and the facility is separated from utility's system.

E3. PTs and CTs for DFR should be the same quality as the PTs and CTs for the protective relaying.

E4. Customer to provide raw count (DNP 3.0) for analog points to utility. Customer to provide hardwired dry contact pairs for status points to utility and accept hardwired control points from utility (except for DNP control signals identified in Note B1 and DNP status points identified in Note B3.g).


NOTES:
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2. ANTI-ISLANDING NOTE:
SHALL FOLLOW REQUIREMENTS AS SET FORTH IN IEEE 1547-2018 FOR UNINTENTIONAL ISLANDING.
3. TWO (2) SETS OF UNDERGROUND DUCTS ARE REQUIRED, ONLY ONE (1) SET OF CABLES IS REQUIRED TO CONNECT TO THE CUSTOMER SWITCHGEAR.
4. FOR NEW TRANSFORMER, THE CONFIGURATION SHALL BE GROUNDED WYE - GROUNDED WYE OR GROUNDED WYE - DELTA WITH GROUNDED WYE ON THE UTILITY SIDE, DELTA - GROUNDED WYE WITH DELTA ON THE UTILITY SIDE IS NOT ALLOWED.
5. PRIMARY VOLTAGES OF UTILITY DISTRIBUTION CIRCUIT ARE 4.16, 11.5, AND 12.47 KV. THE COMPANY SHALL SPECIFY THE AVAILABLE VOLTAGE AT THE PROJECT LOCATION.
PRELIMINARY
FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION
ALSO REFER TO SLD
DESIGN NOTES
TYPICAL PRIMARY DISTRIBUTION (250KW AND LARGER TO LESS THAN 1 MW) INTERCONNECTION
SINGLE LINE DIAGRAM FOR CBRE
DESIGNED
CHECKED
APPROVAL
DATE 02-04-2021
SCALE NONE
ENGINEERING DEPARTMENT
HAWAIIAN ELECTRIC CO.,INC.
HONOLULU,HAWAII
DRAWING NUMBER
REV
0
SEE SECTION 2.1 OF APPENDIX H FOR MORE INFORMATION ON THE T&D TAP AND LINE EXTENSION SCENARIOS.
UTILITY DISTRIBUTION CIRCUIT
HECO
CUSTOMER
PANEL
(1) P.T.
(3) MET CT'S
(3) MET PT'S
HECO REVENUE METER
TO HECO RTU
SITE EVENT RECORDER
TO AC DIST. PNL.
DISC. SW.
SUPV
(3)P.T.
(3)C.T.
52
RELAY
RELAY
SEE NOTE 4
TO PLANT

Template Notes to be added to the 12kV PV/BESS (250kW and larger to less than 1MW) Project Single Line Diagram

Additional requirements may be added based on project design.

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
CUSTOMER SLD REVISION NUMBER AND DATE:	
UTILITY SLD REVISION NUMBER AND DATE:	
UTILITY SUBSTATION:	
UTILITY 12KV CIRCUIT:	
UTILITY 12KV CIRCUIT BREAKER #:	

Section A: Planning Notes

A1. If IRS required, by operation procedure(s), the Project shall be paralleled with the utility system only when the ____(12kV circuit name) 12 kV circuit is in normal operating configuration served via breaker _____ (utility breaker number) at ____(utility substation name) Substation.

A2. Customer to ensure manual closing of Customer's main AC kV breaker CB-A (utility# XXXX) shall be allowed only for hot line (____(utility 12kV circuit) 12 kV line-side) and dead bus (Customer-side) unless otherwise allowed by the Company. There shall be no auto reclosing on Customer's main AC breaker CB-A (utility# XXXX).

Section B: System Operation Notes

B1. Utility load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0, or other utility-approved protocol interface:
   a. Maximum Power Limit and Power Reference Limit (dispatch) set point control signals. Customer is not allowed to override utility's curtailment control; and

B2. The following signals provided by the Customer shall be telemetered to Utility load dispatch office:
   a. Status of Customer's 12kV breaker CB-A (utility# XXXX);
   b. Distribution voltage (3 phase L-N);
   c. Facility Power Possible (kW);
   d. Facility Online/Offline Status;
   e. Facility output (kW) that is being exported to Company System;
   f. Facility's confirmation of a Company control being received and value of that control as implemented.

B3. The facility equipment should be capable of supporting, at a future date additional telemetry data requested by the Company as applicable:
   a. Distribution line amps (3 phase), frequency, NET kW, NET kVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;
   b. PV kW and kVAR output;
   c. BESS kW and kVAR output/charge;
   d. Received kWh accumulator, sent kWh accumulator, received kVARh accumulator, Sent kVARh accumulator;
   e. Plane of Array Solar Irradiance in Watts/m2;
   f. kW output for each inverter;
   g. Status for each inverter (by DNP status);
   h. Facility Net Power Possible (kW);
   i. Volt-Var curve and deadband settings;
   j. Volt-Var Enabled/Disabled Status;
   k. Volt-Watt curve and deadband settings;
   l. Volt-Watt Enabled/Disabled Status;
   m. Frequency-Watt curve and deadband settings;
   n. Frequency-Watt Enabled/Disabled Status;
   o. BESS State of Charge (%);
   p. BESS Energy remaining (kWH);
   q. kW set point for each inverter

B4. The following occurrences shall initiate separate alarm to utility load dispatch office.
   a. RTU Loss of Communication;
   b. Violation of Maximum Ramp Rate Upward (Performance Standard); and
   c. Violation of Maximum Ramp Rate Downward (Performance Standard).

B5. Utility requires 24 hour access to utility-owned SCADA, communication, and utility-owned relaying and monitoring equipment.

B6. Utility shall own a high-speed digital fault recorder (DFR) (i.e., Tesla Lite Model) near the point of interconnection, which shall be in continuous service and on a rolling window basis monitoring sub-cycle voltages, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. Utility requires 24 hour access to this equipment. Customer to provide the following hard wired inputs to utility's power quality device:
   a. Status of Customer's main AC breaker CB-A (utility# XXXX);
   b. line amps (3 phase); and
   c. line-to-line voltage (3 phase)

Section C: Telecommunication Notes

C1. Secure and reliable communication is required for the following:

a. Monitoring and control to/ from Customer's facility;
b. Revenue metering for power export and consumption readings (for 1MW facility; and
c. Phone circuits as required.

C2. Customer to provide leased service from Hawaiian Telecom as required. Customer to coordinate with utility for details

Section D: Metering Notes

D1. Customer to design revenue metering facilities in accordance with the requirements in Chapter 4 of the Hawaiian Electric Company's Electric Service Installation Manual.

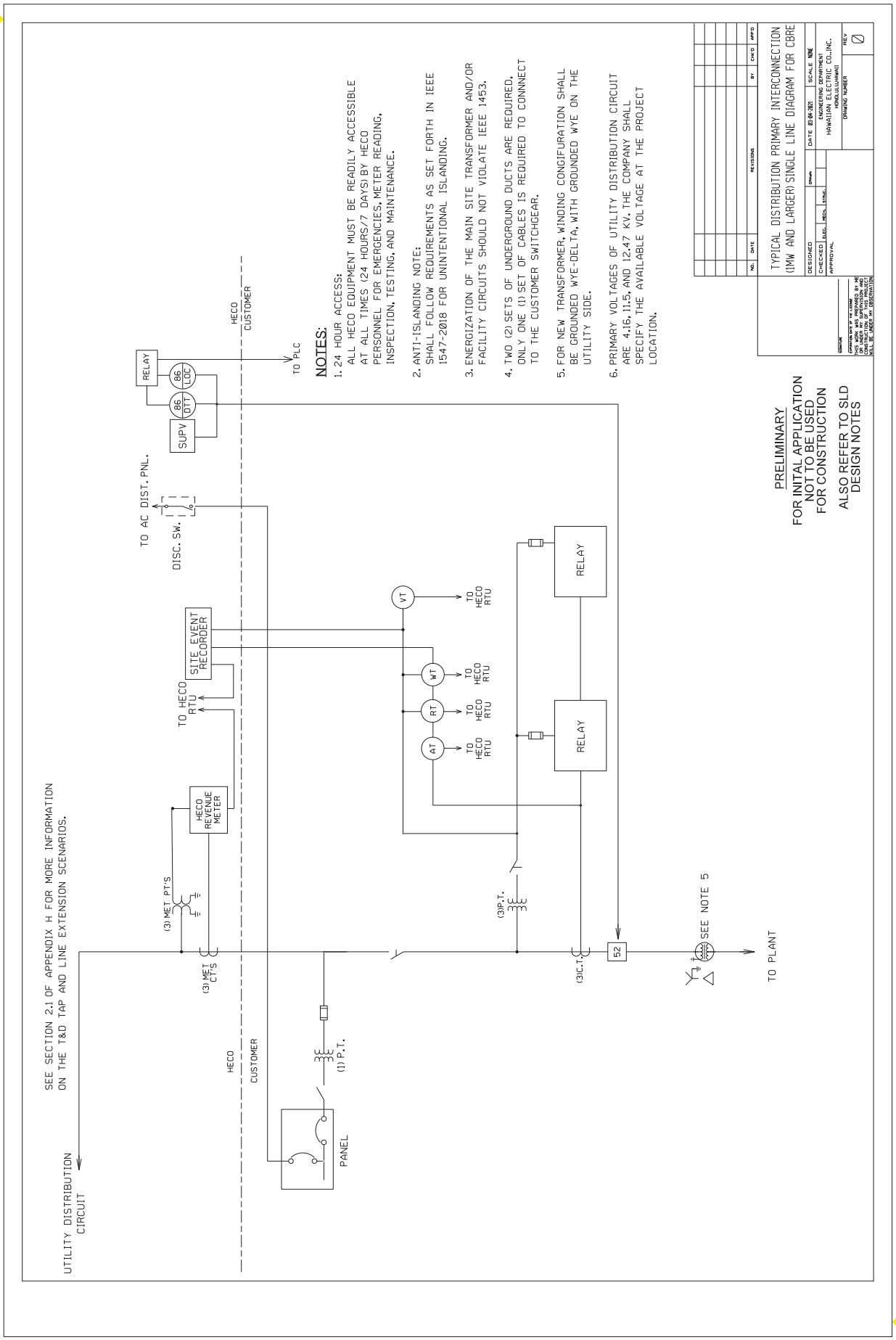
Section E: Design Notes

E1. Customer to provide a reliable DC source for 12 hour backup period; specific voltage to be determined by utility at a later date.

E2. Customer to provide a source of station service power for its facility that will remain available when Customer's 12kV breaker CB-A (utility# XXXX) is opened and the facility is separated from utility's system.

E3. PTs and CTs for DFR should be the same quality as the PTs and CTs for the protective relaying.

E4. Customer to provide raw count (DNP 3.0) for analog points to utility. Customer to provide hardwired dry contact pairs for status points to utility and accept hardwired control points from utility (except for DNP control signals identified in Note B1 and DNP status points identified in Note B3.g).


NOTES:
1. 24 HOUR ACCESS:
ALL HECO EQUIPMENT MUST BE READILY ACCESSIBLE AT ALL TIMES (24 HOURS/7 DAYS) BY HECO PERSONNEL FOR EMERGENCIES, METER READING, INSPECTION, TESTING, AND MAINTENANCE.
2. ANTI-ISLANDING NOTE:
SHALL FOLLOW REQUIREMENTS AS SET FORTH IN IEEE 1547-2018 FOR UNINTENTIONAL ISLANDING.
3. ENERGIZATION OF THE MAIN SITE TRANSFORMER AND/OR FACILITY CIRCUITS SHOULD NOT VIOLATE IEEE 1453.
4. TWO (2) SETS OF UNDERGROUND DUCTS ARE REQUIRED, ONLY ONE (1) SET OF CABLES IS REQUIRED TO CONNNECT TO THE CUSTOMER SWITCHGEAR.
5. FOR NEW TRANSFORMER, WINDING CONGIFURATION SHALL BE GROUNDED WYE-DELTA, WITH GROUNDED WYE ON THE UTILITY SIDE.
6. PRIMARY VOLTAGES OF UTILITY DISTRIBUTION CIRCUIT ARE 4.16, 11.5, AND 12.47 KV. THE COMPANY SHALL SPECIFY THE AVAILABLE VOLTAGE AT THE PROJECT LOCATION.
PRELIMINARY
FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION
ALSO REFER TO SLD
DESIGN NOTES
TYPICAL DISTRIBUTION PRIMARY INTERCONNECTION
(1MW AND LARGER) SINGLE LINE DIAGRAM FOR CBRE
UTILITY DISTRIBUTION CIRCUIT
SEE SECTION 2.1 OF APPENDIX H FOR MORE INFORMATION ON THE T&D TAP AND LINE EXTENSION SCENARIOS.
HECO
CUSTOMER
PANEL
(1) P.T.
(3) MET CT'S
(3) MET PT'S
HECO REVENUE METER
TO HECO RTU
SITE EVENT RECORDER
TO AC DIST. PNL.
DISC. SW.
RELAY
SUPV
86 DTT
86 LLOC
TO PLC
VT
AT
RT
WT
(3)P.T.
(3)C.T.
52
RELAY
RELAY
SEE NOTE 5
TO PLANT

Template Notes to be added to the 12kV PV/BESS (1 MW and larger) Project Single Line Diagram

Additional requirements may be added based on project design.

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
CUSTOMER SLD REVISION NUMBER AND DATE:	
UTILITY SLD REVISION NUMBER AND DATE:	
UTILITY SUBSTATION:	
UTILITY 12KV CIRCUIT:	
UTILITY 12KV CIRCUIT BREAKER #:	

Section A: Planning Notes

A1. By operation procedure(s), the Project shall be paralleled with the utility system only when the ____(12kV circuit name) 12 kV circuit is in normal operating configuration served via breaker _____ (utility breaker number) at ____(utility substation name) Substation.

A2. Upon receipt of direct transfer trip signal from ____(utility substation name) Substation opening of breaker ____(utility breaker number), trip and block close Customer's 12 kV breaker CB-A (utility# XXXX) via utility-owned SCADA resettable lockout relay.

A3. Upon DTT communication channel failure longer than 6 seconds:
   a. Utility to provide signal to Customer to initiate Customer performed ramp down and tripping of Customer's 12 kV breaker CB-A (utility# XXXX).
   b. Utility to initiate trip and block close of Customer's 12 kV breaker CB-A (utility # XXXX) via utility-owned SCADA resettable lockout relay after _____(Project size MW/2 MW per minute ramp down) minutes.

A4. Customer to ensure manual closing of Customer's 12 kV breaker CB-A (utility# XXXX) shall be allowed only for hot line (____(utility 12kV circuit) 12 kV line-side) and dead bus (Customer-side) unless otherwise allowed by the Company. There shall be no auto reclosing on Customer's 12 kV breaker CB-A (utility# XXXX).

Section B: System Operation Notes

B1. Utility shall have SCADA trip control over Customer's 12 kV breaker CB-A (utility# XXXX).

B2. Utility load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0 interface:
   a. Maximum Power Limit and Power Reference Limit (dispatch) set point control signals. Customer is not allowed to override utility's curtailment control; and

b. Line to line Voltage (analog kV) set point control signal.

B3. The following signals provided by the Customer shall be telemetered to utility load dispatch office:
   a. Status of Customer's 12kV breaker CB-A (utility# XXXX);
   b. Status of remotely-resettable lockouts;
   c. 12kV line amps (3 phase), 12kV voltage (3 phase L-N), frequency, NET MW, NET MVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;
   d. 12kV line amps (B phase), 12kV voltage (A-B phase), NET MW, and NET MVAR at point of interconnection through use of utility approved non-programmable analog transducers. Data to be provided in analog format (+/- 1mA) directly from the analog transducers;
   e. PV MW and MVAR output;
   f. BESS MW and MVAR output/charge;
   g. Received KWh accumulator, sent KWh accumulator, received KVARh accumulator, Sent KVARh accumulator.
   h. Status Indicating when Maximum Power Limit is in effect;
   i. Latest received Maximum Power Limit and Power Reference Limit Setpoints;
   j. EMS Control Status indicating who has control over dispatch and voltage (Local vs utility);
   k. Voltage Regulator Status – Normal or Alarm (regular On or Off)
   l. Frequency Response Status – Normal or Alarm (On or Off);
   m. Latest received voltage set point;
   n. Wind speed in Miles per Hour and direction;
   o. Barometric Pressure;
   p. Temperature in Celsius;
   q. Solar Irradiance in Watts/m2;
   r. Humidity in Percent;
   s. KW output for each inverter;
   t. Status for each inverter (by DNP status);
   u. Ramp Rate;
   v. Plant Power Possible (MW);
   w. Frequency Droop percent and deadband settings;
   x. BESS State of Charge (%);
   y. BESS Energy remaining (MWH);
   z. KW set point for each inverter;
   aa. Global Horizontal Irradiance on same axis as array (Watts/m2);
   bb. Plane of Array Irradiance on same axis as array (Watts/m2); and
   cc. Back of Panel temperature at array height (Celsius).

B4. The following occurrences shall initiate separate alarm to utility load dispatch office.
   a. DTT and RTU Loss of Communication;
   b. 48VDC and/or 125VDC Charger Trouble. Specific alarms to be determined by utility at a later date;

c. Trouble alarm for loss of VDC source(s); and
d. Operation of utility-owned SCADA re-settable lockout relays;
e. Violation of Maximum Ramp Rate Upward (Performance Standard); and
f. Violation of Maximum Ramp Rate Downward (Performance Standard).

B5. Utility requires 24 hour access to utility-owned SCADA/RTU, communication, and utility-owned relaying and monitoring equipment.

B6. Utility shall own a high-speed digital fault recorder (DFR) (i.e., Tesla Model No. 4000) near the point of interconnection, which shall be in continuous service and on a rolling window basis monitoring sub-cycle voltages, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. utility requires 24 hour access to this equipment. Customer to provide the following hard wired inputs to utility's power quality device:
a. Status of Customer's 12kV breaker CB-A (utility# XXXX);
b. Status of remotely-resettable lockouts;
c. 12kV line amps (3 phase); and
d. 12kV line-to-neutral voltage (3 phase)

Section C: Telecommunication Notes

C1. For DTT communication channel failure:
a. Signal to Customer to initiate Customer performed ramp down and tripping of Customer's 46 kV breaker CB-A (utility# XXXX) shall be from utility-owned SEL-2411. Utility SEL-2411 signal is to be a continuous signal while communication channel is failed.
b. Trip and block close of Customer's 46 kV breaker CB-A (utility# XXXX) shall be performed by utility-owned SEL-2411 via utility-owned SCADA resettable lockout relay.

C2. Secure and reliable communication is required for the following:
a. Direct transfer trip from ____(utility 12kV circuit) 12kV CB ____(utility breaker number);
b. SCADA to/ from Customer's facility;
c. Optional back-up SCADA to/from Customer's facility;
d. Revenue metering for power export and consumption readings;
e. Power quality and fault recording and retrieval; and
f. Phone circuits as required.

C3. Customer to provide leased service from Hawaiian Telecom as required. Customer to coordinate with utility for details.

C4. All DTT or SCADA loss of comm greater than or equal to 6 seconds shall cause the site to ramp down and trip (applies to both primary and backup).

Section D: Metering Notes

D1. Customer to design revenue metering facilities in accordance with the requirements in Chapter 4 of the Hawaiian Electric Company's Electric Service Installation Manual.

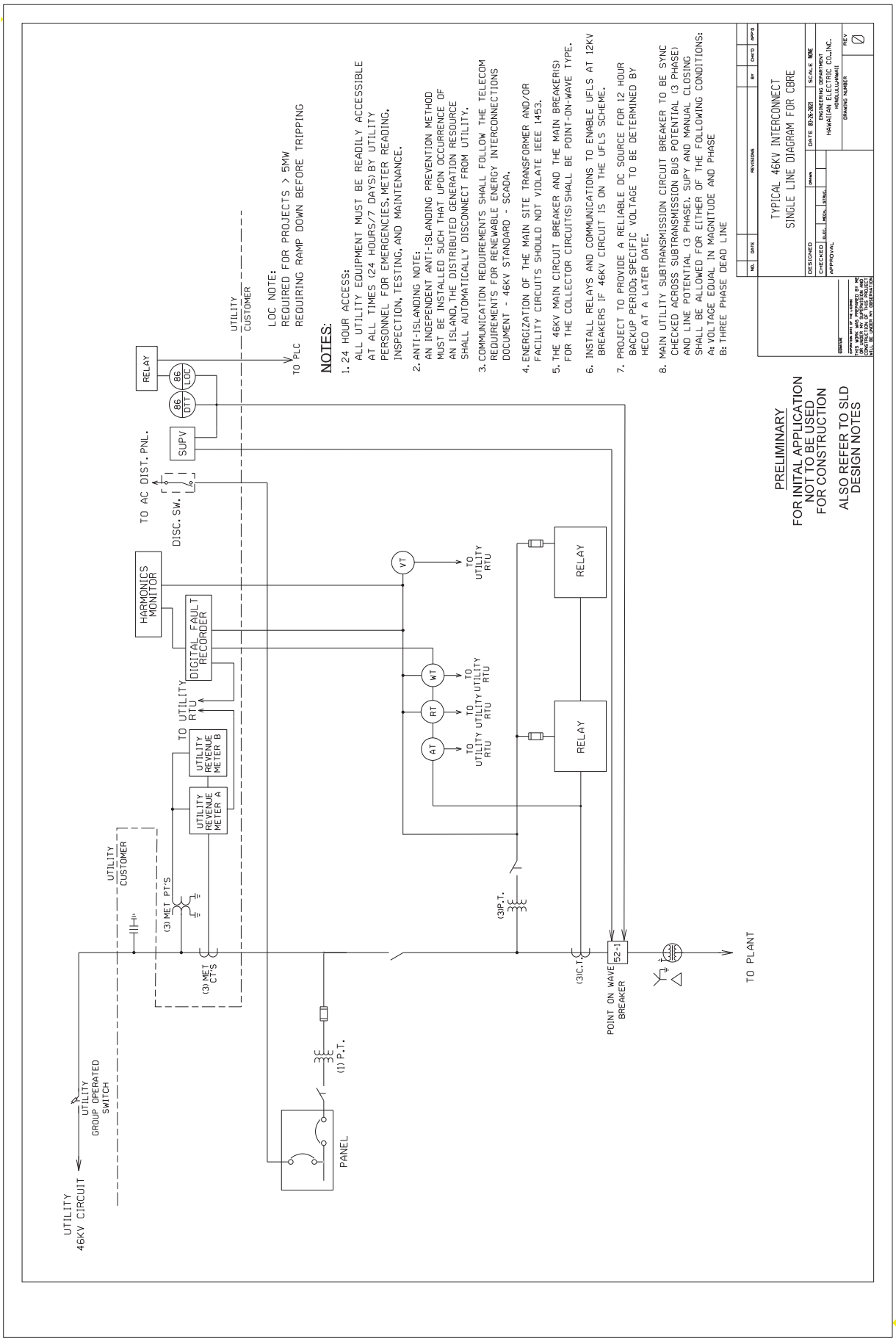
Section E: Design Notes

E1. Customer to provide a reliable DC Source for 12 hour backup period; specific voltage to be determined by utility at a later date.

E2. Customer to provide a source of station service power for its facility that will remain available when Customer's 46 kV breaker CB-A (utility# XXXX) is opened and the facility is separated from utility's system.

E3. PTs and CTs for DFR and RTU transducers should be the same quality as the PTs and CTs for the protective relaying.

E4. Customer to provide raw count (DNP 3.0) for analog points to utility (except as identified in Note B3.d). Customer to provide hardwired dry contact pairs for status points to utility and accept hardwired control points from utility (except for DNP control signals identified in Note B2 and DNP status points identified in Note B3.t).


UTILITY
46KV CIRCUIT
UTILITY
GROUP OPERATED
SWITCH
UTILITY
CUSTOMER
(3) MET PT'S
(3) MET CT'S
UTILITY
REVENUE
METER A
UTILITY
REVENUE
METER B
TO UTILITY
RTU
DIGITAL FAULT
RECORDER
HARMONICS
MONITOR
PANEL
(1) P.T.
(3)P.T.
(3)C.T.
VT
AT
RT
WT
TO
UTILITY
RTU
RELAY
RELAY
POINT ON WAVE
BREAKER
52-1
TO PLANT
DISC. SW.
TO AC DIST. PNL.
SUPV
86
DTT
86
LOC
RELAY
UTILITY
CUSTOMER
LOC NOTE:
REQUIRED FOR PROJECTS > 5MW
REQUIRING RAMP DOWN BEFORE TRIPPING
TO PLC
NOTES:
1. 24 HOUR ACCESS:
ALL UTILITY EQUIPMENT MUST BE READILY ACCESSIBLE AT ALL TIMES (24 HOURS/7 DAYS) BY UTILITY PERSONNEL FOR EMERGENCIES, METER READING, INSPECTION, TESTING, AND MAINTENANCE.
2. ANTI-ISLANDING NOTE:
AN INDEPENDENT ANTI-ISLANDING PREVENTION METHOD MUST BE INSTALLED SUCH THAT UPON OCCURRENCE OF AN ISLAND, THE DISTRIBUTED GENERATION RESOURCE SHALL AUTOMATICALLY DISCONNECT FROM UTILITY.
3. COMMUNICATION REQUIREMENTS SHALL FOLLOW THE TELECOM REQUIREMENTS FOR RENEWABLE ENERGY INTERCONNECTIONS DOCUMENT - 46KV STANDARD - SCADA.
4. ENERGIZATION OF THE MAIN SITE TRANSFORMER AND/OR FACILITY CIRCUITS SHOULD NOT VIOLATE IEEE 1453.
5. THE 46KV MAIN CIRCUIT BREAKER AND THE MAIN BREAKER(S) FOR THE COLLECTOR CIRCUIT(S) SHALL BE POINT-ON-WAVE TYPE.
6. INSTALL RELAYS AND COMMUNICATIONS TO ENABLE UFLS AT 12KV BREAKERS IF 46KV CIRCUIT IS ON THE UFLS SCHEME.
7. PROJECT TO PROVIDE A RELIABLE DC SOURCE FOR 12 HOUR BACKUP PERIOD; SPECIFIC VOLTAGE TO BE DETERMINED BY HECO AT A LATER DATE.
8. MAIN UTILITY SUBTRANSMISSION CIRCUIT BREAKER TO BE SYNC CHECKED ACROSS SUBTRANSMISSION BUS POTENTIAL (3 PHASE) AND LINE POTENTIAL (3 PHASE). SUPV AND MANUAL CLOSING SHALL BE ALLOWED FOR EITHER OF THE FOLLOWING CONDITIONS:
A: VOLTAGE EQUAL IN MAGNITUDE AND PHASE
B: THREE PHASE DEAD LINE
PRELIMINARY
FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION
ALSO REFER TO SLD
DESIGN NOTES
NO.
DATE
REVISIONS
BY
CHKD
APP'D
TYPICAL 46KV INTERCONNECT
SINGLE LINE DIAGRAM FOR CBRE
DESIGNED
DRAWN
DATE 10/25/2021
SCALE NONE
CHECKED
ELEC.
MECH.
STRUC.
APPROVAL
ENGINEERING DEPARTMENT
HAWAIIAN ELECTRIC CO.,INC.
HONOLULU, HAWAII
DRAWING NUMBER
REV.
0

Template notes to be added to the 46kV PV/BESS Project Single Line Diagram

Additional requirements may be added based on project design.

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
U ILITY SUBSTATION:	
U ILITY 6 KV CIRCUIT:	
U ILITY 6 KV CIRCUIT BREAKER #:	

Section A: Planning Notes

A1. By operation procedure(s), the Project shall be paralleled with the utility system only when the ___(46kV circuit name) 46 kV circuit is in normal operating configuration served via breaker ___(utility breaker number) at ___(utility substation name) Substation.

A2. Upon receipt of direct transfer trip signal from ___(utility substation name) Substation opening of breaker ___(utility breaker number), trip and block close Customer's 46 kV breaker 52-1 (utility# XXXX).

A3. All DTT loss of comm greater than or equal to 6 seconds:
   a. Utility to provide signal to Customer to initiate Customer performed ramp down and tripping of Customer's 46 kV breaker 52-1 (utility# XXXX).
   b. Utility to initiate trip and block close of Customer's 46 kV breaker 52-1 (utility# XXXX) after ___(Project size MW/2 MW per minute ramp down) minutes, assuming maximum Customer output of ___(Project size) MW and a 2.0 MW/min ramp down rate.

A4. Customer to ensure manual closing of Customer's 46 kV breaker 52-1 (utility# XXXX) shall be allowed only for hot line (___(utility 46kV line) 46 kV line-side) and dead bus (Customer-side). There shall be no auto reclosing on Customer's 46 kV breaker 52-1 (utility# XXXX).

A5. (If applicable) Disable Under Frequency Load Shed (UFLS) at ___(46kV circuit name) 46kV CB ___(utility Breaker #), if applicable. Install relays and communications to enable UFLS at ___(12kV circuit name(s)) 12kV CB ___(utility Breaker #(s)).

A6. Install a harmonics monitor and associated equipment at the oint of interconnection. The monitor will be in continuous service and on a rolling window basis, monitor sub-cycle voltage and currents, and be capable of remote interrogation. he harmonics monitor shall comply with IEEE STD 1159-2019 and IEEE STD 519-2014. PTs and CTs need to meet relaying and harmonic monitoring applications capable of measuring up to the 50th harmonic. Developer to submit specifications of PTs/CTs to HECO to confirm application. he following inputs shall be provided:
   a. 6kV line current (3 phase) at point of interconnection; and
   b. 46kV line-to-neutral voltage (3 phase) at point of interconnection

Section B: System Operation Notes

B1. Utility shall have SCADA trip control over Customer's 46 kV breaker 52-1 (utility# XXXX).

B2. Utility load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0 interface:
   a. Maximum Power Limit and Power Reference Limit (dispatch) set oint control signals. Customer is not allowed to override utility's curtailment control; and
   b. Line to line Voltage (analog kV) set point control signal.

B3. All control values must be retained in non-volatile memory such that they will be restored immediately upon return from a systems restart, power outage, loss of communication, etc.

B4. he following signals provided by the Customer shall be tele etered to utility load dispatch office:
   a. Status of Customer's 46kV breaker 52-1 (utility# XXXX);
   b. Status of remotely-resettable lockouts;
   c. 46kV line amps (3 phase), 46kV voltage (3 phase L-N), frequency, NET MW, NET MVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;
   d. 46kV line amps (B phase), 46kV voltage (A-B phase), NET MW, and NET MVAR at point of interconnection through use of utility approved non-programmable analog transducers. Data to be provided in analog format (+/- 1mA) directly from the analog transducers;
   e. PV MW and MVAR output;
   . BESS MW and MVAR output/charge;
   g. Received KWh accumulator, sent KWh accumulator, received KVARh accumulator, Sent KVARh accumulator.
   h. Status Indicating when Maximum Power Limit is in effect;
   i. Latest received Maximum Power Limit and Power Reference Limit Setpoints;
   j. EMS Control Status indicating who has control over dispatch and voltage (Local vs utility);
   k. Voltage Regulator Status – Normal or Alarm (regular On or Off)
   l. Frequency Response Status – Normal or Alarm (On or Off);
   . Latest received voltage set point;
   n. Wind speed in Miles per Hour and direction;
   o. Barometric Pressure;
   . emperature in Celsius;
   q. Solar Irradiance in Watts/m2;
   r. Humidity in Percent;
   s. KW output for each inverter;
   t. KW setpoint for each inverter;
   u. Status for each inverter (by DNP status);
   v. Number of inverters available;

w. Grid Following/Grid Forming;
x. Ramp Rate;
y. Ramp Rate Limit;
z. Plant Power Possible (MW);
aa. Frequency Droop percent and deadband settings;
bb. BESS State of Charge (%);
cc. BESS Energy remaining (MWH);
dd. KW set point for each inverter;
ee. Global Horizontal Irradiance on same axis as array (Watts/m2);
. Plane of Array Irradiance on same axis as array (Watts/m2); and
gg. Back of Panel temperature at array height (Celsius).

B5. The following occurrences shall initiate separate alarm to utility load dispatch office.
a. DTT and RTU Loss of Communication;
b. 48VDC and/or 125VDC Charger Trouble. Specific alarms to be determined by utility at a later date;
c. rouble alarm for loss of VDC source(s); and
d. Operation of utility-owned SCADA re-settable lockout relays;
e. Violation of Maximum Ramp Rate Upward (Performance Standard); and
. Violation of Maximum Ramp Rate Downward (Performance Standard).

B6. Utility requires 24 hour access to utility-owned SCADA/RTU, communication, and utility-owned relaying and monitoring equipment.

B7. Utility shall own a high-speed digital fault recorder (DFR) (i.e., Tesla Model No. 4000) near the point of interconnection, which shall be in continuous service and on a rolling window basis monitoring sub-cycle voltages, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. Harmonics monitoring shall comply with IEEE Std 1159-2009 and IEEE Std 519-2014. Utility requires 24 hour access to this equipment. Customer to provide the following hard wired inputs to utility's power quality device:
a. Status of Customer's 46kV breaker 52-1 (utility# XXXX);
b. Status of remotely-resettable lockouts;
c. 6kV line amps (3 phase); and
. 6kV line-to-neutral voltage (3 phase)

Section C: Telecommunication Notes

C1. Customer to provide a reliable DC Source for 12 hour backup eriod; specific voltage to be determined by utility at a later date.

C2. Customer to provide a source of station service power for its facility that will remain available when Customer's 46 kV breaker 52-1 (utility# XXXX) is opened and the facility is separated from utility's system.

C3. For DTT communication channel failure:
   a. Signal to Customer to initiate Customer performed ramp down and tripping of Customer's 46 kV breaker 52-1 (utility# XXXX) shall be utility-owned SEL-2411. Utility SEL-2411 signal is to be a continuous signal while communication channel is failed.
   b. Trip and block close of Customer's 46 kV breaker 52-1 (utility# XXXX) shall be utility-owned SEL-2411 via utility-owned SCADA resettable lockout relay ("86/LOSS COMM").

C4. Secure and reliable communication is required for the following:
   a. Direct transfer trip from ___(utility 46kV circuit) 46kV CB ___(utility Breaker #);
   b. SCADA to/ from Customer's facility;
   c. Back-up SCADA to/from Customer's facility;
   d. Revenue metering for power export and consumption readings;
   e. Power quality and fault recording and retrieval; and
   . Phone circuits as required.

   Customer to provide leased service from Hawaiian Telecom to sup ort items a through f. Customer to coordinate with utility for details.

C5. All DTT loss of comm greater than or equal to 6 seconds shall cause the site to ramp down and trip (applies to both primary and backup).

Section D: Metering Notes

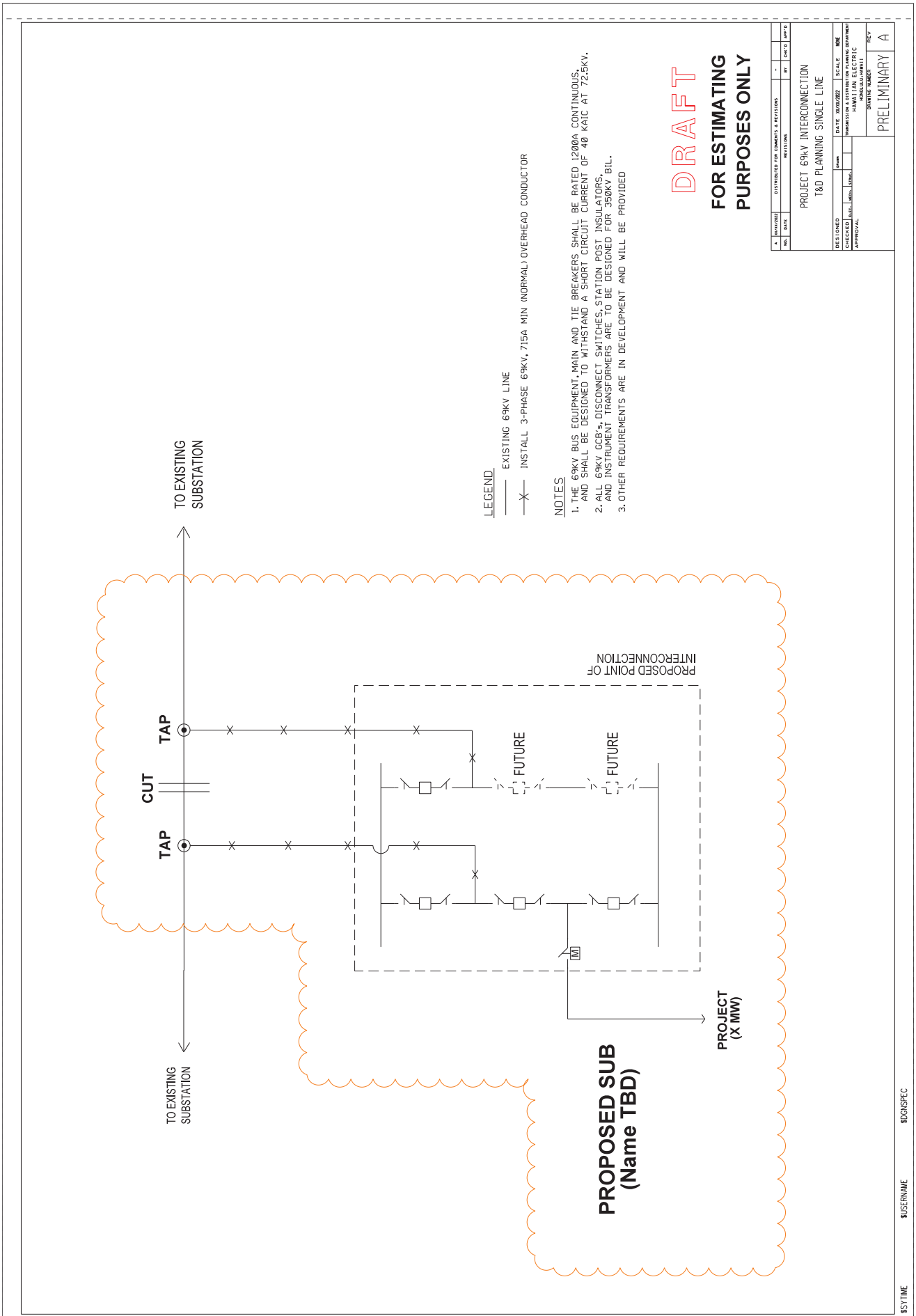
D1. Customer to design revenue metering facilities in accordance with the requirements in Chapter 6 of the Hawaiian Electric Company's Electric Service Installation Manual.

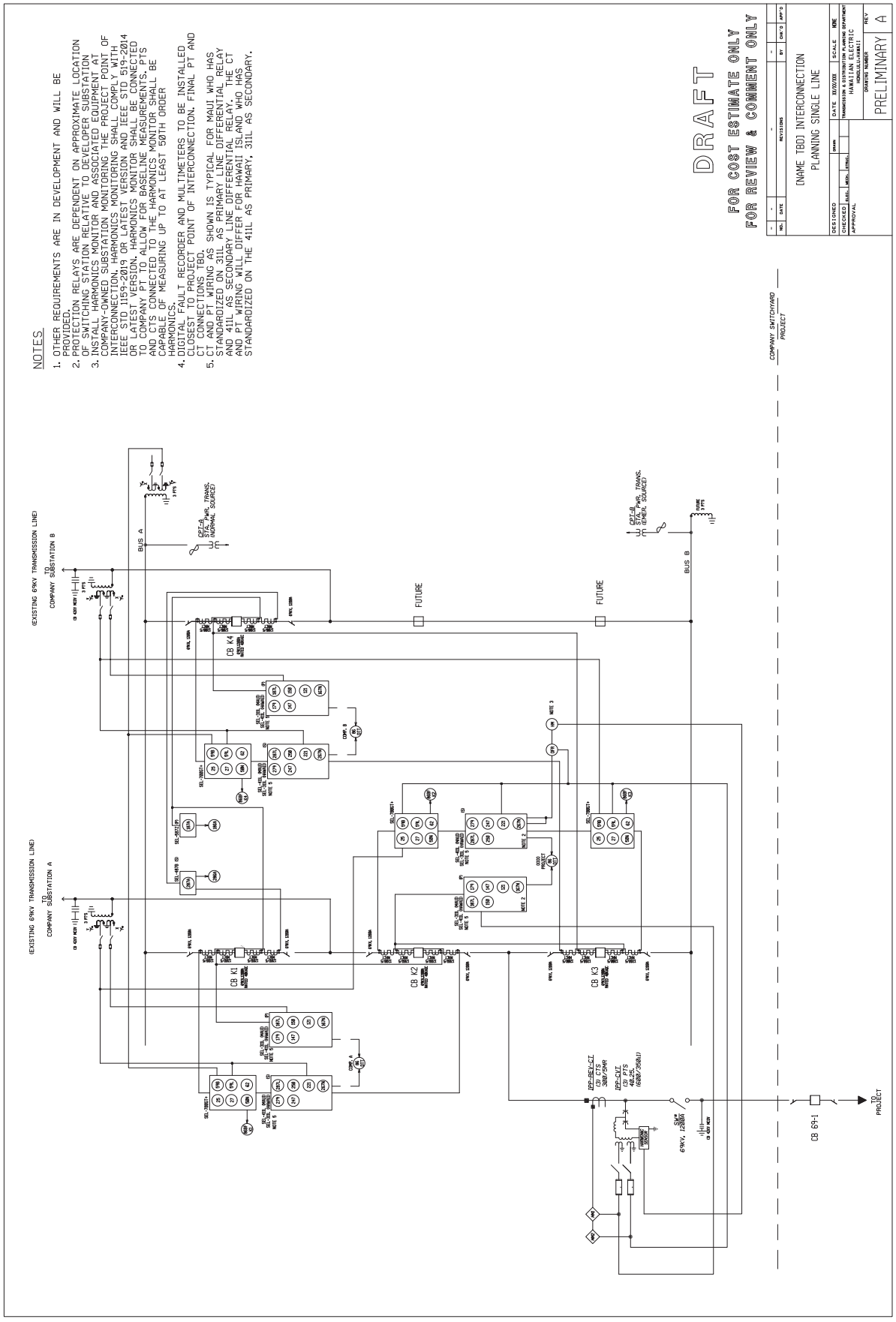
Section E: Design Notes

E1. PTs and CTs for Tesla and RTU transducers should be the same quality as the PTs and CTs for the 46kV protective relaying.

E2. Customer to provide raw count (DNP 3.0) for analog points to utility (except as identified in Note B4.d). Customer to provide hardwired dry contact pairs for status points to utility, and accept hardwired control points from utility (except for DNP control signals identified in Note B2 and DNP status points identified in Note B4.u).

E3. DTT trip signals from utility to Customer's 46 kV breaker 52-1 (utility# XXXX) shall be via utility-owned SCADA resettable lockout relay


DRAFT
FOR ESTIMATING PURPOSES ONLY
LEGEND
EXISTING 69KV LINE
INSTALL 3-PHASE 69KV, 715A MIN (NORMAL) OVERHEAD CONDUCTOR
NOTES
1. THE 69KV BUS EQUIPMENT, MAIN AND TIE BREAKERS SHALL BE RATED 1200A CONTINUOUS, AND SHALL BE DESIGNED TO WITHSTAND A SHORT CIRCUIT CURRENT OF 40 KAIC AT 72.5KV.
2. ALL 69KV GCB's, DISCONNECT SWITCHES, STATION POST INSULATORS, AND INSTRUMENT TRANSFORMERS ARE TO BE DESIGNED FOR 350KV BIL.
3. OTHER REQUIREMENTS ARE IN DEVELOPMENT AND WILL BE PROVIDED
TO EXISTING SUBSTATION
TAP
CUT
TAP
FUTURE
FUTURE
PROPOSED POINT OF INTERCONNECTION
M
PROJECT (X MW)
PROPOSED SUB (Name TBD)
TO EXISTING SUBSTATION
PROJECT 69KV INTERCONNECTION
T&D PLANNING SINGLE LINE
DESIGNED
CHECKED
APPROVAL
DRAWN
DATE 12/31/2012
SCALE NONE
TRANSMISSION & DISTRIBUTION PLANNING DEPARTMENT
HAWAIIAN ELECTRIC
HONOLULU, HAWAII
DRAWING NUMBER
PRELIMINARY
REV A
DISTRIBUTED FOR COMMENTS & REVISIONS
REVISIONS
$SYTIME
$USERNAME
$DGNSPEC


NOTES
1. OTHER REQUIREMENTS ARE IN DEVELOPMENT AND WILL BE PROVIDED.
2. PROTECTION RELAYS ARE DEPENDENT ON APPROXIMATE LOCATION OF SWITCHING STATION RELATIVE TO DEVELOPER SUBSTATION
3. INSTALL HARMONICS MONITOR AND ASSOCIATED EQUIPMENT AT COMPANY-OWNED SUBSTATION MONITORING THE PROJECT POINT OF INTERCONNECTION. HARMONICS MONITORING SHALL COMPLY WITH IEEE STD 1159-2019 OR LATEST VERSION AND IEEE STD 519-2014 OR LATEST VERSION. HARMONICS MONITOR SHALL BE CONNECTED TO COMPANY PT TO ALLOW FOR BASELINE MEASUREMENTS. PTS AND CTS CONNECTED TO THE HARMONICS MONITOR SHALL BE CAPABLE OF MEASURING UP TO AT LEAST 50TH ORDER HARMONICS.
4. DIGITAL FAULT RECORDER AND MULTIMETERS TO BE INSTALLED CLOSEST TO PROJECT POINT OF INTERCONNECTION. FINAL PT AND CT CONNECTIONS TBD.
5. CT AND PT WIRING AS SHOWN IS TYPICAL FOR MAUI WHO HAS STANDARDIZED ON 311L AS PRIMARY LINE DIFFERENTIAL RELAY AND 411L AS SECONDARY LINE DIFFERENTIAL RELAY. THE CT AND PT WIRING WILL DIFFER FOR HAWAII ISLAND WHO HAS STANDARDIZED ON THE 411L AS PRIMARY, 311L AS SECONDARY.
DRAFT
FOR COST ESTIMATE ONLY
FOR REVIEW & COMMENT ONLY
NO. DATE REVISIONS BY CHK'D APP'D
<NAME TBD> INTERCONNECTION
PLANNING SINGLE LINE
DESIGNED
CHECKED
APPROVAL
DATE 10/20/20
SCALE NONE
TRANSMISSION & SUBSTATION PLANNING DEPARTMENT
HAWAIIAN ELECTRIC
HONOLULU, HAWAII
DRAWING NUMBER
REV
PRELIMINARY A
(EXISTING 69KV TRANSMISSION LINE)
TO
COMPANY SUBSTATION B
(EXISTING 69KV TRANSMISSION LINE)
TO
COMPANY SUBSTATION A
BUS A
BUS B
FUTURE
FUTURE
CB K4
CB K1
CB K2
CB K3
CB 69-1
TO PROJECT
COMPANY SWITCHYARD
PROJECT

Notes to be added to the 69kV Company Substation Single Line Di gram

COMPANY SUBSTATION:	
COMPANY SLD REVISION NUMBER AND DATE:	
NOTES DATE	

69kV bus equipment and breakers shall be rated 120 A continuous and shall be designed to withstand a short circuit current of 40 KAIC @ 72.5kV.

2. All 69kV Gas Circuit Breakers (GCB), disconnect switches, station post insulators, and instrument transformers are to be designed for 350kV BIL.

3. kV breaker K1 and K4 to be 1PH synchro-checked across its 6 kV Bus A and line potentials (3-PH) and allowed to close only under the following conditions:
   A. Automatic Reclosing
      i. [TBD by IRS]
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase, and phase angle difference less than 20°
      ii. Dead-line and dead-bus
      iii. Dead-line and hot-bus
      iv. Hot-line and dead-bus

4. 69kV breaker K2 to be 3PH synchro-checked across its line potentials (3-PH) on both sides of the 69kV breaker and allowed to close only under the following conditions:
   A. No Automatic Reclosing
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase, and phase angle difference less than 20°
      ii. Three-phase dead-line and three-phase dead-line
      iii. Three-phase dead-line and three-phase hot-line
      iv. Three-phase hot-line and three-phase dead-line

5. 69kV breaker K3 to be 3PH synchro-checked across its line potentials (3-PH) on both sides of the 69kV breaker and allowed to close only under the following conditions:
   A. No Automatic Reclosing
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase, and phase angle difference less than 20°
      ii. Three-phase dead-line and three-phase dead-line
      iii. Three-phase dead-line and three-phase hot-line
      iv. Three-phase hot-line and three-phase dead-line

   All trips from developer to Company shall trip and block close breakers K2 and K3 depending on the trip.

7. Install a harmonics recorder and associated equipment at each project point of interconnection, which will be in continuous service and on a rolling window basis monitor sub-cycle voltage and currents and capable of remote interrogation. Harmonics monitoring shall comply with IEEE Std

1159-2019 or latest version and IEEE Std 519-2014 or latest version. Harmonics monitor shall be connected to company-side PT to allow for baseline measurements PTs and CTs connected to the harmonics monitor shall be capable of measuring up to at least 50th order harmonics. The following inputs shall be provided:

a. 69kV voltage (3-ph) at or near the point of interconnection for Project
b. 69kV current (3-ph) at or near the point of interconnection measuring total current from Project

8. Substation to be built as functional ring bus in formation of breaker-and-half as shown on Planning SLD. Space should be left for two additional breakers to be installed to complete the second breaker-and-half bay.

   Bus A differential relays operation shall trip and block close breakers K1 and K4 via manual lockout relays.

   Developer line current differential relay operation shall trip and block close breakers K2, K3, and Company DTT lockout relay. Developer breaker 69-1 trip and block close via separate dedicated lockout relay owned by the Developer.

   The local breaker failure scheme shall trip and block close all adjacent breakers via manual lockout relays.

2. Breaker failure of 69kV breakers K2 or K3 shall trip Company DTT lockout relay which will trip and block close Developer's 69kV breaker 69-1 via separate dedicated lockout relays owned by the Developer.

3. Breaker failure of Developer's 69kV breaker 69-1 shall trip developer-owned dedicated lockout relay which will trip dedicated lockout relay in Company substation. Dedicated lockout relay in Company substation will trip and block close breakers K2 and K3.

4. The following local 69kV breaker failure conditions shall initiate a direct transfer trip (DTT) to trip and block close the respective 69kV breakers at the remote substation via a dedicated remotely resettable lockout relay at the remote substation:

Local Breaker Failure Condition	**Breaker Failure DTT to Remote Substation**
[Name TBD] Sub Bkr XXXX Fail	Trip [Name TBD] Sub Bkrs K1 & K2
[Name TBD] Sub Bkr XXXX Fail	Trip [Name TBD] Sub Bkrs K1 & K2
[Name TBD] Sub Bkr XXXX Fail	Trip [Name TBD] Sub Bkrs K3 & K4
[Name TBD] Sub Bkr XXXX Fail	Trip [Name TBD] Sub Bkrs K3 & K4
[Name TBD] Sub Bkr K1 Fail	Trip [Name TBD] Sub Bkrs XXXX & XXXX
[Name TBD] Sub Bkr K2 Fail	Trip [Name TBD] Sub Bkrs XXXX & XXXX
[Name TBD] Sub Bkr K3 Fail	Trip [Name TBD] Sub Bkrs XXXX & XXXX
[Name TBD] Sub Bkr K4 Fail	Trip [Name TBD] Sub Bkrs XXXX & XXXX

15. All 69kV CT's are to be MRCT's with relaying accuracy class C800 unless noted otherwise. MRCT's are to have full distributed windings on all taps and a minimum thermal rating factor of 2.0.

    All 69kV circuit breakers are to be dead tank design with a rated interrupting time of 3 cycles, and have dual trip coils with independent tripping circuits.
    (Provide the Protection Department with CT saturation, ratio correction factor curves, and continuous thermal rating factors.)

7. All 69kV breakers are controlled and supervised by Company System Operator via supervisory equipment and also have control switches in the control house.

8. Install a digital fault recorder near point of interconnection, which will be in continuous service and on a rolling window basis monitor sub-cycle voltage, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. The following inputs shall be provided and direct hard wired to the recorder:

    a. Status of all 69kV [Name TBD] substation breakers
    b. Status of all lockouts for 69kV [Name TBD] substation breakers
    c. kV voltage (3-ph) at or near the point of interconnection
    d. 69kV current (3-ph) at or near the point of interconnection measuring individual phase currents from the Project
    e. Digital Inputs from Protection Relays emulating the trip output of the Relay

    Each of the following control and status points shall be remotely controlled and supervised by Company System Operator:

    a. Trip/Close and status of all 69kV breakers and Motor Operated Switches
    b. Status of each lockout

20. Each of the following analog points shall be telemetered to Company System Operator:

    a. All 69kV line amps (3 phase), watts (MW), and vars (MVAR)
    b. All 69kV bus and line voltages (3 phase) (kV)
    c. kWh values via Revenue Meter "A" (Pulse Accumulator Point in lieu of Analog Point acceptable)
    d. Fault Distance for all 69kV lines

    (Note, meters, relays, and transducers for a-d shall be Company owned, maintained, and operated.)

21. Each of the following initiates an alarm to Company System Operator:

    a. Protection communication failure (Loss of Pilot Alarm)
    b. RTU communication failure
    c. 25V DC battery low voltage
    d. 25V DC charger trouble
    e. Loss of Trip circuit (individual alarm for each trip circuit)

f. 48V DC battery low voltage

g. 48V DC charger trouble

h. Line Relay Loss of 69kV line and/or synchronism-check (bus) potential (for each line relay)

i. kV GCB low SF6 gas pressure (individual alarm for each GCB)

j. Block operation SF6 gas (which indicates SF6 low-low gas pressure) for each GCB

k. 69kV GCB spring discharge alarm (individual alarm for each GCB)

l. Loss of normal AC station power source

m. Loss of emergency AC station power source

n. Operation of AC station power auto-transfer switch to emergency source

o. Each lockout relay (86) operation

p. Each digital protective relay (primary and secondary) trouble alarm

Notes to be added to the 69kV Project Single Line Diagram

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
DEVELOPER SLD REVISION NUMBER AND DATE:	
MECO SLD REVISION NUMBER AND DATE:	
COMPANY ATION :	

1. Project shall install point-on-wave breakers, specifically independent pole operated (IPO) breakers with residual flux calculation capability, when more than five energizations are expected or observed in any 12-month period after commercial operations. Energizations is only to occur in coordination with the Company system operator. The voltage deviation at the point of interconnection (POI) must be limited to +/- 6% when energizing the Project. [TBD by IRS]

2. Opening of 69kV breakers K2 and K3 shall trip Developer's 69kV breaker CB 69-1 via Company-owned lockout relay.

3. Developer to ensure manual closing of breaker CB 69-1 shall be allowed for the following conditions under coordination with the Company system operator:

    a. Hot line (company-side) and dead bus (project-side).

    b. Hot line (company-side) and hot bus (project-side) with supervised synchro-check for self-energization using grid forming capabilities.

        i. Voltages equal in magnitude and phase and phase angle difference less than 20°

    c. Dead line (company-side) and hot bus (project-side), for black start provided by grid forming capabilities.

4. There shall be no auto-reclosing on Project 69kV breaker CB 69-1.

5. Breaker failure of 69kV breaker K2 or K3 at Company Substation shall trip a Company lockout relay which will trip and block close Project 69kV breaker 69-1 via separate dedicated lockout relay.

6. Breaker failure of Project 69kV breaker 69-1 shall trip developer-owned dedicated lockout relay which will trip dedicated lockout relay in Company substation. Dedicated breaker failure lockout relay in Company substation will trip and block close Company 69kV breakers K2 and K3.

7. All trips going to developer sub shall go through dedicated Company lockout relays. Company lockout relays will be owned by Company, SCADA resettable, and shall trip a dedicated lockout relay in developer substation. All trips from developer to Company shall go through a dedicated developer owned lockout relay and trip a dedicated lockout relay in Company substation.

8. The Project/Developer will submit design drawings to Company for review and comment.

9. All 69kV CT's are to be 1200/5 MRCT's with relaying accuracy class C800 unless noted otherwise. MRCT's are to have full distributed windings on all taps and a minimum thermal rating factor of 2.0

10. The following Developer's inputs shall be provided and direct hard wired to HELCO's digital fault recorder:
    a. tatus of all Developer's 69kV breakers
    b. tatus of all Developer's 35kV breakers
    c. tatus of all lockouts for Developer's breakers
    d. Digital Inputs from Protection Relays emulating the trip output of the Relay
11. Trip Control for Project Breaker 69-1 (HELCO SCADA close control can also be provided at the Developers request, and with proper synch check relaying)
12. HELCO System Operator shall be enabled to issue the following to the Developer via mutually agreed communication protocol interface (typically DNP 3.0):
    a. Active Power reference set point* control signal. HELCO's Active Power Control Interface will take precedence over customer's local active power control; and
    b. Voltage or MVAR (analog kV or MVAR) set point control signal, or discrete contact pulse for incremental Voltage or MVAR set point raise/lower control. pecific control type to be established during control system design review.
    c. [As Applicable] Frequency Response Mode (Droop,Isoch,FFR,Disabled)
    d. [As Applicable] Frequency Droop Setting (%)
    e. [As Applicable] Isoch Target Frequncy (Hz)

    (*A Pulse Width Modulated (PWM) Raise-Lower Control could be agreed to in lieu of set point control, during the plant controller design review, the active power control interface should be submitted for HELCO review and agreement prior to finalizing.)

13. All control values must be retained in non-volatile memory such that will be restored immediately upon return from Plant Controller restart, power outage, loss of communication, etc.
14. The Project will provide the following signals for telemetering to the HELCO System Operator:
    a. 69kV line amps (3 phase), watts (MW), vars (MVAR), and voltage (kV) (3 phase)
    b. tatus of the Project 69kV breakers 69-1
    c. tatus of the Project feeder breakers
    d. tatus of all lockouts
    e. Latest received power reference set point (Echo)
    f. Latest received voltage setpoint (Echo)
    g. Ramp Rate (Maximum Dispatchable Up & Down)
    h. [Solar Projects] Plane of Array Irradiance (Watts/m2)
    i. [Solar or Wind Projects] Ambient air temperature at the MMS/MMT (Celsius)

j. [Solar or Wind Projects] Wind speed at the MMS/MMT (mph)
k. [Wind Projects] Wind direction at the MMT (degrees from true north)
l. [Wind Projects] Ambient Air Pressure at the MMT (mbar)
m. [Solar or Wind Projects] Number of Inverters or WTGs Available
n. [Variable Resource Projects] Total Facility Power Possible (MW)
o. [Variable Resource Projects] Resource Potential (MW)
p. [Solar Projects] Gross MW Production of PV System (MW)
q. [Wind Projects] Gross MW Production of WTGs (MW)
r. [Projects with BESS] Gross MW Production/Consumption of BESS ystem (MW)
s. Net AC MW production at Point of interconnection (MW)
t. Net AC MVAR production at the Point of interconnection (MVAR)
u. otal Facility Auxiliary Load (Power Demand) (MW & MVAR)
v. [Projects with BESS] BESS State of Charge (%)
w. [Projects with BESS] Facility Duration at Current Output (hrs)
x. [Projects with BESS] YTD BESS Effective Full Cycles
y. Minimum Sustained Power Limit (MW) (ecomin, typically 0 for inverter-based technology)
z. Minimum transient Power Limit (MW) (lfcmin, typically 0 for inverter-based technology, can be less than 0 for energy storage allowed to charge from grid)
aa. [Firm Projects] Available Capacity (MW)
bb. [As Applicable] Frequency Response Mode (Droop,Isoch,FFR,Disabled)
cc. [As Applicable] Frequency Droop Setting (%)
dd. [As Applicable] Isoch Target Frequncy (Hz)

15. Each of the following initiates a separate alarm to HELCO System Operator:
    a. Protection communication failure (Loss of Pilot Alarm);
    b. RTU communication failure
    c. Violation of Maximum Ramp Rate Upward or Downward (Performance Standard);
    d. Active Power Control Interface Status (Local/Remote)
    e. Automatic Voltage Regulation (AVR) Status – (Enabled/Disabled)
    f. Frequency Response Status (Enabled/Disabled)
16. [For RDG Contracts] Each of the following quantities need to be logged locally for Company review upon request:
    a. tatus of each inverter/WTG

b. MW output of each inverter/WTG

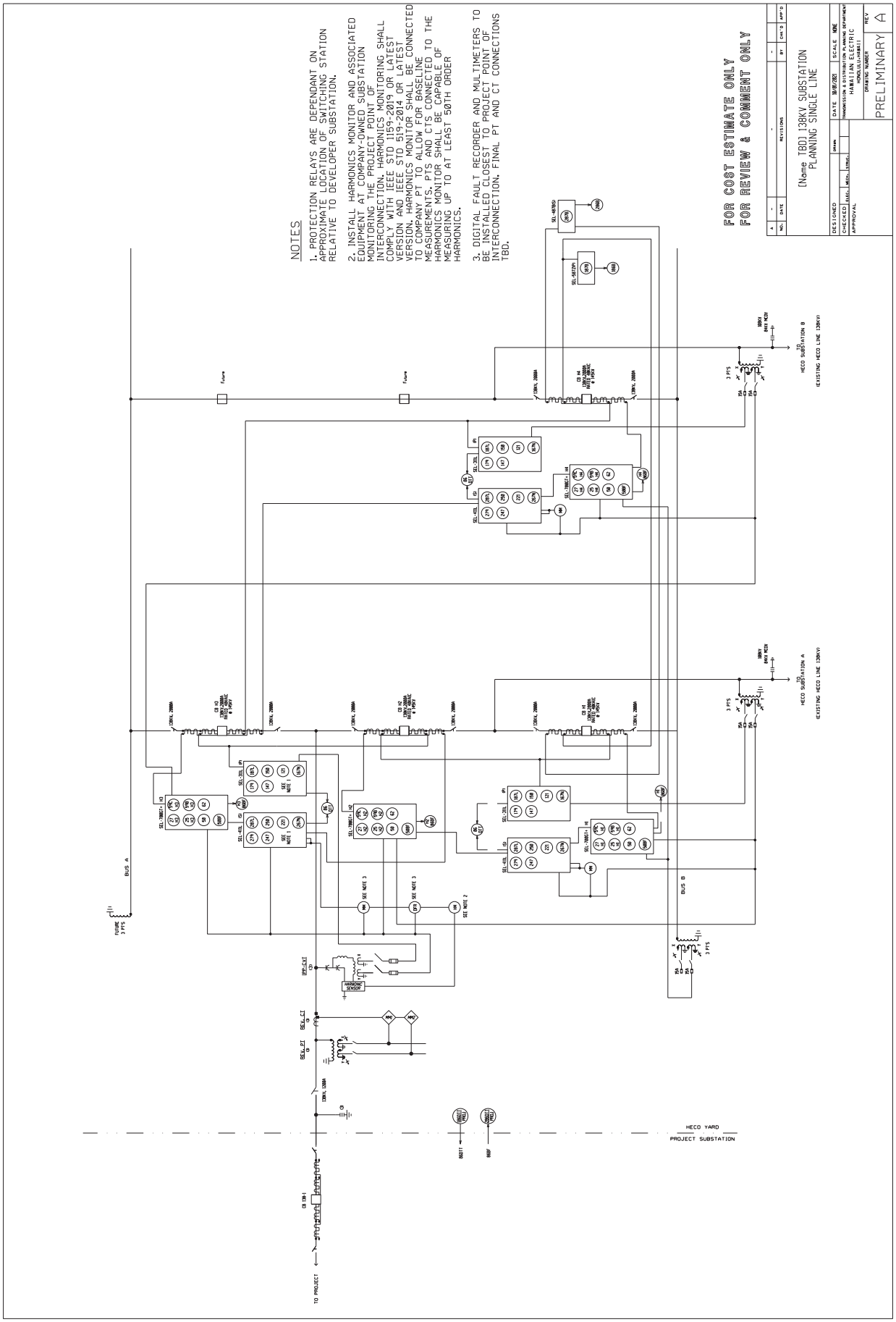
c. MW setpoint of each inverter/WTG

d. MVAR output of each inverter/WTG

e. MVAR setpoint of each inverter/WTG

f. [Solar Projects] Global Horizontal Irradiance (Watts/m2)

g. [Solar Projects] Back of panel temperature (Celsius)


NOTES
1. PROTECTION RELAYS ARE DEPENDANT ON APPROXIMATE LOCATION OF SWITCHING STATION RELATIVE TO DEVELOPER SUBSTATION.
2. INSTALL HARMONICS MONITOR AND ASSOCIATED EQUIPMENT AT COMPANY-OWNED SUBSTATION MONITORING THE PROJECT POINT OF INTERCONNECTION. HARMONICS MONITORING SHALL COMPLY WITH IEEE STD 1159-2019 OR LATEST VERSION AND IEEE STD 519-2014 OR LATEST VERSION. HARMONICS MONITOR SHALL BE CONNECTED TO COMPANY PT TO ALLOW FOR BASELINE MEASUREMENTS. PTS AND CTS CONNECTED TO THE HARMONICS MONITOR SHALL BE CAPABLE OF MEASURING UP TO AT LEAST 50TH ORDER HARMONICS.
3. DIGITAL FAULT RECORDER AND MULTIMETERS TO BE INSTALLED CLOSEST TO PROJECT POINT OF INTERCONNECTION. FINAL PT AND CT CONNECTIONS TBD.
FOR COST ESTIMATE ONLY
FOR REVIEW & COMMENT ONLY
[Name TBD] 138KV SUBSTATION
PLANNING SINGLE LINE
DESIGNED
CHECKED
APPROVAL
DRAWN
DATE 10/01/2021
SCALE NONE
TRANSMISSION & DISTRIBUTION PLANNING DEPARTMENT
HAWAIIAN ELECTRIC
DRAWING NUMBER
REV
PRELIMINARY
A
HECO YARD
PROJECT SUBSTATION
BUS A
BUS B
TO PROJECT
EXISTING HECO LINE 138KV
HECO SUBSTATION A
HECO SUBSTATION B
FUTURE 3 PTS
3 PTS
SEE NOTE 1
SEE NOTE 2
SEE NOTE 3
HARMONIC SENSOR

Notes to be added to the 138kV HECO Substation Single Line Diagram

HECO SUBSTATION:	TBD
HECO SLD REVISION NUMBER AND DATE:	TBD
NOTES DATE	

Transmission Planning Notes

138kV bus equipment and breakers shal be rated 2000A continuous, and shall be designed to withstand a short circuit current of 40 KAIC @ 145kV.

2. Al 138kV Gas Circuit Breakers (GCB), disconnect switches, station post insulators, and instrument transformers are to be designed for 650kV BIL.

3. 138kV breaker H1 to be 1PH synchro-checked across its 138kV Bus B (3-PH) and line potentials (3-PH) and al owed to close only under the fol owing conditions:
   A. Automatic Reclosing:
      i. [TBD by IRS]
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase
      ii. Dead-line and dead-bus
      iii. Dead-line and hot-bus
      iv. Hot-line and dead-bus

4. 138kV breaker H2 to be 3PH synchro-checked across its line potentials (3-PH) on both sides of the 138kV breaker and al owed to close only under the fol owing conditions:
   A. No Automatic Reclosing
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase
      ii. Three-phase dead-line and three-phase dead-line
      iii. Three-phase dead-line and three-phase hot-line
      iv. Three-phase hot-line and three-phase dead-line

5. 138kV breaker H3 to be 3PH synchro-checked across its line potentials (3-PH) on both sides of the 138kV breaker and al owed to close only under the fol owing conditions:
   A. No Automatic Reclosing
   B. Manual and Supy Closing:
      i. Voltages equal in magnitude and phase
      ii. Three-phase dead-line and three-phase dead-line
      iii. Three-phase dead-line and three-phase hot-line
      iv. Three-phase hot-line and three-phase dead-line

6. 138kV breaker H4 to be 1PH synchro-checked across its 138kV Bus B (3-PH) and line potentials (3-PH) and al owed to close only under the fol owing conditions:
   A. Automatic Reclosing
      i. [TBD by IRS]

B. Manual and Supy Closing:
   i. Voltages equal in magnitude and phase
   ii. Dead-line and dead-bus
   iii. Dead-line and hot-bus
   iv. Hot-line and dead-bus

7. Al trips from developer to HECO shal trip and block close breakers H2 and H3.

8. Substation to be built as functional ring bus in formation of breaker-and-half as shown on Planning SLD. Space should be left for two additional breakers to be installed to complete the second breaker-and-half bay.

9. Instal a harmonics recorder and associated equipment at each project point of interconnection, which wil be in continuous service and on a rol ing window basis monitor sub-cycle voltage and currents and capable of remote interrogation. Harmonics monitoring shall comply with IEEE Std 1159-2019 or latest version and IEEE Std 519-2014 or latest version. Harmonics monitor shall be connected to company-side PT to al ow for baseline measurements PTs and CTs connected to the harmonics monitor shal be capable of measuring up to at least 50th order harmonics. The following inputs shal be provided:

   a. 138kV voltage (3-ph) at or near the point of interconnection for Project
   b. 138kV current (3-ph) at or near the point of interconnection measuring total current from Project

0. Opening of 138kV breakers H2 and H3 shal trip HECO lockout relay which will trip and block close Developer's 138kV breaker 138-1 via separate dedicated lockout relay owned by the Developer.

Protection Notes

Bus B differential relays operation shal trip and block close breakers H1 and H4 via manual lockout relays.

2. Developer line differential relay operation shal trip and block close breakers H2, H3, and HECO lockout relay. Developer breaker 138-1 tripped and blocked closed via separate dedicated lockout relay owned by the developer.

3. The local breaker failure scheme shal trip and block close all adjacent breakers via manual lockout relays.

4. Breaker failure of 138kV breakers H2 or H3 shal trip HECO lockout relay which will trip and block close Developer's 138kV breaker 138-1 via separate dedicated lockout relays owned by the Developer.

5. Breaker failure of Developer's 138kV breaker 138-1 shal trip developer-owned dedicated lockout relay which wil trip dedicated lockout relay in HECO substation. Dedicated lockout relay in HECO substation wil trip and block close breakers H2 and H3.

16. The fol owing local 138kV breaker failure conditions shal initiate a direct transfer trip (DTT) to trip and block close the respective 138kV breakers at the remote substation via a dedicated remotely resettable lockout relay at the remote substation:

System Operations Notes

7. Al 138kV breakers are control ed and supervised by load dispatch via supervisory equipment and have control switches in the control equipment enclosure.

8. Instal a digital fault recorder near point of interconnection, which will be in continuous service and on a rol ing window basis monitor sub-cycle voltage, currents, as well as disturbance events and capable of remote interrogation fol owing an event. The fol owing inputs shall be provided and direct hard wired to the recorder:

    a. Status of al [*Project*] (Developer) 138kV breakers
    b. Status of al Developer's 35kV breakers
    c. Status of al lockouts for Developer's breakers
    d. 38kV voltage (3-ph) at point of interconnection
    e. 138kV current (3-ph) at point of interconnection measuring total current from [*Project*] project
    f. 38kV line fault distance (miles)

9. Each of the fol owing control and status points for CBXXX & XXX (*reakers to Project*), the associated transmission and equipment shal be remotely control ed and supervised by HECO load dispatcher:

    a. Trip/Close and status of al 138kV breakers
    b. tatus and control of each remotely resettable lockout
    c. tatus of each manual-reset lockout

20. Each of the fol owing analog points for CBXXX & XXX (*reakers to Project*), the associated transmission and equipment shal be telemetered to HECO load dispatcher:

    a. Al 138kV line amps (3 phase), watts, and vars
    b. Al 138kV bus and line voltages (3 phase)
    c. kWh and kVARh values via Revenue Meter "A"

    (Note, meters and transducers for a-c shall be HECO owned, main ined, and operated.)

21. For CB XXX, XXX (*reakers to Project*), the associated transmission line and equipment, each of the fol owing initiates an alarm to HECO load dispatcher:

    a. DTT for CB XXX & XXX (*reakers to Project*)
    b. Loss of 138kV line and synchro-check potential
    c. GCB low SF6 gas pressure (individual alarm for each GCB)
    d. GCB Block operation SF6 gas (which indicates SF6 low-low gas pressure) for each GCB
    e. 138kV GCB spring discharge alarm (individual alarm for each GCB)
    f. Each 138kV lockout relay (86) operation
    g. Each 138kV digital protective relay trouble alarm
    h. Loss of 138kV line relay primary & backup potential
    i. Loss of DC for each lockout relay (86)

j. Comm Trouble

Design Notes

22. Al 138kV CT's are to be MRCT's with relaying accuracy class C800 unless noted otherwise. MRCT's are to have ful distributed windings on al taps and a minimum thermal rating factor of 2.0. (Provide the Protection Department with CT saturation, ratio correction factor curves, and continuous thermal rating factors.)

23. Al microprocessor relays, instruments, CT's, and PT's are to have test switches.

24. Al trips going to developer sub shal go through dedicated HECO lockout relays. HECO lockout relays wil be owned by HECO, SCADA resettable, and shal trip a dedicated lockout relay in developer substation. Al trips from developer to HECO shal go through a dedicated developer owned lockout relay and trip a dedicated lockout relay in HECO substation.

Notes to be added to the 138kV PV/BESS Project Single Line Diagram

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
CUSTOMER SLD EVISION NUMBER AND DATE:	
HECO SLD EVISION NUMBER AND DATE:	
CO SUBSTATION:	
CO 138KV CIRCUIT:	
CO 138KV CIRCUIT BREAKER #:	

Planning Notes

1. The Project shall install point-on-wave breakers. The voltage deviation at the point of interconnection (POI) must be limited to +/- X% when energizing the Project. [TBD by IRS]
2. All trips from developer to HECO shall trip and block close breakers H2 and H3.
3. Opening of HECO 138kV breakers H2 and H3 at [Name TBD] Substation shall trip a HECO lockout relay which will trip and block close Project 138kV breaker 138 1 via separate dedicated lockout relays owned by the Developer.

. Customer to ensure manual closing of breaker 138-1 shall be allowed only for hot line and dead bus (project-side) [TBD by IRS]. There shall be no auto-reclosing on Project 138kV breaker 138-1.

Protection Notes

5. Breaker failure of HECO 138kV breaker H2 or H3 at [Name TBD] Substation shall trip a HECO lockout relay which will trip and block close Project 138kV breaker 138 1 via separate dedicated lockout relay.
6. Breaker failure of Project 138kV breaker 138-1 shall trip developer-owned dedicated lockout relay which will trip dedicated lockout relay in HECO substation. Dedicated lockout relay in HECO substation will trip and block close HECO 138kV breakers H2 and H3.

System Operations Notes

7. HECO load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0 interface:
    a. Maximum Power Import Limit, Maximum Power Export Limit, and Power Reference Limit (dispatch) set point control signals. Customer is not allowed to override HECO's control; and
    b. Line to line Voltage (analog kV) set point control signal;
    c. Inverter Enable / Disable control signal;
    d. Isochronous Mode Enable / Disable control signal.
8. All control values must be retained in non-volatile memory such that they will be restored immediately upon return from a systems restart, power outage, loss of communication, etc.
9. The following signals provided by the Customer shall be telemetered to HECO load dispatch office:
    a. Status of Customer's 138kV breaker 138-1 (HECO# XXXX);

b. Status of Customer's collector and BESS circuit breakers.

c. Status of remotely-resettable lockouts;

d. 138kV line amps (3 phase), 138kV voltage (3 phase L-N), frequency, NET MW, NET MVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;

e. PV MW and MVAR output;

. BESS MW and MVAR output/charge, if applicable;

g. Received KWh accumulator, sent KWh accumulator, received KVARh accumulator, Sent KVARh accumulator.

h. Status Indicating when Maximum Power Limit is in effect;

i. Latest received Maximum Power Import Limit, Maximum Power Export Limit, and Power Reference Limit Setpoints;

j. EMS Control Status indicating who has control over dispatch and voltage (Local vs HECO);

k. Voltage Regulation Status – Normal or Alarm (regular On or Of)

l. Frequency Response Status – Normal or Alarm (On or Off);

m. Latest received voltage set point;

n. Wind speed in Miles per Hour and direction;

o. Barometric Pressure;

p. Temperature in Celsius;

q. Solar Irradiance in Watts/m2;

r. umidity in Percent;

s. KW output for each inverter;

t. KVAR output for each inverter;

u. KW setpoint for each inverter;

v. Status for each inverter (by DNP status);

w. Number of inverters available;

x. Grid Forming or Grid Following mode;

y. Ramp Rate;

z. Ramp Rate Limit Up;

aa. Ramp Rate Limit Down;

bb. Plant Power Possible (MW);

cc. Frequency Droop percent and deadband settings;

dd. BESS State of Charge (%);

ee. BESS Energy remaining (MWH);

. Global Horizontal Irradiance on same axis as array (Watts/m2);

gg. Plane of Array Irradiance on same axis as array (Watts/m2);

hh. Back of Panel temperature at array height (Celsius);

ii. Inverter Enable / Disable feedback Status;

j. Isochronous Model Enable / Disable Status;

10. The following occurrences shall initiate separate alarm to H CO load dispatch office.
    a. DTT and RTU Loss of Communication;
    b. 48VDC and/or 125VDC Charger Trouble. Specific alarms to be determined by HECO at a later date;
    c. Trouble alarm for loss of VDC source(s); and
    d. Operation of HECO-owned SCADA re-settable lockout relays;
    e. Violation of Maximum Ramp Rate Upward (Performance Standard); and
    . Violation of Maximum Ramp Rate Downward (Performance Standard).
11. HECO requires 24 hour access to HECO-owned SCADA/RTU, communication, and HECO-owned relaying and monitoring equipment.
12. HECO shall own a high-speed power quality device (i.e., Tesla Model No. 4000) near the point of interconnection, which shall be in continuous service and on a rolling window basis, monitoring sub-cycle voltages and currents, as well as disturbance events, and capable of remote interrogation following an event. HECO requires 24 hour access to this equipment. Customer to provide the ollowing hard wired inputs to HECO's power quality device:
    a. Status of Customer's 138kV breaker 138-1 (HECO# XXXX);
    b. Status of remotely-resettable lockouts;
    c. 138kV line amps (3 phase); and
    d. 138kV line-to-neutral voltage (3 phase).

Design Notes

13. All trips going to developer sub shall go through dedicated CO lockout relays. HECO lockout relays will be owned by HECO, SCADA resettable, and shall trip a dedicated lockout relay in developer substation. All trips from developer to HECO shall go through a dedicated developer owned lockout relay and trip a dedicated lockout relay in HECO substation.
14. The Project will submit design drawings to H CO for review and comment.
15. All 138kV CT's are to be 2000/5 MRCT's with relaying accuracy class C800 unless noted otherwise. MRCT's are to have full distributed windings on all taps and a minimum thermal rating factor of 2.0

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix I – (Reserved)

Hawaiian Electric

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix J – Rule 29 Tariff

[NOTE: Please refer to Exhibits 2, 3, and 4 of the February 23, 2022 filing for the proposed Hawaiian Electric, Hawai‘i Electric Light, and Maui Electric Rule No. 29 CBRE Phase 2, respectively.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

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COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

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FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix K – Model Mid-Tier Standard Form Contract

[NOTE: Please refer to Exhibit 7 of the February 23, 2022 filing for the Draft Mid-Tier Standard Form Contract for Renewable Dispatchable Generation.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix K-1 – Project Specific Addendum for the Mid-Tier Standard Form Contract (O‘ahu)

[NOTE: Please refer to Exhibit 7 of the February 23, 2022 filing for the Draft Mid-Tier Standard Form Contract for Renewable Dispatchable Generation, which includes this addendum.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

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O‘AHU, MAUI AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix K-2 – Project Specific Addendum for the Mid-Tier Standard Form Contract (Maui and Hawai‘i Island)

[NOTE: Please refer to Exhibit 7 of the February 23, 2022 filing for the Draft Mid-Tier Standard Form Contract for Renewable Dispatchable Generation, which includes this addendum.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI, AND HAWAI‘I ISLAND

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Docket No. 2015-0389

Appendix K-3 – (Reserved)

Hawaiian Electric

DRAFT

REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI AND HAWAI‘I ISLAND

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Docket No. 2015-0389

Appendix K-4 – (Reserved)

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

FOR

LOW- AND MODERATE-INCOME SUBSCRIBERS

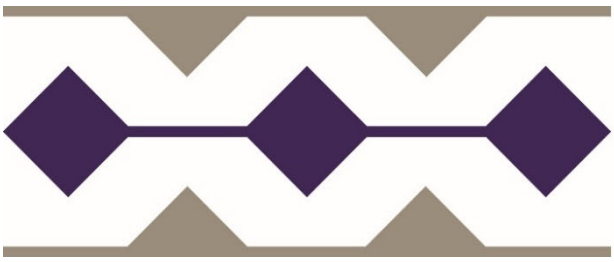
O‘AHU, MAUI AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix K-5 – Attachment DCC to the Project Specific Addendum for Mid-Tier Standard Form Contract: DC Coupled Storage

[NOTE: Please refer to Exhibit 7 of the February 23, 2022 filing for the Draft Mid-Tier Standard Form Contract for Renewable Dispatchable Generation, which includes this attachment.]



Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

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LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI AND HAWAI‘I ISLAND

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Appendix L – Model Large RDG PPA

[NOTE: Please refer to Exhibit 8 of the February 23, 2022 filing for the Draft Power Purchase Agreement for Renewable Dispatchable Generation.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

FOR

COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

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O‘AHU, MAUI AND HAWAI‘I ISLAND

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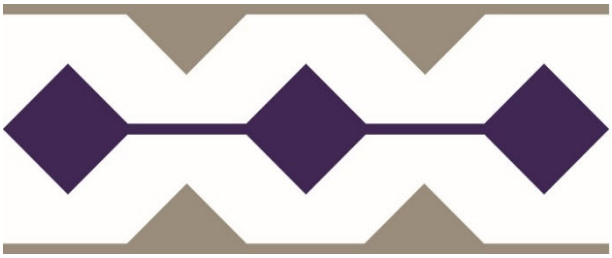
Appendix L-1 – Project Specific Addendum for the RDG PPA (O‘ahu)

[NOTE: Please refer to Exhibit 8 of the February 23, 2022 filing for the Draft Power Purchase Agreement For Renewable Dispatchable Generation, which includes this addendum.]



Hawaiian Electric

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REQUEST FOR PROPOSALS

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COMMUNITY-BASED RENEWABLE ENERGY PROJECTS

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LOW- AND MODERATE-INCOME SUBSCRIBERS

O‘AHU, MAUI AND HAWAI‘I ISLAND

FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix L-2 – Project Specific Addendum for the RDG PPA (Maui and Hawai‘i Island)

[NOTE: Please refer to Exhibit 8 of the February 23, 2022 filing for the Draft Power Purchase Agreement for Renewable Dispatchable Generation, which includes this addendum.]

Hawaiian Electric

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REQUEST FOR PROPOSALS

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FEBRUARY 23, 2022

Docket No. 2015-0389

Appendix L-3 – (Reserved)

Hawaiian Electric

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REQUEST FOR PROPOSALS

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Docket No. 2015-0389

Appendix L-4 – Attachment DCC to the Project Specific Addendum for RDG PPA: DC Coupled Storage

[NOTE: Please refer to Exhibit 8 of the February 23, 2022 filing for the Draft Power Purchase Agreement for Renewable Dispatchable Generation, which includes this attachment.]

Hawaiian Electric