BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Application of **HAWAII ELECTRIC LIGHT COMPANY, INC.** **To Institute a Proceeding Relating to Competitive Procurement to Acquire a Batter Energy Storage System in North Kohala**	**DOCKET NO. 2022-0012**

Hawaiian Electric Companies'
Proposed Final North Kohala Energy Storage RFP
BOOK 1 OF 2

Filed February 28, 2023

February 28, 2023

The Honorable Chair and Members
of the Hawai‘i Public Utilities Commission
Kekuanao‘a Building, First Floor
465 South King Street
Honolulu, Hawai‘i 96813

Dear Commissioners:

Subject: Docket No. 2022-0012
Competitive Bidding Process to Acquire Energy Storage
Development of North Kohala Energy Storage RFP
Proposed Final North Kohala Energy Storage RFP

The Hawai‘i Electric Light Company[1] respectfully submits a proposed final version of the North Kohala Energy Storage Request for Proposals for Hawai‘i Island ("North Kohala Energy Storage RFP") and supporting documentation in accordance with Order 38855.[2]

The Company submits the following exhibits with this transmittal:

Exhibit 1: Proposed Final Changes and Clarifications to North Kohala Energy Storage RFP Addressing Order 38855;

Exhibit 2: Proposed Final Timelines for the North Kohala Energy Storage RFP;

Exhibit 3: Hawaiian Electric Companies' Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for the North Kohala Energy Storage RFP ("Competitive Bidding Code of Conduct");

Exhibit 4: Proposed Final North Kohala Energy Storage RFP (see Exhibit 4A for a redline version);

Exhibit 5: Proposed Final Model Energy Storage Services Agreement ("ESSA") (see Exhibit 5A for a redline version);

Exhibit 1 describes the Company's revisions to North Kohala Energy Storage RFP based on the feedback received in Order 38855. Assuming no further guidance is set by the Commission, the North Kohala Energy Storage RFP and proposed model ESSA will be released to the public and made

[1] Hawai‘i Electric Light Company, Inc. ("Hawai‘i Electric Light") is also referred to herein as "Company".
[2] Order No. 38855, Approving Hawaii Electric Light Company Inc.'s Proposed Draft Request for Proposals for Energy Storage for North Kohala, Hawai‘i Island, with Modifications, issued on February 13, 2022

available on Hawaiian Electric’s website at https://www.hawaiianelectric.com/NorthKohalaEnergyStorageRFP on March 24, 2023.

The Company looks forward to working with the Commission and the Independent Observer to launch and execute a competitive and successful procurement.

Sincerely,

/s/ Rebecca Dayhuff Matsushima

Rebecca Dayhuff Matsushima
Vice President
Renewable Acquisition

Attachments

cc: Division of Consumer Advocacy

EXHIBIT 1

Proposed Final Changes and Clarifications to North Kohala Energy Storage RFP

Exhibit 1

Proposed Final Changes and Clarifications to the North Kohala Energy Storage Request for Proposals Addressing Order 38855

Described below, are Hawai'i Electric Light's[1] proposed final changes and clarifications to the North Kohala Energy Storage Request for Proposals and supporting documentation in accordance with Order 38855.[2]

I. Order 38855

Upon reviewing the draft North Kohala Energy Storage RFP filed on January 13, 2023, as well as the Company's responses to the Commission's information request, and in consultation with the Independent Observer, the Commission issued Order No. 38855 on February 13, 2023, approving with modifications and clarifications, the Company's revised RFP and directed the Company to file a final North Kohala Energy Storage RFP by February 28, 2023. Order 38855 also stated that the final North Kohala Energy Storage RFP shall be considered approved for issuance automatically on March 24, 2023, unless the Commission orders otherwise.

This Exhibit 1 identifies the changes that were incorporated into the proposed final North Kohala Energy Storage RFP and provides requested clarifications, related to the RFP and the updated BESS sizing restudy filed on December 30, 2022 ("Updated Restudy"), consistent with Order 38855.

II. BESS Sizing Restudy Clarifications

In Order 38855, the Commission requested clarification regarding "the prescriptiveness of the BESS sizing for bids in light of certain provisions in the RFP and assumptions used in the Updated Restudy" and "whether bidders are restricted to a six-hour duration battery, or whether 'overbuilding' could entail a longer duration battery at an appropriate size to meet the performance standards required in the ESSA". Order 38855 at 14-15.

The Company appreciates the Commission's review of the Updated Restudy and the finding that the modification of a 5 MW/22 MWh BESS to a 5 MW/30 MWh BESS is reasonable. The Company clarifies that the intent of the ESSA is for the bidder to meet, at a minimum, the 5 MW/30 MWh requirement for the 10-year term of the ESSA. Assuming there will be some level of degradation over the course of such 10-year term, bidders are free to choose their method of meeting this requirement (e.g., by overbuilding (i.e., providing a longer duration and/or larger battery) or by augmenting (i.e., adding duration and/or more batteries during the term) as needed). If a proposer chooses to overbuild, the dispatch would be limited to 5 MW/30 MWh.

The Commission additionally requested clarification as to "whether bidders are expected to maintain the minimum RTE assumed in the Updated Restudy to comply with the scope of the RFP

[1] Hawai'i Electric Light Company, Inc. ("Hawai'i Electric Light") is also referred to herein as a "Company".
[2] Order No. 38855, Approving Hawaii Electric Light Company Inc.'s Proposed Draft Request for Proposals for Energy Storage for North Kohala, Hawai'i Island, with Modifications, issued on February 13, 2022 in the subject proceeding ("Order 38855").

or if meeting the Performance Level RTE will satisfy the bidder's eligibility requirements." Order 38855 at 15. The Company confirms that bidders are expected to meet at least the 85% Performance Level RTE stated in the ESSA.

III. Final Changes and Clarifications to the North Kohala Energy Storage RFP

The Company appreciates the Commission's review and approval, with modifications, of the revised North Kohala RFP which included various modifications made to align with the Stage 3 RFPs and other clarifications and modifications proposed by the Company related to the RFP timeline and Project GCOD, Site Visits, and the Fatal Flaw Analysis. The Company also notes the Commission's instruction with respect to the Previous Performance scoring criterion and confirms that the Company shall, "with confirmation from the IO, . . . avoid penalizing bidders for negative past performance that was beyond their reasonable control" in the application of this evaluation criterion. Order 38855 at 20.

The Company further acknowledges the Commission's emphasis in Order 38855 that, although the BESS will be a product of this RFP, the combined Microgrid-controller-with-BESS project will be subject to the Commission's review and that "the wires and non-wires alternative will be evaluated, taking into consideration all costs as well as the system and customer benefits resulting from each alterative, regardless of the intended targeted need". Order 38855 at 10.

The Company provides following clarifications and modifications made to the proposed final RFP in accordance with the directives of Order 38855:

A. Criteria Scoring

The Commission directed the Company to modify the criteria scoring to reflect an even split between the Price and Non-Price scoring criteria, stating that the RFP's stringent threshold criteria sufficiently addresses the Company's concerns regarding the critical importance of a project's demonstrated technical ability to provide the necessary services and that, further, an even ratio would provide "additional incentive to keep their bid prices reasonable and more accurately reflect the importance of the cost of the BESS on the aggregated cost of, and ultimately the Company's ability to move forward with, the Microgrid + BESS Project". Order 38855 at 25-26.

Accordingly, the Company has revised references related to the scoring ratio within Section 4.4 (Evaluation of the Price and Non-Price Analysis) of the RFP, including the point totals and scoring examples provided in Section 4.4.1 (Evaluation of Price Related Criteria) and Section 4.4.2.3 (Non-Price Scoring), and Section 4.5 (Selection of the Final Award Group).

B. Community Engagement Website

Given the combined nature of the North Kohala Microgrid project, the Commission requested clarification as to the necessity of a separate website for the BESS portion of the project and inquired about further detail on how such a website would be managed in relation to the Microgrid controller project and the overall project. Order 38855 at 27.

The Company concurs with the Commission's assessment that a BESS-only website would

be unnecessary given the specifics of this project and has revised Section 5.3.1 (Community Outreach and Engagement/Cultural Resource Impacts) of the RFP, removing the requirement for the Proposer to provide a Project website within 1 business day after notification of selection to the Final Award Group. Related changes were also made in Section 2.8 (Website Information) of Appendix B and Section 27.17 (Community Outreach Plan) of the ESSA.

The Company has instead requested that the selected Proposer provide specific Project information, as detailed in Section 2.8 (Website Information) of Appendix B within 5 business days of notification of selection. The Company will then post this information on the existing North Kohala Microgrid page on the Company's website. This page provides up-to-date information on the Microgrid + BESS project and will continue to be updated with information about the status of the combined project. Accordingly, the Company has revised the timeframe for the Company's public announcement of the Final Award Group from five business days to no more than seven business days, after notification is given to the selected Proposer, as the Company will require time to post the information on the Company's website and ensure that it is available to the public at the time of announcement.

C. Exceeding the Estimated Cost of Wires Alternative

The Commission directed the Company to elaborate on its plan to compare the aggregated cost for the Microgrid + BESS project to the estimated cost of the traditional wires alternative, providing greater specificity as to "at what point this determination will be made, e.g., prior to any Final Award being made, and more clearly delineate the specific ramifications to potential bidders, should the bids indicate the Microgrid + BESS Project costs will exceed the cost of the wires alternative". Order 38855 at 29.

The Company previously noted in its response to subpart c. of PUC-HELCO-IR-06 filed on June 6, 2022 (which was subsequently cited in the Company's response to subpart c. of PUC-HELCO-IR-35 filed on September 26, 2022) that "[s]hould the evaluation fail to yield economical projects, the Company will need to re-assess next steps, including whether to make adjustments to the non-wires alternative or pursuing a wires solution, as the current project plan was developed with community outreach and feedback".[3]

To clarify the process discussed in the Company's response to PUC-HELCO-IR-06 and PUC-HELCO-IR-35, all bids would be evaluated for their economic viability as compared to the wires alternative as part of the first step in the evaluation process. In the Eligibility Requirement Assessment, set forth in Section 4.2 (Eligibility Requirements) of the RFP, all Proposals will be evaluated to determine if the aggregated cost of the bid price of the Proposal and estimated cost of the Company's microgrid project exceeds the estimated value of a traditional second wires path solution. In this comparison, the aggregated cost will be compared with the estimated value of a traditional second wires path solution. This estimated value is intended to be used as an order of magnitude financial estimate of the non-wires alternative opportunity. The estimated value is based on the current planning level estimate for the traditional second wires path solution.

[3] HELCO response to PUC-IR-06c.

If, however, none of the bids received meet this eligibility requirement,[4] the RFP would be canceled in accordance with the conditions of Section 1.12 (Modification or Cancellation of the Solicitation Process) of the RFP and the Company would conduct a re-assessment as discussed in response to PUC-HELCO-IR-06. As illustrated in Figure 1 in Section 4.1 (Proposal Evaluation and Selection Process) of the RFP, such determination would be made prior to the selection of the Final Award Group as any Proposal that does not meet all Eligibility Requirements will be eliminated from the evaluation for non-conformance and would not move on to the Threshold Requirement Assessment.

D. Redlined Changes and References

a. Typical Duration of Construction of Company-Owned Interconnection Facilities

As indicated by the redlined RFP filed on January 13, 2023, the typical duration for the construction of Company-Owned Interconnection Facilities was updated from "9-12 months" to "12-18 months" in Section 3 of Appendix H. Order 38855 at 29. The Commission requested clarification regarding the reason for this change, and the Company provides that more time was added to the construction schedule due to uncertainties with securing construction resources. Parts or all the construction will have to be contracted and the number of available Hawai'i-licensed contractors qualified to perform work on Hawai'i Island is limited. Further, concrete is one of the materials that the contractor will be responsible for providing in their scope of work and, depending on what other construction projects are occurring on Hawai'i Island at the time of construction, there could be delays in obtaining concrete.[5] For these reasons, the Company believed it prudent to adjust the duration for construction of the Company-Owned Interconnection Facilities to 12-18 months.

b. Corrected References

The Company has reviewed all Exhibits and revised erroneous references related to the use of the term "PPA", including the Commission's noted example in Section 2.1 (Performance Standards) at page 18 of the revised draft North Kohala Energy Storage RFP. Order 38855 at 15. Such references have been changed to ESSA, agreement, or contract, as appropriate.

Further, the Company also corrected the labeling of Appendix B, Attachment 3 as requested by the Commission and reviewed all Exhibits provided in this filing for similar issues in order to better aid Proposers in cross-referencing materials.

E. Updates to Incorporate IEEE 2800-2022

In Section 2.1 (Performance Standards) of the revised draft North Kohala Energy Storage

[4] As discussed in Section 4.1 (Proposal Evaluation and Selection Process), 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 will be eliminated based on failure to meet either Eligibility or Threshold Requirements.

[5] "So far, in 2022, the construction market has continued to be impacted by inflation and supply chain issues. There have been significant cost increases in materials and lead times for materials." Construction Industry Outlook 2022. *Honolulu Business Magazine*, September 15, 2022; Also, "Contractors across the U.S. have recently expressed concern about completing prospective construction projects due to a nationwide concrete shortage." Smith, Gemma. "Dwindling Concrete Supply Worries U.S. Contractors as Projects Pile Up." Levelset, November 9, 2022, https://www.levelset.com/news/dwindling-concrete-supply-worries-contractors/.

RFP, the Company added language referencing the Institute of Electrical Electronics Engineers Standard for Interconnection and Interoperability of Inverter-Based Resources ("IEEE 2800-2022"), stating that "inverters being procured in this RFP may need to conform to certain functions of IEEE 2800-2022 as identified in [studies] completed within this RFP, or in the future operations of the project. The interconnection study will incorporate IEEE 2800 to the extent applicable to our island systems."

In Order 38855, the Commission requested further details on five enumerated items regarding this new requirement. The items and the Company's responses are as follows:

1. A detailed description of the known incremental changes and/or benefits of procuring IEEE 2800-2022 compliant resources in the North Kohala BESS RFP.

As discussed in the Company's letter filed in Docket No. 2017-0352 on February 10, 2023, IEEE 2800-2022 is a comprehensive and detailed standard defining minimum capabilities for inverter-based resources ("IBR"), developed through the collaboration of the electric power industry at a time when standardizing the performance of IBR is so critical as it will become a dominant resource of the bulk power system ("BPS"). Given the ESSA as originally drafted had many of the same Performance Standards as those incorporated in the Stage 3 Project Specific Addendum for Standalone Storage Projects Located on Maui or Hawai'i Island ("Stage 3 HI/Maui BESS PSA"), in the Company's detailed review of the standard for the Stage 3 RFP redlines, all the redlines made in the Stage 3 HI/Maui BESS PSA were transferred to the North Kohala ESSA, while retaining the Performance Standards specific to the microgrid islanding capabilities. These changes are summarized in Attachment A to this Exhibit. The requirements for the microgrid islanded operations are expected to be greater than the incorporated IEEE 2800-2022 references, and provisions were retained to capture these increased requirements. Detailed study of the microgrid configurations will establish the required operating parameters for the microgrid islanded operations.

To the extent that the Company is able to complete a detailed review of further standards in the future and would like to have additional provisions enforced, during ESSA negotiations, the Company would ask developers if they are willing to voluntarily agree to any of these additional standards as described further in Item 5, below.

There are no changes proposed to the body of the RFP or the evaluation process of proposals that are received in response to this RFP. All proposed changes are contained to the ESSA, specifically in Attachment B.

2. A detailed explanation on whether HELCO can formally adopt IEEE 2800, in full or in part, and, if so, identification of those aspects of the standard that are established, as well as those that have yet to be established, that may be adopted at a later date. The Company should also describe whether there are any new aspects that may emerge in the future, and how the ESSA would potentially address these three categories of IEEE 2800 aspects.

IEEE 2800-2022 is a design capability standard. Instead of wholesale adoption, the Company's approach is to incorporate IEEE 2800-2022 capabilities into specific Company

operational performance requirements. As noted in the response to Item 1, Hawai‘i Electric Light, in its detailed review of the standard for Stage 3 RFP redlines, found it prudent to transfer all the redlines made in the Stage 3 HI/Maui BESS PSA to the North Kohala ESSA, while retaining the Performance Standards specific to the Microgrid services. The Company expects the microgrid islanding requirements to demand a higher level of performance than the adopted sections of the standard. As noted in the February 10 letter, the Company does not expect to pursue future certification and will continue to rely on modeling, contract terms, testing, and field performance to verify performance.

3. An explanation as to why the Company waited until now to address this standard, which was published in April 2022.

Since the release of IEEE 2800-2022, there has been increasing understanding and awareness, both industry-wide and within the Company, of the critical importance in adopting the minimum requirements identified in the standard. Adopting IEEE 2800-2022 now is critically important to ensure the latest standards for performance are incorporated into projects that will contribute significant grid functionality and stability to the Company's grid for the next 10 years.

The Company performed an initial high-level review of IEEE 2800-2022 in preparation of the Hawai‘i Island Stage 3 RFP and a more extensive review in preparation for the O‘ahu and Maui Stage 3 RFPs. The IEEE 2800-2022 standards are long, detailed, and complex. Adopting the standard without a detailed review may have unintended consequences as the Company also has existing PPA/ESSA performance requirements developed over the course of years of industry experience, and may be in conflict with certain provisions of the IEEE 2800-2022 standard. Just reading the standard and fully adopting the standard is not enough. The Company's grid is an island grid with its own unique challenges and the standard was written with a more traditional non-island grid in mind; in particular, the Company has adopted elements of this standard and also requires grid-forming technology for transmission-interconnected projects. This standard was primarily written to describe the functions of a grid-following inverter, which is an entirely different mode of operation. Therefore, careful evaluation takes time to complete. This was being done while completing studies and evaluations for other dockets including existing renewable projects and for the Company's Integrated Grid Planning docket. Note that while the Company has also been reviewing and updating the Stage 3 PSAs in parallel with the North Kohala ESSA, and while the similarities to the Stage 3 HI/Maui BESS PSA were identified, the changes are not exactly transferrable as the microgrid-specific services required of the North Kohala BESS are different than the BPS-connected Stage 3 RDG Projects given the much smaller size of the North Kohala microgrid and the complete dependence upon the microgrid's BESS and controller to operate the microgrid in a reliable and stable fashion within power quality requirements.

While the Company acknowledges these requirements were raised at an inconvenient time, the Company believes that incorporating specific IEEE 2800-2022 requirements into the North Kohala project at this time is necessary to allow the Company to leverage the full ability of the inverters for grid reliability and stability, which otherwise would require future mitigation measures and/or supplemental resources, to allow for stable and reliable operation and to avoid major disturbances. This may also benefit proposers in this RFP by using equipment designed for IEEE 2800-2022 capability and less reliance on completely custom configured inverter systems. IEEE 2800-2022 is the first comprehensive interconnection standard for utility scale IBR. By

incorporating IEEE 2800-2022 requirements, the Companies are closing gaps in its contracts that have come to light in their reviews and in the industry disturbance reports. While the Company's ESSA already contains many performance standards to ensure a safe and reliable operation of the grid, identifying technical and operational requirements for BPS-connected IBR is a new and developing area in the industry.

4. A description of what impact, if any, this change will this have on potential bidders.

The Company envisions that the incorporation of certain sections from IEEE 2800-2022 into the subject RFP at this time in the RFP process will have little, if any, impact on potential bidders. Since proposals in this RFP are not due until May 31, 2023 for IPP projects, proposers considering projects for this RFP have approximately three months from now until their respective proposal due dates to review the updated ESSA performance standards and incorporate such updates into project development.

With regard to equipment selection, as IEEE 2800-2022 is the new industry standard for IBR, the Companies envision that manufacturers will soon start developing equipment to this standard and that the equipment purchased for this Project would likely be able to comply with many of the provisions.

Additionally, IEEE 2800-2022 provides performance requirements for IBRs. It will be IEEE P2800.2 Recommended Practice for Test and Verification Procedures for Inverter-based Resources Interconnecting with Bulk Power Systems that will provide the testing and certification guidance to ensure equipment conformance to the standard, which is still in working group development.[6] In light of this, the Company is not requiring certification, but will continue to rely on modeling, contract terms, testing, and field performance to verify the minimum requirements defined, which provide many additional details and capabilities than are presently in the model contracts and are viewed as essential for systems to operate reliably with high levels of IBR. This is the same practice the Company currently follows to ensure projects meet the performance standards set forth in its contracts. Having the capabilities defined within the contract provides the flexibility to utilize these capabilities for reliable operation with changing resources over the ESSA term without requiring costly after-the-fact contractual changes or supplemental technologies.

5. An explanation as to how HELCO will consider preferences, if any, for IEEE 2800-compliant bidders.

At this time, as certain sections of IEEE 2800-2022 are now incorporated as part of the performance standards in the ESSA, all proposers submitting bids into this RFP will be expected to comply with at least these baseline requirements. Beyond these ESSA requirements, there will be no other evaluation of a proposal's compliance with IEEE 2800-2022 prior to selection of the Final Award Group. As described in Item 4 above, if the Company would like to have provisions beyond what is provided for in the ESSA already, during ESSA negotiations, the Company would ask the selected developer if it is willing to voluntarily agree to any of these additional standards. Even though the Company recognizes that they would not be able to unilaterally enforce provisions

[6] https://standards.ieee.org/ieee/2800.2/10616/

beyond those listed in the ESSA and which are approved by the Commission, Proposers are invited to specify in their Proposal their willingness to do so if the equipment they procure can meet such specifications. This will have no impact on a Project's evaluation scores and will only be revisited during ESSA negotiations following Project selection to the Final Award Group.

IV. Next Steps

The Company appreciates the Commission's consideration and looks forward to working with the Commission, Consumer Advocate, and the Independent Observer to launch and execute a competitive and successful procurement.

IEEE 2800-2022 Sections to be incorporated into the North Kohala ESSA

IEEE 2800-2022 Section	IEEE 2800-2022 Section Title	Incorporating in N. Kohala ESSA	New Capability?	Comments/Clarifications	North Kohala ESSA Section Reference
1	Overview	Yes		Was not originally in Exhibit A Table in Company's February 10th letter in Docket No. 2017-0352 , but was mentioned in the letter as an area we may consider for clarifying defined terms, which is how it is referenced in the new ESSA section.	New section added - Attachment B, Section 1(k) (Applicability of IEEE 2800-2022)
2	Normative references	Yes		Adopted in part with the section references that reference back to this section.	None
3	Definitions, acronyms, and abbreviations	Yes		Adopted in part with the section references that reference back to this section and through direct clarification of certain defined terms and how they are to be used in the contract references.	None
4	General interconnection technical specifications and performance requirements				
4.2	Reference points of applicability (RPA)	Yes		Was not included in Exhibit A Table in Company's February 10th letter in Docket No. 2017-0352, but was mentioned in the letter as an area we may consider for clarifying defined terms, which is how it is referenced in the new ESSA section. Defines RPA as POI in alignment with the historical intent of ESSA.	New subsection added - Attachment B, Section 1(k)(i) (Applicability of IEEE 2800-2022)
4.3	Applicable voltages and frequency	Yes		Was not included in Exhibit A Table in Company's February 10th letter in Docket No. 2017-0352, but was mentioned in the letter as an area we may consider for clarifying defined terms, which is how it is referenced in the new ESSA section. Sets nominal voltage and frequency as IEEE 2800-2022 directs the TS Owner to do so.	New subsection added - Attachment B, Section 1(k)(ii) (Applicability of IEEE 2800-2022)
4.7	Prioritization of IBR responses	Yes		Was not included in Exhibit A Table in Company's February 10th letter in Docket No. 2017-0352, but was mentioned in the letter as an area we may consider for clarifying use in other referenced subsections, which is how it is referenced in the new ESSA section. Defines prioritization of controls with the historical intent of ESSA.	New subsection added - Attachment B, Section 1(k)(iii) (Prioritization of IBR responses)
5	Reactive power-voltage control requirements within the continuous operation region	Yes		Aligned with appropriate modification/clarification to match original expectations of expanded capability.	Reference added - Attachment B, Section 3(a) (Reactive Power Control)

6	Active power - frequency response requirements	Yes		Refer to reference for update	Reference and new subsections added - Attachment B, Section 3(v) (Active-Power - frequency response requirements). Included important clarifications of expected functions left to TS operator, as new subsections (i)(A)(1)-(3). This section now contains the requirements previously contained in Attachment B, Section 1(g)(xi)-(xii) as updated with appropriate IEEE parameters.
6.1	Primary frequency response (PFR)	Yes		Modified with existing ESSA PFR parameters	Included as part of reference of entire Section 6 in Attachment B, Section 3(v) (Active-Power - frequency response requirements), as noted above.
6.2	Fast frequency response (FFR)	Yes	new capability	Modified with prior Stage 2 FFR droop parameters (from Stage 2 model PPA that included FFR). HI/Maui default parameters modified in accordance with DER FFR study.	New subsection added - Attachment B, Section 3(v)(i)(A)(5) (Fast Frequency Response)
6.2.3	Fast frequency response from wind turbine generator (WTG)-based IBR plant	No		Not applicable.	None
7	Response to TS abnormal conditions				
7.1	Introduction	Yes		Included as part of the minimum benchmark of ride-through capabilities.	Reference added - Attachment B, Section 3(d)(i) (Ride-Through Requirements)
7.2	Voltage	N/A		Not applicable.	None
7.2.1	Voltage protection requirements	Yes		This section makes reference to section 9.3 AC voltage protection	Reference added - Attachment B, Section 3(d)(i) (Voltage and Ride Through Requirements) to requirements that were already there to add clarity in direct section of applicability.
7.2.2	Voltage disturbance ride-through requirements	n/a		Not applicable.	None

7.2.2.1	General requirements and exceptions	No		ESSA requirements more stringent.	No changes - Attachment B, Sections 3(d) (Ride-Through Requirements), 3(e) (Undervoltage Ride-Through), and 3(f) (Over Voltage Ride-Through) already provide the existing higher requirements
7.2.2.2	Voltage disturbances within continuous operation region	No		ESSA requirements more stringent. Requires full reactive capability and Short-term Overcurrent Capability in continuous operation range. IEEE 2800-2022 does not.	No changes - Attachment B, Sections 3(a) (Reactive Power Control) and 3(h) (Short-term Overcurrent Capability) have higher requirements.
7.2.2.3	Low- and high-voltage ride-through within mandatory operation region	n/a		Not applicable.	None
7.2.2.3.1	General	Yes		Defines applicable voltage per 4.3.	References added - Attachment B, Sections 1(k)(ii) (Applicability of IEEE 2800-2022), 3(e) (Undervoltage Ride-Through), 3(f) (Over Voltage Ride-Through), and 3(i) (Frequency Ride-Through).
7.2.2.3.2	Low- and high-voltage ride-through capability	Yes		Enables ability for TS to determine current priority mode.	References added - Attachment B, Section 3(d)(i) (Ride-Through Requirements) to clarify ridethrough capability expectations; partially addressed in Attachment B, Section 3(g) (Transient Stability Ride-Through)
7.2.2.3.3	Low and high-voltage ride-through performance	Yes		IBR should not operate in current blocking mode. ESSA clarifies this.	Reference added - Attachment B, Section 3(d)(i) (Ride-Through Requirements)
7.2.2.3.4	Current injection during ride-through mode	Yes		Replaced paraphrased requirement to now directly reference IEEE 2800-2022 standard in the Short-term Overcurrent Capability section of the ESSA, while retaining higher expected capability.	Reference added - Attachment B, Section 3(h) (Short-term Overcurrent Capability) with retention of prior included additional functionality provisions.

7.2.2.3.5	Performance specifications	Yes		Requirements should not conflict with short-term overcurrent capability specified in ESSA. Existing organization and requirements of ESSA better suit reference to this section in Attachment B, Section 3(a) Reactive Power Control, rather than alignment with Ride-through sections as IEEE 2800-2022 is organized.	Reference added - Attachment B, Section 3(a) (Reactive Power Control). Replaces NERC guideline references previously provided in Attachment B, Section 3(b)(iv).
7.2.2.4	Consecutive voltage deviations ride-through capability	Yes		Standard is more comprehensive than ESSA	Reference added - Attachment B, Section 3(d)(iii) (Ride-Through Requirements), and replaces prior description for just the one reclose event that had been described in Attachment B, Section 3(e). Also replaces the prior dedicated Attachment B, Section 3(k) (Successive Faults).
7.2.2.5	Dynamic voltage support	Yes		This section says the response in IEEE 2800-2022 Section 7.2.2.3.4 is mandatory, which is already captured in the Short-term Overcurrent Capability section.	Incorporated through reference of IEEE 2800-2022 Section 7.2.2.3.4 made in Attachment B, Section 3(h) (Short-term Overcurrent Capability); no direct reference made
7.2.2.6	Restore output after voltage ride-through	Yes		Would need to configure response time to less than 1 sec. Adopted with this clarification.	Reference added - Attachment B, Section 3(d)(ii) (Ride-Through Requirements). Replaces prior paraphrased description with reference and appropriate modification.
7.2.3	Transient overvoltage ride-through requirements	Yes	new capability	This was not previously contemplated by the ESSA	Reference added - Attachment B, Section 3(k) (Transient overvoltage ride-through requirements)
7.3	Frequency	Yes		Not applicable	None
7.3.1	Mandatory frequency tripping requirements	Yes		Only includes reference to protection in Section 9	Reference added - Attachment B, Section3(d)(i) (Ride-Through Requirements) to existing requirements to add clarity in direct PSA section of applicability.
7.3.2	Frequency disturbance ride-through requirements	N/A		Not applicable	None

7.3.2.1	General requirements and exceptions	Yes		ESSA has more stringent requirements (larger range for frequency), adopted with clarification of ranges	Reference added - Attachment B, Section 3(i) (Frequency Ride-Through) with appropriate clarification to match original ESSA more stringent requirements.
7.3.2.2	Continuous operation region	Yes		Added as a minimum threshold for continuous operation regarding frequency ride-through	Reference added - Attachment B, Section 3(i) (Frequency Ride-Through) with appropriate clarification to match original PPA more stringent requirements.
7.3.2.3	Frequency disturbances within the mandatory operation region	N/A			None
7.3.2.3.1	Low-frequency ride-through capability	No		Not in conflict with ESSA.	None
7.3.2.3.2	Low-frequency ride-through performance	No		Not in conflict with ESSA.	None
7.3.2.3.3	High-frequency ride-through capability	No		Not in conflict with ESSA.	None
7.3.2.3.4	High-frequency ride-through performance	No		Not in conflict with ESSA.	None
7.3.2.3.5	Rate of change of frequency (ROCOF) ride-through	Yes		Existing ESSA section had equivalent paraphrased version, which is now replaced with reference to this IEEE 2800-2022 section.	Reference added - Attachment B, Section 3(l) (Rate of Change of Frequency "ROCOF")
7.3.2.4	Voltage phase angle changes ride-through	No		ESSA is basically paraphrased version of this with more stringent requirement of 30 degrees.	No changes made - See Attachment B, Section 3(m) (Voltage Phase Angle Change Ride-Through)
7.4	Return to service after IBR plant trip	No		Not applicable. Company returns to service (vs. developer)	None
8	Power Quality	Yes		Using IEEE 2800-2022 Section 8 as the minimum benchmark for power quality in the ESSA.	References added - Attachment B, Section 3(o) (Power Quality). Additional clarification of the voltage harmonics limits that apply in absence of such in IEEE 2800-2022 was retained from the original ESSA Attachment B, Section 3(p) (Harmonics). New section replaces original Attachment B, Sections 3(o) (Voltage Flicker) and 3(p) (Harmonics).

9	Protection	Yes		Refer to reference for update	References added - Attachment B, Section 1(b)(iii)(C) (Certain Specifications for the Facility) and 3(d)(i) (Ride-Through Requirements)
10	Modeling data	Yes		Requirements overlap with ESSA requirements	No change needed. Will get addressed with IRS modeling scope and letter agreement process.
11	Measurement data for performance monitoring and validation	Yes		High resolution measurement data collection and provisioning requirements are intended to be in accordance with this Section 11.	Reference added - Attachment B, Section 1(b)(iii)(D) (High Resolution Data)
12	Test and verification requirements	No		Too early to adopt	None

EXHIBIT 2

Proposed Final Timelines for the North Kohala Energy Storage RFP

Exhibit 2

Proposed Final Timelines for the North Kohala Energy Storage RFP

The following table reflects the schedule for the proposal process that is included within the North Kohala Energy Storage RFP (Exhibit 4).

The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule will be posted to the RFP website after the RFP is issued.

Table 1
Proposed RFP Schedule

Milestone	Schedule Dates
(1) Distribute RFP for Stakeholder input	September 23, 2021
(2) Technical Status Conference	September 30, 2021
(3) Parties and Participants file comments by	October 7, 2021
(4) Draft RFP filed	October 29, 2021
(5) Order 38195 issued	January 25, 2022
(6) Public comments filed by	February 25, 2022
(7) Order 38699 issued	November 10, 2022
(8) Restudy results filed	December 30, 2022
(9) Revised RFP filed by	January 13, 2023
(10) Order 38855 issued	February 14, 2023
(11) Proposed Final RFP filed	February 28, 2023
(12) Final RFP is Issued	March 24, 2023[1]
(13) Hawaiian Electric Proposal Due Date	May 30 2023 at 2:00 pm HST
(14) IPP and Affiliate Proposal Due Date	May 31, 2023 at 2:00 pm HST
(15) Selection of Final Award Group	August 29, 2023
(16) Contract Negotiations Start	September 6, 2023

[1] This date and all subsequent dates in the RFP Schedule (Table 1) are dependent on any further guidance to be set by the PUC.

EXHIBIT 3

Hawaiian Electric Companies' Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for the North Kohala Energy Storage RFP ("Competitive Bidding Code of Conduct")

The Hawai‘i Electric Light Company’s Code of Conduct

Hawai‘i Electric Light Company, Inc. ("Company") Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for the North Kohala Energy Storage RFP

Purpose

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

This *Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for the North Kohala Energy Storage RFP* (“Code of Conduct”) outlines the policies and general procedures under which the competitive bidding process for system resources will be undertaken by the Company to ensure that the competitive bidding process is undertaken in a fair and unbiased manner, that all proposers have access to the same information to ensure no proposer has an unfair advantage, and that Hawaiian Electric Proposal Team and/or affiliate options do not have any unfair competitive advantage or enjoy undue preference over third-party bids.

Definitions

- Affiliate – Any person or entity that possesses an “affiliated interest” in a utility as defined by section 269-19.5, Hawaii Revised Statutes (“HRS”), including a utility’s parent holding company but excluding a utility’s subsidiary or parent which is also a regulated utility.
- Affiliate Team – Employees and consultants of an Affiliate of the Company who prepare a proposal to be submitted to a Company in response to a Company RFP.
- Code of Conduct Acknowledgement – The Competitive Bidding Code of Conduct Acknowledgement of Receipt form required to be executed acknowledging review of, and agreeing to abide by, this Code of Conduct and its RFP Code of Conduct Procedures Manual.
- Code of Conduct Procedures Manual – The Company-prepared manual required by the Framework which implements procedures, in accordance with the policies outlined in the Framework and this Code of Conduct, for communications within the Company between the Company RFP Team, Shared Resources and Unassigned Company Resources and between the Company and proposers into an RFP, including a Hawaiian Electric Proposal Team and/or Affiliate Team.

- Communications Log – A written record to note activities and/or information shared between the Company RFP Team or Hawaiian Electric Proposal Team with Shared Resources or Unassigned Company Resources, accessed via the RFP Communication Tool Kit SharePoint Site.
- Company – Hawai‘i Electric Light Company, Inc.
- Company Executive in Charge – The Company executive responsible for ensuring compliance with this Code of Conduct and serving as the point of contact for the Independent Observer for reporting any violations by the Company of the Code of Conduct. The Company Corporate Compliance Officer shall remain responsible for the Company independent corporate code of conduct and may support compliance matters and questions arising with employees, agents and other representatives of the Company, e.g., conflicts of interest, with respect to this Code of Conduct.
- Company RFP – A written request for proposal issued by the electric utility to solicit bids from interested third-parties, and where applicable from the utility or its affiliate, to supply a future system resource or a block of system resources to the utility pursuant to the competitive bidding process.
- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company's RFP conducted under the Framework and the evaluation of bids submitted in response to this RFP. Subject to the transfer rules specified in the Company Code of Conduct Procedures Manual, the Company RFP Team will have fixed team members who will not have any involvement with the Hawaiian Electric Proposal Team for the RFP.
- Confidential Information – Any non-public information developed and provided by the Company (e.g., proprietary system information) 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 includes Confidential Resource Proposal Information and Confidential RFP Process Information but does not include public information, such as information in the Company's public filings with the Commission.
- Confidential Resource Proposal Information – Any non-public information developed and provided by the Hawaiian Electric Proposal Team, its affiliates or third-party 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).
- Confidential RFP Process Information – Any non-public information regarding the RFP process developed and used during the competitive bidding solicitation process.
- Consumer Advocate – The Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, State of Hawai‘i.
- Director of Renewable Acquisition – The supervisor of the Division that will oversee the Company's competitive bidding process.
- Energy Contract Manager – The staff position(s) within the Company's Renewable Acquisition Division responsible for managing the Company RFP Team. The Energy Contract Manager shall be a member of the Company RFP Team.
- Hawaiian Electric Proposal Team – The Company personnel and outside consultants responsible for the development of the Hawaiian Electric Proposal Team's response to the RFP. Subject to the transfer rules specified in the Company Code of Conduct Procedures Manual, the Hawaiian Electric Proposal Team will have fixed team members who will not

have any involvement with the Company RFP Team for the RFP.

- Independent Observer – The neutral person or entity either appointed by the Commission or, at the direction of the Commission, identified and retained by the 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-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.
- Roster – A consolidated list of members that comprise the Company RFP Team, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources located in the RFP Communication Tool Kit SharePoint Site. Names and roles of Company employees and consultants will be identified.
- Shared Resources – 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 Hawaiian Electric Proposal 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 Resources – Company employees unassigned to an essential team that may be called upon by the Company RFP Team and/or the Hawaiian Electric Proposal Team (but not any Affiliate Team) to assist in meeting unforeseen tasks for the RFPs or the Hawaiian Electric Proposal Team proposals. For example, the RFP team may be unable to evaluate an unforeseen technical specification included in a bid. In that event, the 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.

Implementation and Application of the Code of Conduct

Employees of the Company who will be involved in the competitive bidding process must comply with the Code of Conduct. Members of the Company RFP Team, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources must implement the Code of Conduct in order to be eligible to evaluate bids or participate in the development and submission of a Company system resource option.[1] The Code of Conduct addresses: (l) communication requirements and procedures associated with the relationship between utility employees; (2)

[1] Note: Shared Resources and Unassigned Company Resources are not eligible to evaluate bids. See *Rules for Evaluators* herein.

communication requirements and procedures associated with the relationship between utility RFP personnel and proposers; and (3) communication requirements associated with the relationship between Company management and the various entities involved in the competitive bidding process. The Code of Conduct Procedures Manual implements the requirements of the Framework and this Code of Conduct and provides further requirements for such communications.

The Code of Conduct also includes the procedures for addressing cases where limited resources and expertise of the Company may be shared by the Hawaiian Electric Proposal Team and Company RFP Team. While the Company will make every reasonable effort to develop internally separate teams for evaluating the bids and developing the Hawaiian Electric Proposal Team options, the small size of the Company and limitation of resources and expertise generally will require specialized services, information exchange and sharing of resources in certain limited circumstances, such as in the course of resource planning activities. Where the Company has identified these limited resources and expertise, the Company has designated such resources and expertise as Shared Resources with strict communications restrictions and the requirement to maintain the Communication Log of all communications with either team.

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

General Rules

1. Competitive Bidding Code of Conduct Acknowledgement of Receipt. Any employee (whether full-time, part-time, temporary or contract) or consultant involved in the competitive bidding process as a member of the Company RFP Team or the Hawaiian Electric Proposal Team, or designated as a Shared Resource or Unassigned Company Resource, shall comply with the rules of conduct in this Code of Conduct and the procedures outlined in the Code of Conduct Procedures Manual and must sign the Code of Conduct Acknowledgement.

2. Separation of Teams; No Transfer Between Teams. To enhance the opportunity to maintain separation of resources between the Company RFP Team and the Hawaiian Electric Proposal Team, while recognizing the potential problems associated with limited resources, the following procedures shall be followed. The Company RFP Team will have no involvement with the Hawaiian Electric Proposal Team with respect to the RFP. Further, no team member from one team may switch teams, i.e., from the Company RFP Team to the Hawaiian Electric Proposal Team and vice versa, within any particular stage or phase of the RFP. Other employees, not a member of any team, could serve as Shared Resources or Unassigned Company Resources, but will be subject to the conditions defined in General Rules 7 and 8, respectively, below.

3. No Involvement with Affiliate Teams. Affiliate Teams shall be considered and treated as a separate third-party proposer for all purposes within the RFP. There shall be no communication or interaction between the Company RFP Team and any Affiliate Team except as may be permitted under the Framework, this Code of Conduct or the Code of Conduct Procedures Manual and consistent in all respects with communications and

interactions permitted with unaffiliated third-party proposers. Affiliate Teams shall have no access to, interaction or communications with Shared Resources or Unassigned Company Resources for the purpose of completing a proposal in response to the RFP. Affiliates of the Company shall also be subject to the terms, conditions and restrictions specified in the Company's Affiliate Transaction Requirements issued by the Commission.[2]

4. Duty Not to Disclose Confidential Information Across Teams. Members of the Company RFP Team may work with members of the Hawaiian Electric Proposal Team or with an Affiliate on other projects not related to the Company RFP, but are prohibited from discussing or disclosing, directly or indirectly through a conduit, Confidential Information with: (i) the Hawaiian Electric Proposal Team and any Affiliates except in accordance with the procedures outlined in this Code of Conduct and the RFP, or (ii) any other Company employee, individual or entity without a business need to know. No transfer of an employee of the Company, including to an Affiliate, shall be used to circumvent this prohibition to create a conduit for the prohibited transfer of Confidential Information.

5. Work Locations. Members of the Company RFP Team and the Hawaiian Electric Proposal Team do not have to be physically separated from each other but members of each team must take all reasonable measures to keep all Confidential Information (including electronic data) pertaining to the competitive bidding process confidential.

6. Roster. The Roster for the Company RFP Team, the Hawaiian Electric Proposal Team, Shared Resources and identified Unassigned Company Resources will be maintained by the Company and provided to the Independent Observer upon request. All team members will be specifically identified by name and role.

7. Managing of Shared Resources. Certain Company resources, such as select staff from various functional areas of the Company (e.g., generation and transmission planning, engineering, system and power plant operations, environmental, financial analysis, risk management, etc.) that are not members of any team, may be treated as a shared resource to perform services for the Company RFP Team and to carry on their regular functions throughout the resource planning process (including the development of the utility's Parallel Plan or Contingency Plan as defined in the Framework), which may require communication with or services performed for the Hawaiian Electric Proposal Team. Shared Resources may perform these services subject to complying with the Code of Conduct and the Code of Conduct Procedures Manual. Any information received by employees serving as a Shared Resource from their communication with one team (either the Company RFP Team or Hawaiian Electric Proposal Team) will not, either directly or indirectly through others, be provided to members on the other team or to other proposers, except through the formal RFP communication process. A written record of the time, date and substance of all conversations, data and written material directly or indirectly exchanged with any member of the Company RFP Team or the Hawaiian Electric Proposal Team that pertain to the Company RFP, shall be maintained on the Communication Log. The Independent Observer will have contemporaneous access to the Communication Log. In any limited case where information or resources are required to be provided by one team

[2]See Order No. 36112, issued January 24, 2019, in Docket No. 2018-0065, establishing those certain Affiliate Transaction Requirements for the Company and its Affiliates.

to another, and because of confidentiality or proprietary reasons, cannot be disseminated through the means specified in the Company RFP, all such communications will be directed through the Energy Contract Manager copied to and with direct oversight by the Independent Observer.

8. Managing of Unassigned Company Resources. Certain Unassigned Company Resources may be requested to perform services for either the Company RFP Team or the Hawaiian Electric Proposal Team on an *ad hoc* basis that does not necessitate such resource being added to the team requesting assistance. Such Unassigned Company Resources may provide such services subject to complying with the Code of Conduct and the Code of Conduct Procedures Manual. In connection with providing such services, a written record of such services shall be maintained in the same manner and fashion as the written records required of Shared Resources on the Communication Log. The Independent Observer will have contemporaneous access to this Communication Log.

9. Access to Information During Bidding Period. It is the objective of the Company that all proposers, as well as the Hawaiian Electric Proposal Team and any Affiliate Team, receive access to the same RFP information at the same time. All communications regarding the RFP will be provided to all proposers through the communication means specified in the Company RFP or other specialized means of access established for purposes of administering the RFP. No members of the Hawaiian Electric Proposal Team or Affiliate Team will have access to such information before it is distributed to all potential proposers.

10. Duty Not to Disclose Confidential Resource Proposal Information During RFP Process. All Confidential Resource Proposal Information shall be held in confidence during the RFP evaluation and selection process and negotiation of contracts with selected proposers (if necessary), and shall not be discussed or exchanged by the Company RFP Team with any party except the proposer providing the information, Company management personnel responsible for resource decisions, Company RFP Team members, the Independent Observer, and the Commission and the Consumer Advocate, and their respective staffs and consultants. Dissemination of such Confidential Resource Proposal Information shall be limited, to the extent possible, to those with a business need to know.

11. Prohibition of Hawaiian Electric Proposal Team and Affiliates from Advance Disclosure of Confidential Resource Proposal Information to Company RFP Team. The Hawaiian Electric Proposal Team and any Affiliate Team are prohibited from providing team members of the Company RFP Team with any Confidential Resource Proposal Information pertaining to the development of a Hawaiian Electric Proposal Team or Affiliate Team resource option in response to a Company RFP until after that proposal is officially submitted.

12. Treatment of Information Requests from Hawaiian Electric Proposal Team and Affiliate Team. The Company RFP Team will treat all requests from the Hawaiian Electric Proposal Team and Affiliate Team for information pertaining to the Company RFP in the same manner as requests received from non-affiliate entities. The Hawaiian Electric Proposal Team and the Affiliate Team will be required to submit all questions in writing and will receive a response via the communication means specified in the Company RFP, as would any other proposers.

13. No Preferential Treatment. The Company RFP Team, when evaluating proposals will give all proposals the same consideration within the parameters of the particular RFP and the eligibility, threshold and evaluation requirements and criteria contained therein. Hawaiian Electric Proposal Team bids and Affiliate Team bids will not be given any preferential or discriminatory treatment.

14. Applicability of Code. Any employee or consultant who directly or indirectly takes part in the conduct of the competitive bidding process, whether an employee of the Company or of a company under contract, shall comply with the requirements for treatment of Confidential Information obtained during the competitive bidding process. Such employee or consultant shall execute the Acknowledgement required under General Rule 1 above.

15. Rules for Evaluators. Any employee or consultant taking part in the evaluation of bids or in the process of selecting system resources (the "evaluator") must comply with the following rules and eligibility requirements:

    a. In carrying out his or her responsibilities, the evaluator must make his/her decision based on the merits of the proposal and irrespective of all partisan considerations;

    b. The evaluator must not accept any gifts, favors, entertainment or other advantages from any proposers;

    c. The evaluator must hold in confidence all Confidential Information obtained through the bidding process;

    d. Should the evaluator be directly contacted by any proposer, including members of the Hawaiian Electric Proposal Team or Affiliate Team, he/she must promptly relate such contact to the Energy Contract Manager, and, as applicable, the Independent Observer, if such contact could be deemed to have compromised the evaluation process.

    e. Evaluators shall be members of the Company RFP Team, separated into price and non-price evaluation teams. See *Code of Conduct Procedures Manual* for details.

    f. Shared Resources and Unassigned Company Resources shall not be permitted to participate, or advise the Company RFP Team, in evaluating bids.

16. Company Officer Certification of Code of Conduct Compliance. A Company officer, identified to the Independent Observer and the Commission, shall have the written authority and obligation to enforce the Code of Conduct. Such officer shall certify, by affidavit, Code of Conduct compliance by all employees participating in a specific RFP process after each specific RFP process ends.

17. Term. This Code of Conduct shall remain in effect until: (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 Independent Observer and the Commission; and (b) a certification of Code of Conduct compliance by all employees participating in the specific RFP process is submitted by affidavit by the Company Executive in Charge. The Code of Conduct shall remain in effect through all

stages or phases of a particular RFP, regardless of the length of time between such stages or phases in the RFP.

EXHIBIT 4

Proposed Final Draft North Kohala Energy Storage RFP

Hawai'i Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI'I

FEBRUARY 28, 2023

Docket No. 2022-0012

Table of Contents

List of Appendices

Chapter 1: Introduction and General Information

Hawai‘i Electric Light Company, Inc. (“Hawai‘i Electric Light” or the “Company”) seeks Proposals for a standalone Battery Energy Storage System (“BESS”) for the North Kohala area on the island of Hawai‘i in accordance with this Request for Proposals (“RFP”). Hawai‘i Electric Light seeks to procure 5 megawatts (“MW”) / 30 megawatt hours (“MWh”) of standalone energy storage capacity, through a single BESS Project, for integration with a microgrid controller system.

The Company or its Affiliates may submit a Proposal in response to this RFP subject to the requirements of this RFP.

The Company intends to contract for a single BESS Project through this RFP using its Energy Storage Services Agreement (“ESSA”), which gives the Company full dispatch rights over the energy storage facilities.

The successful Proposer will provide energy storage services to the Company pursuant to the terms of the ESSA, which will be subject to review and approval by the State of Hawai‘i Public Utilities Commission (“PUC”).

Proposers are instructed to thoroughly review the Model ESSA attached as Appendix L. The ESSA gives the Company exclusive rights to schedule and control the Project for the use of the defined Performance Standards, which include but are not limited to: Back-up Power, Rated Energy Capacity, Frequency Regulation, Rated Active Power Capacity, Voltage Regulation, Black-Start, ability to operate in grid-forming mode, and any other uses the Project is capable of providing that would benefit the Company’s distribution or transmission system; and, in exchange, the Proposer is provided a fixed monthly payment (“Lump Sum Payment”), which is subject to adjustment based on the availability and performance of the Project. Under the ESSA, the Project must meet certain requirements to receive the full Lump Sum Payment each month. These requirements ensure that the Project is available to the Company for scheduled and un-scheduled operation of the microgrid or system needs.

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4. The Company will evaluate and select a single Proposal based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Project.

Additionally, the bid price of the Proposal will be added to the estimated cost of the Company’s microgrid project. This aggregated cost will then be compared with the estimated value of a traditional second wires path solution. This estimated value is intended to be used as an order of magnitude financial estimate of the non-wires alternative opportunity. The estimated value is based on the current planning level estimate for the traditional second wires path solution. This step occurs as part of the eligibility screening immediately after receiving proposals, as set forth in Section 4.2 of the 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, and in the ESSA attached as Appendix L.

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

1.1 Authority and Purpose of the Request for Proposals

1.1.1 This RFP is issued in alignment with the Integrated Grid Planning ("IGP") process with respect to Non-Wires Opportunity Evaluation Methodology dated June 2020.[1]

1.1.2 While storage resources were not contemplated in 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"), the Company intends to follow the Framework to the extent applicable for this RFP. This RFP is also consistent with the Updated Framework for Competitive Bidding ("Updated Framework" or "Updated Competitive Bidding Framework"), which was drafted to be more inclusive of various technologies, and filed on February 12, 2021 in Docket No. 2018-0165. Order No. 38481, issued on June 30, 2022, approved the Updated Framework for use in the first round of integrated grid planning. Until the first round of integrated grid planning RFPs commence, the Company will continue to follow the Framework.

1.1.3 Proposers should review the functional requirements identified in Appendix O which informs Proposers of the system needs.

1.2 Scope of the RFP

1.2.1 The Company is seeking one (1) standalone storage project that meets the requirements noted in this RFP for integration with a microgrid controller system. This would be the first utility microgrid based on storage in the State of Hawai'i. Establishing this microgrid system with a BESS provides a non-wires alternative[2] by providing a grid-forming energy source in the North Kohala area when the 3300 line connection is not available. This energy source will be charged from grid energy while the 3300 line is in service. By supporting the electrical needs of customers during sustained 3300 line outages, this microgrid avoids having to build an alternative transmission path to avoid outages during the rebuilding of the 3300 line, and also, will be able to provide service during unplanned outages. This would improve reliability and resilience for customers in North Kohala while allowing for routine maintenance of the 3300 line without building a second path to serve the area. Installing a microgrid system with a BESS avoids the use

[1] See https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/stakeholder_engagement/working_groups/distribution_planning/20200602_dpwg_non_wires_opportunity_evaluation_methodology.pdf

[2] A non-wires alternative, also referred to as non-transmission alternative in this RFP, is generally defined as an electricity grid project that uses non-traditional transmission and distribution solutions, such as distributed generation, energy storage, energy efficiency, demand response, and grid software and controls, to defer or avoid the need for conventional transmission and/or distribution infrastructure investments. See Docket No. 2018-0165, Hawaiian Electric Companies' Integrated Grid Planning Workplan, filed December 14, 2018, at 21.

of a diesel-powered microgrid, which was also considered, but did not receive the level of community acceptance as a battery solution.

1.2.2 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.2.3 Projects must interconnect to the Company's System at the 34.5 kV level at the existing Hawi Substation located on the island of Hawai'i (see Section 3.11 of this RFP, Appendix F and Appendix H, Attachment 1.

1.2.4 To prevent adverse impacts to the microgrid reliability, the storage system and protection design shall provide sufficient redundancy to avoid single points of failure of critical telemetry measurements.

1.2.5 The contract for the Project selected through this RFP shall use the ESSA, as described in Section 3.8. Under the ESSA, the Company will maintain exclusive rights to fully direct charge and discharge of the Project, subject to availability of the resource and Section 1.2.7 below. The term of the ESSA will be 10 years.

1.2.6 The Project must be capable of the following Performance Standards: Back-up Power, Rated Energy Capacity, Frequency Regulation, Rated Active Power Capacity, Voltage Regulation, Black-start, ability to operate in grid-forming mode; and, any other uses the Project is capable of providing that would benefit of Company's distribution or transmission system. The storage will be charged in accordance with the Company design when not in a microgrid configuration, and once charged, remain ready to support microgrid operation for planned and unplanned outages.

1.2.7 The Maximum Annual Energy Throughput is expected not to exceed 5400 MWh. The Annual Energy Throughput is the cumulative energy discharged by the Project measured between 12:00 am January 1 to 11:59:59 pm December 31 in each calendar year. Energy discharge can occur in continuous full discharges or over intermittent discharges and charges.

1.2.8 Proposals must specify a Guaranteed Commercial Operations Date ("GCOD") no later than September 19, 2025.

1.2.9 A Proposer's GCOD set forth in its Proposal will be the GCOD in any resulting ESSA if such Proposal is selected to the Final Award Group. Note that the Company intends to contract for a single BESS Project and therefore the Final Award Group will only consist of one project.

1.2.10 The selected Proposer will be responsible for all Project costs throughout the term of the ESSA, including but not limited to Project development, completion of a facility equipment and controls design review, interconnection design review, the cost of conducting a greenhouse gas analysis, land leasing, to the extent set forth in Appendix F to the RFP and the ESSA, permitting, financing, construction of the Project and all

Seller-owned Interconnection Facilities, and the operations and maintenance ("O&M") of the Project.

1.2.11 The selected Proposer will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the ESSA, as described in Attachment G, Section 7 of the ESSA.

1.2.12 To the extent that any federal or state tax credits exist, the selected Proposer shall pursue all such tax credits (including, without limitation, all available applicable tax credits from the federal Inflation Reduction Act). Proposal pricing must be set to incorporate the benefit of any such federal or state tax credits. In the event additional federal tax credits become available through new tax legislation after Proposals are submitted but before Proposals are selected to the Final Award Group, the Company may require applicable Proposals propose an additional downward only price adjustment to allow the benefits of those additional tax credits to be passed along to the Company's customers.

However, to mitigate the risk on Proposers due solely to potential changes to Hawai'i 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 ESSA 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 ESSA. The ESSA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue such maximum available state tax credit.

1.2.13 The selected Proposer will submit a project schedule as required per Attachment S of the ESSA, including creating its schedule using Microsoft Project and submitted in .mpp file format.

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: **Bates White, LLC**.

The Independent Observer Email Address is: vincent.musco@bateswhite.com.

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 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.

To ensure the Independent Observer can monitor communication, questions regarding the RFP or a proposed Project submitted to the RFP Email Address should include the Independent Observer Email Address found in Section 1.4.3. 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 (see RFP Schedule in Section 3.1, Table 1). 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 North Kohala Mutual Confidentiality and Non-Disclosure Agreement[3] ("NDA"). See Appendix E.

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

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Christin Chang
Energy Contract Manager
Hawaiian Electric Company, Inc.

RFP Email Address: renewableacquisition@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 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.

[3] See Section 3.12.1 of this RFP.

Such legal counsel will also be required to submit a similar certification at the conclusion of contract 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 1. 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 Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that all Proposals were submitted by the Proposal Due Dates shown in Section 3.1, Table 1. The Electronic Procurement Platform automatically closes to further submissions after the IPP and Affiliate Proposal Due Date in Section 3.1, Table 1.

1.8 Proposal Fee

1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of $5,000 for each Proposal submitted.

1.8.2 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Hawai'i Electric Light Company, Inc." and must be delivered and received by the Company by 2:00 pm HST on the Proposal Due Date shown in the RFP Schedule in Section 3.1, Table 1. The cashier's check should include a reference to the Proposal 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:

Christin Chang
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:

Hawaiian Electric Company, Inc
Ward Receiving
Attention: Christin Chang, Energy Contract Manager
Mail Code AL12-IU
799 S. King St.
Honolulu, Hawai'i 96813

Due to coronavirus prevention measures, Proposal Fees cannot be delivered in person.

1.9 Procedures for any Hawaiian Electric or Affiliate Proposals

1.9.1 The Competitive Bidding Framework allows the Company the option to offer a Self-Build Proposal in response to this RFP ("Hawaiian Electric Proposal"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the Hawaiian Electric Proposal or members, agents, or consultants of the Company formulating the Hawaiian Electric Proposal; and (2) preferential access to proprietary information by the Hawaiian Electric Development Team. These requirements are specified in the Code of Conduct ("North Kohala Code of Conduct") required under the Framework and implemented by certain rules and procedures found in the Procedures Manual attached as Appendix C. The North Kohala Code of Conduct will apply regardless of whether the Company will submit a Hawaiian Electric Proposal.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals[4] to RFPs issued by the Company. All Hawaiian Electric and Affiliate Proposals are subject to the Company's Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP Proposal and must be submitted electronically through the Electronic Procurement Platform by the IPP and Affiliate Proposal Due Date in RFP Section 3.1, Table 1.

1.9.2 The Company will require that the Hawaiian Electric and Affiliate Proposal(s) be submitted electronically through the Electronic Procurement Platform. Hawaiian Electric Proposals will be due a minimum of one (1) Day before other Proposals are due.

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

Hawaiian Electric Proposals will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Hawaiian Electric Proposals are timestamped by the Hawaiian Electric Proposal Due Date shown in RFP Section 3.1, Table 1.

1.9.3 Detailed requirements for a Hawaiian Electric Proposal can be found in Appendix G. These requirements are intended to provide a level playing field between Hawaiian Electric Proposals and third-party Proposals. Except where specifically noted, a Hawaiian Electric Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers, as well as certain ESSA requirements, such as milestones and liquidated damages, as described in Appendix G. The non-negotiability of the Performance Standards shall apply to any Hawaiian Electric Proposal to the same extent it would for any other Proposal. Notwithstanding the fact that it will not be required to enter into an ESSA with the Company, a Hawaiian Electric Proposal will be required to note its exceptions, if any, to the ESSA in the same manner required of other Proposers, and will be held to such modified parameters if selected. In addition to its Proposal, the Hawaiian Electric Development Team will be required to submit Appendix G Attachment 1, Hawaiian Electric Development Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Hawaiian Electric Proposal Team over other Proposers responding to this RFP, as well as adherence to ESSA terms and milestones required of all Proposers and the Hawaiian Electric Proposal's proposed cost protection measures.

The cost recovery methods between a regulated utility Proposal and IPP Proposals are fundamentally different due to the business environments they operate in. As a result, the Company has instituted a process to compare the two types of Proposals for the evaluation of the price related criteria on a 'like' basis through comparative analysis.

At the core of a Hawaiian Electric Proposal are its total project capital cost and any associated annual O&M costs. During the RFP's pricing evaluation step, these capital costs[5] and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the Project. The Hawaiian Electric Proposal revenue requirements are then used in a levelized benefit calculation to determine a Levelized Benefit ("LB") ($/MWh) which will then be used for comparison to IPP and any Affiliate Proposals.

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the Hawaiian Electric Proposal to ensure an appropriate level of customer cost protection measures are included in such Proposal.

[5] Hawaiian Electric Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction, interconnection, overhead, and Allowance for Funds Used During Construction.

The Hawaiian Electric Proposal will be permitted to submit a shared savings mechanism with its Proposal to share in any cost savings between the amount of cost bid in the Hawaiian Electric Proposal and the actual cost to construct the Project. If the Hawaiian Electric Proposal is selected to the Final Award Group, the proposed shared savings mechanism will need to be approved by the PUC. Submission of a shared savings mechanism is not required and will not be considered in the evaluation of the Hawaiian Electric Proposal.

1.10 Dispute Resolution Process

1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.

1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer ("Initial Meeting"). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.

1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential mediation in Honolulu, Hawai'i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. ("DPR") (or its successor) or, in its absence, the American Arbitration Association then in effect ("Mediation"). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorneys' 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.

[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.

1.10.6 By submitting a Proposal in response to this RFP, each Proposer expressly agrees that if it initiates a dispute resolution process for any dispute or claim submitted in violation of or arising under or relating to this RFP (e.g., a court proceeding, arbitration, etc.), other than as permitted by the Framework and Section 1.10 of this RFP, such dispute shall be dismissed with prejudice and the Proposer filing such dispute or claim 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, non-award or disqualification of a Project made by the Company or any decision by the Commission made pursuant to Section 1.10.5.

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

1.12 Modification or Cancellation of the Solicitation Process

1.12.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final execution of an ESSA, 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.

1.13 Community Outreach

The North Kohala community has played an important role in shaping this project. The Company took a collaborative approach in developing plans to improve resilience and reliability in the North Kohala area. The Company shared information and requested feedback through focus groups, conducted roundtables with key community members, provided regular briefings to Hawai‘i Island government leaders, and provided updates at town halls hosted by elected officials. The Company also formed partnerships with organizations that work to keep the North Kohala community safe, healthy and connected. Through these partnerships, the Company hosted or participated in several events including the North Kohala Resilience and Sustainability Forum and various community fairs and festivals. As a result of the feedback and input provided by community members, the Company was able to develop the proposed microgrid project and the requirements of this RFP.

Chapter 2: Resource Needs and Requirements

2.1 Performance Levels and Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the ESSA. This RFP and the ESSA 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 Interconnection Requirement Study ("IRS"). The Company has not yet fully adopted IEEE 2800-2022 as it was recently published. However, the inverters being procured in this RFP may need to conform to certain functions of IEEE 2800-2022 as identified in studied completed within this RFP, or in the future operations of the project. The interconnection study will incorporate IEEE 2800 to the extent applicable to our island systems.

The ESSA should be referenced for the complete list of Performance Levels and Performance Standards and details of each; but the following Performance Levels and Performance Standards are considered of utmost importance to ensure acceptable performance of the proposed resource and are reproduced here for reference:

"Back-up Power" means the capability to supply power to maintain service continuity and grid resilience in the event of an outage, at the direction of the Company.

"Performance Level Rated Energy Capacity" means the amount of energy that the Project is capable of discharging in megawatt-hours (MWh), measured between the maximum and minimum allowable states of charge and available to the Company. To avoid the imposition of liquidated damages ("LDs"), the Performance Level Rated Energy Capacity shall not be less than the Contract Capacity (30 MWh).

"Frequency Regulation" means the capability to consume or deliver active power, for the purpose of retaining a target frequency under changing load and generation conditions.

"Rated Active Power Capacity" means the total possible instantaneous discharge capability in megawatts (MW) of the Project, or the maximum rate of discharge that the Project can achieve, starting from a fully charged state, and available to the Company.

"Voltage Regulation" means the ability to compensate for anomalies or disturbances (e.g., voltage magnitude, harmonics, etc.) to achieve a target voltage at the Point of Interconnection by manipulating the reactive energy component of the Project.

"Black-Start" means the capability of the Project to self-start, and also energize the islanded transformers and loads, as defined in the RFP, in a single breaker closure without outside assistance. Further, inverter-based resources shall ensure they have sufficient energy storage to maintain power injection to the grid during system restoration (i.e., have power available when and if called upon). The capability of the Project to energize transformers and loads is only required within the limits of the Rated Active Power Capacity, Rated Energy Capacity, and Short-term Overcurrent Capability. The Seller is responsible for establishing the required minimum capacities and appropriate controls of the Facility to facilitate black start energization within the Rated Active

Power Capacity, Rated Energy Capacity, and Short-term Overcurrent Capability limits of the Project determined by the Company.

"Performance Level RTE" means the sound trip efficiency rate, or RTE Ratio of not less than 85%, which is required to be maintained to avoid the imposition of LDs.. This represents the lowest acceptable efficiency of the Facility for a full charge and discharge cycle with all energy to achieve the full cycle being taken from and delivered to the Point of Interconnection.

"Performance Level Availability" means the Measured Availability of 98% or greater, which is required to be achieved to avoid the imposition of LDs.

The Project must also meet all other Performance Standards described in Section 3 of Attachment B of the ESSA; including but not limited to reactive capability, ride-through, and the ability to operate in grid-forming ("GFM") mode as further described in the ESSA.

The functionality and characteristics of the storage must be maintained throughout the term of the ESSA. To be clear, Proposers may not propose any energy storage degradation below the Performance Levels for either capacity or efficiency in their Proposals. Ensuring that there is no degradation in storage capacity or efficiency over the term of the ESSA can be accomplished in a number of ways, including overbuilding or pricing in replacement components. The particular manner in which this requirement is achieved is ultimately up to the Proposer to include in its Proposal.

2.2 Transmission-Level System Information

The Company has performed a preliminary evaluation of the Transmission System which indicates a BESS of the requested size is able to interconnect and support the North Kohala area. The Company will provide line data and load transformer datasheets to Proposers to simulate a black start of the microgrid system in an electromagnetic transient ("EMT") environment system if requested via the communication methods identified in Section 1.5 and upon the execution of an NDA as specified in Section 3.12.1. Proposals are required to provide EMT simulation results demonstrating acceptable black start performance of the microgrid using the proposed resource. Further, as part of this RFP, fault current levels at select busses are provided and Proposals are expected to verify their proposed resource can achieve these fault current levels in modeling. A detailed IRS will be required to ensure the Project BESS size, proposed inverter equipment, and controller settings are providing acceptable performance when grid connected, islanding, and during Black Start. Additional system mitigation measures in the form of additional equipment is not expected to be required to integrate any specific Project selected through this RFP and if any is identified the addition will be at the cost of the Company. Per Section 3.11 and Appendix F, Projects must interconnect to the Company's System at 34.5 kV level at the existing Hawi Substation located on the island of Hawai‘i. The estimated configuration of the interconnection is provided in Appendix H. Any questions regarding the interconnection

may be directed to the RFP Email Address in Section 1.6 after the execution of the NDA as specified in Section 3.12.1.

2.3 Interconnection to the Company System

2.3.1 The Proposer must provide all information pertaining to the design, development, and construction of the Seller-Owned Interconnection Facilities as specified in Appendix B.

2.3.2 All Proposers must provide a completed Project Interconnection Requirement Study Data Request worksheet, which can be found in Appendix B, Attachment 2, with the Proposal submission. All project diagram(s), models for equipment and controls (see Appendix B, Attachments 3 and 4), list(s) identifying components and respective files (for inverters and power plant controller), and complete documentation with instructions must also be submitted with the Proposal submission. The proposed Interconnection Facilities must be compatible with the Company System and in coordination with Company-Owned Interconnection Facilities. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System. Please see Appendix B for reference.

2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point of Interconnection with the Company System, and scheme of interconnection, must meet Company standards as applicable.

2.3.2.2 Interconnection Facilities must be designed such that it meets or exceeds the applicable single line diagram in Appendix H, Attachment 1.

2.3.3 RESERVED

2.3.4 The selected Proposer shall be responsible for building all Seller-Owned Interconnection Facilities and for all costs for Seller-Owned Interconnection Facilities needed to interconnect a Project to the Company System. The Company will be responsible for building all Company-Owned Interconnection Facilities and for all costs for Company-Owned Interconnection Facilities needed to interconnect a Project to the Company system.

2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and distribution equipment expected to be required between their Project and the Point of Interconnection. The selected Proposer shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities (see Appendix H), whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.

2.3.6 RESERVED

2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. The selected Proposal will be subject to further study in the form of an

IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed ESSA.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the "RFP Schedule"). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via email to the Proposers and posted on the RFP Website.

Table 1
RFP Schedule

Milestone	Schedule Dates
(1) Distribute RFP for Stakeholder input	September 23, 2021
(2) Technical Status Conference	September 30, 2021
(3) Parties and Participants file comments by	October 7, 2021
(4) Draft RFP filed	October 29, 2021
(5) Order 38195 issued	January 25, 2022
(6) Public comments filed by	February 25, 2022
(7) Order 38699 issued	November 10, 2022
(8) Restudy results filed	December 30, 2022
(9) Revised RFP filed by	January 13, 2023
(10) Order 38855 issued	February 14, 2023
(11) Proposed Final RFP filed	February 28, 2023
(12) Final RFP is Issued	March 24, 2023[7]
(13) Hawaiian Electric Proposal Due Date	May 30 2023 at 2:00 pm HST
(14) IPP and Affiliate Proposal Due Date	May 31, 2023 at 2:00 pm HST
(15) Selection of Final Award Group	August 29, 2023
(16) Contract Negotiations Start	September 6, 2023

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/NorthKohalaEnergyStorageRFP

[7] This date and all subsequent dates in the RFP Schedule (Table 1) are dependent on any further guidance to be set by the PUC.

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[8] 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.

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 Company held a stakeholder outreach meeting on September 2, 2021 to discuss the needs set forth in this RFP and gain stakeholder input. A recording of the September 2, 2021 stakeholder outreach meeting can be found on the Company's RFP website.

The Company also conducted a Technical Status Conference on September 30, 2021 to discuss this draft RFP. Parties and Participants had the opportunity to submit comments on the draft RFP. A recording of the Technical Status Conference can be found on the RFP website. The Company has reviewed and answered questions sent in by stakeholders which can be found on the RFP website and submitted a draft RFP for PUC review and approval on October 29, 2021. The Company has also responded to 45 information requests from the Commission and filed the results of the BESS sizing restudy and updated pricing for the Microgrid + BESS Project on December 30, 2022, as directed by the Commission in Order No. 38699.

Additionally, the Company will hold a prerecorded webinar 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 RFP 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.

[8] PowerAdvocate became part of Wood Mackenzie in 2021, but web addresses and support email addresses still reference to PowerAdvocate.

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 ESSA. 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 has no obligation to inform the Proposer of any error, and the Company will not accept any assertion 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 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.

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[9] of the Proposer.

3.5 Organization of the Proposal

3.5.1 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.

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

3.6 Proposal Limitations

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

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

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.

- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.

- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the NDA.

Proposers understand and agree that if its Proposal is selected by the Company for the Final Award Group, such selection shall in no way constitute the Company's confirmation that a Proposer's Project will meet the requirements under this RFP, e.g., that the Project's proposed interconnection is feasible and will meet the Company's requirements. The Proposer is ultimately responsible for ensuring that its Project meets the technical requirements specified in this RFP, and if the parties reach agreement on the ESSA, the requirements specified in the ESSA.

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 Energy Storage Services Agreement

3.8.1 The agreement for the Proposal selected under this RFP will be in the form of the ESSA, attached as Appendix L.

3.8.2 If selected, any Affiliate Proposer will be required to enter into the ESSA with the Company.

3.8.3 If selected, the Hawaiian Electric Development Team will not be required to enter into an ESSA with the Company. However, the Hawaiian Electric Development Team will be held to the proposed modifications to the ESSA, if any, it submits as part of the Hawaiian Electric Proposal in accordance with Section 3.8.6. Moreover, the Hawaiian Electric Proposal will be held to the same performance levels and milestones set forth in the ESSA to the same extent as all Proposers, as attested to in the Hawaiian Electric Proposal's Appendix G, Attachment 1, "Hawaiian Electric Development Team Certification" submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility of a Company-owned facility, the Hawaiian Electric Proposal will be permitted to adjust operational requirements and performance levels with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to an ESSA with PUC approval.

3.8.4 In general, under the ESSA, payment to the Seller consists of a Lump Sum Payment component to cover the costs of the Project. In return, the ESSA gives the Company exclusive rights to schedule and control the energy storage facility. The monthly Lum Sum Payment is subject to adjustment based on the availability and performance of the Project.

3.8.5 The Performance Standards identified in Section 2.1 of this RFP and Attachment B, Section 3 of the ESSA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Project'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 included in the ESSA are non-negotiable. Additionally, as stated in Section 3.13.2 below, Proposers shall not propose an amount lower than that set forth in the ESSA for Development Period Security and Operating Period Security. Proposers may propose modifications to other sections of the ESSA 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 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 ESSA will be evaluated as a non-price evaluation criterion as further described in Section 4.4.2. In order to facilitate this process, the Company will make available an electronic version of the model agreement on the RFP website and through the Electronic Procurement Platform for the RFP. Any proposed modifications to the ESSA 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 agreement. 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.

3.8.6 Proposals that do not include specific proposed modifications to the attached ESSA will be deemed to have accepted the ESSA in its entirety.

3.9 Pricing Requirements

3.9.1 Proposers are responsible for understanding the terms of the ESSA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy, assuming that all applicable federal tax credits are received, assuming that the Company will accept any proposed change to the ESSA).

3.9.2 Escalation in pricing over the term of the ESSA is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission). Pricing information contained anywhere else in a Proposal will not be considered during the evaluation process.

3.9.4 The Proposer's Response Package must include the following prices for each Proposal:

For IPP or Affiliate Proposals:

- **Lump Sum Payment ($/year):** Payment amount for exclusive rights to schedule and control the Project. Payment will be made in monthly increments.

For the Hawaiian Electric Proposal:

- **Total Project Capital Costs ($/year):** Total capital costs for the Project (identified by year).

- **Annual O&M Costs ($/year):** Initial year operations and maintenance costs, annual escalation rate.

- **Annual Revenue Requirement ($/year):** Annual revenue requirements (ARR) calculated for each year.

Additional description and detail on the Total Project Capital Costs, Annual O&M Costs, and ARR for the Hawaiian Electric Proposal is located in Appendix G.

3.10 Project Description

3.10.1 RESERVED

3.10.2 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 ESSA approval process. If requested, such information would be provided to the PUC, Consumer Advocate, and Company pursuant to a protective order in the docket.

3.10.3 The Proposer agrees that no material changes or additions to the Project 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 that any Proposal information 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 Project Site

All Proposals must be sited on a pre-determined Company-controlled Project Site, referred to as the Akoni Pule Site. The available area is approximately 1.207 acres located along Akoni Pule Highway in Hawi Village, North Kohala, and is further

described in Appendix F. Additional details regarding the specific interconnection requirements for a Project sited at the Akoni Pule Site are described in Appendix H.

The selected Proposer will be required to agree to specific terms and conditions for such use as provided for in Attachment X of the ESSA. Provisions providing for access to the site during construction and thereafter, during commercial operations, will be subject to current Company safety and security policies and procedures, including any additional restrictions due to COVID-19. Physical, communication, and internet security will be required consistent with Company policy. Additional measures may be required to limit or eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures, and requirements may change as necessary during the term of the ESSA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules, or regulations. Additional information regarding the site can also be found in Appendix F.

The Company will endeavor to provide as much information as possible to interested potential Proposers, and if conditions related to the ongoing health pandemic do not allow for an in-person visit early in the bid submittal period, the Company will provide additional information which may include photographs and/or video. Information on a potential in-person site visit or any additional information will be posted on the Company's RFP website.

3.12 Confidentiality

3.12.1 Each prospective Proposer must submit an executed NDA in the form attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1, Table 1. The form of the NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed NDA will be considered. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should 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 NDA, the Company reserves the right to share any information, even if marked confidential, with 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 to Company in response to this RFP, certify that such Proposer has not shared its Proposal, or any part thereof, with any other Proposer of a Proposal responsive to this RFP. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Notwithstanding such certification, if the Company observes or receives evidence from a Proposer that appears to place one or more Proposers in violation of this RFP Section 3.12.2, e.g., a representative from one Proposer uses the same information in multiple Proposals submitted by different Proposers (e.g., individual Proposers with different names, joint ventures, etc.), Company

will seek additional information and clarification from such Proposer(s) to determine whether such a violation does in fact exist (and, if so, in consultation with the Independent Observer, whether disqualification of one or more Proposals is appropriate).

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

3.13 Credit Requirements Under the ESSA

3.13.1 The Proposer with whom the Company enters into an ESSA must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's as required and set forth in Article 14 of the ESSA. Cash, a parent guaranty, or other form 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 ESSA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the ESSA.

3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's to guarantee Proposer's payment of interconnection costs for all relocation costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the ESSA.

3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the ESSA.

Chapter 4: Evaluation Process and Evaluation Criteria

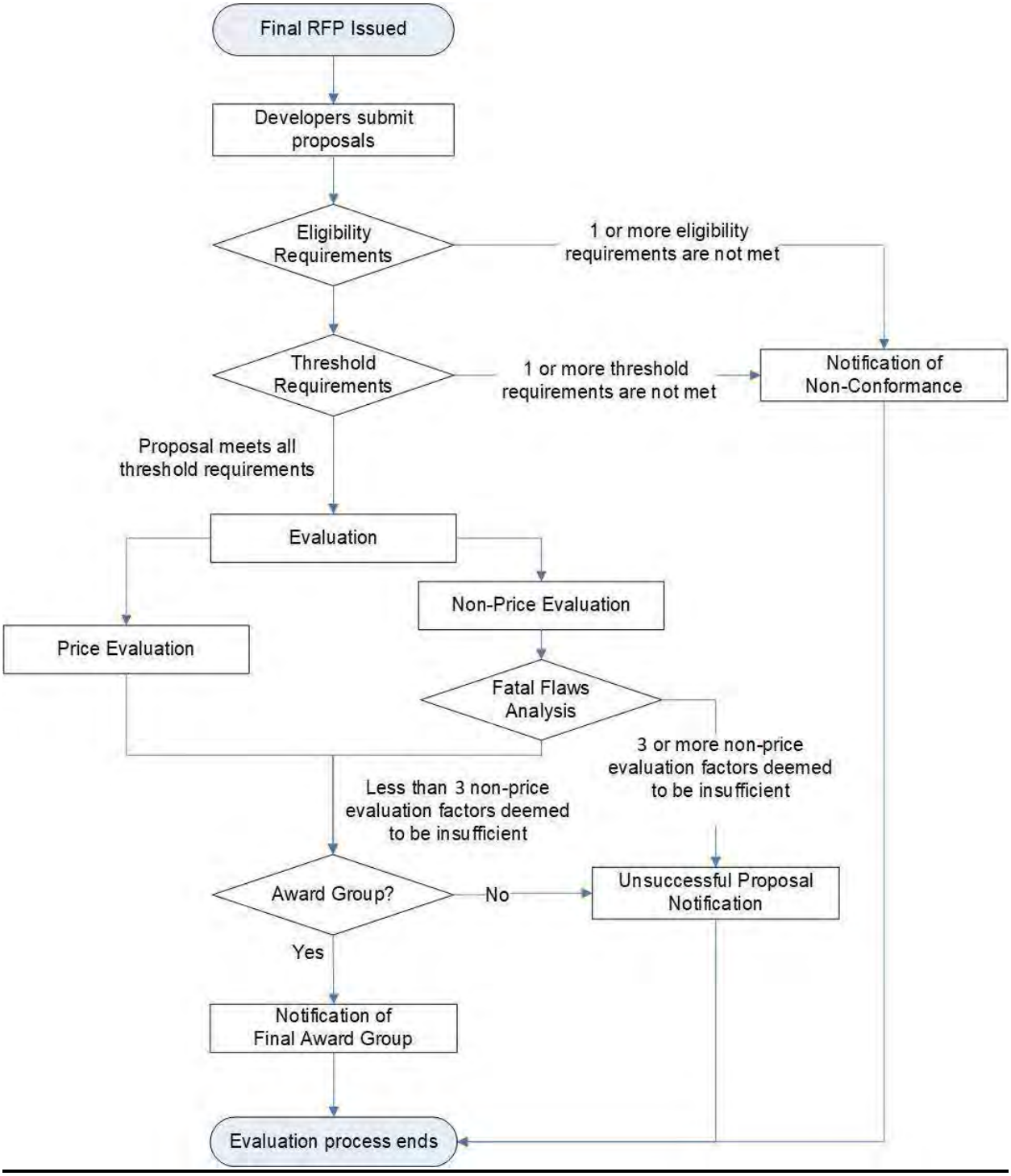
4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will 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 will be eliminated based on failure to meet either Eligibility or Threshold Requirements.[10] 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.[11] Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a price and non-price evaluation process, ultimately ending in a single Proposal being selected to the Final Award Group.

[10] 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 Eligibility Requirements.
[11] The initial request will be offered 3 business days to cure. Succeeding inquiries on the deficiencies will be offered cure periods deemed sufficient by the Company and Independent Observer.

Figure 1 – Evaluation Workflow



4.2 Eligibility Requirements Assessment

Upon receipt of the Proposals, each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements.

- The Proposal, including required uploaded files, must be received on time via the Electronic Procurement Platform.
- The Proposal Fee must be received on time on or before the Proposal Due Date.[12]
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized agent of the Proposer.
- The Proposers must fully execute the NDA and any other documents required pursuant to this RFP.
- The Proposer must provide a Certificate of Vendor Compliance from the Hawai‘i Compliance Express that is current (dated and issued no earlier than 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 Proposal must be sited on the Project Site.
- The Proposal must be for a BESS connecting to the prescribed 34kV Point of Interconnection.
- The BESS must be able to be charged from the grid at the direction of the Company as described in Section 1.2.1.
- Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.
- Proposals must specify a GCOD no later than September 19, 2025.
- Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- The Proposal must include a written attestation that states the Proposer will fulfill all requirements set forth in Section 5.3.1.
- The aggregated cost of the bid price of the Proposal and estimated cost of the Company’s microgrid project must not exceed the estimated value of a traditional second wires path solution as described in Section 1.

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

[12] Proposal Fees will not be required for Hawaiian Electric 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. **Performance Standards:** The proposed Project must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in Section 2.1 of this RFP and Attachment B, Section 3 of the ESSA. Proposals should include sufficient documentation to support the stated claim that the Project 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. **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is a viable technology for an energy storage project for the purposes of a microgrid of a similar MW scale for large commercial operations (ex. military bases, educational institutions, business facilities, utility plants) 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 ESSA) 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.

3. **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) energy storage project for the purposes of a microgrid of a similar MW scale for large commercial operations (e.g., military bases, educational institutions, business facilities, utility plants), 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.

4. **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 ESSA 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 ESSA negotiations. The Company has determined that for purposes of FASB ASC 842, the energy storage facility will be treated as a lease. The Company would evaluate the amount of the lease that would be recorded based on the proposal submitted.

5. **Technical Model:** Developing an accurate and functional facility technical model is imperative to commencing the Interconnection Requirement Study phase of the process. This criterion is to check whether Proposers have provided the required models per Appendix B, Attachment 4, as well as documentation that Proposers have tested their models under all scenarios prescribed in Appendix B, Attachment 3. Additionally, as required by Section 4.2, Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.

4.4 Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Non-price criteria will account for fifty percent (50%) of the total score and price-related criteria will account for fifty percent (50%) 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 Evaluation of the Price Related Criteria

For the price analysis, a total of 500 points will be awarded. The eligible Proposal with the lowest bid price will receive 500 points. All other eligible Proposals will receive points based on a proportionate reduction using the percentage by which the eligible Proposal's Lump Sum Payment exceeds the lowest Lump Sum Payment. For example, if a Proposal's value is ten (10%) higher than the lowest Lump Sum Payment, the Proposal will be awarded 450 points (that is, 500 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal.

4.4.2 Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated on each of the eight (8) non-price criteria categories set forth below to assess their merit in the general areas of Project development feasibility and operational viability. The non-price score accumulated after evaluation of such criteria is subject to reduction based on a Previous Performance evaluation described in Section 4.4.2.2 below.

4.4.2.1 Non-Price Criteria and Scoring

The non-price criteria are as follows and further described below:

1. State of Project Development and Schedule
2. Performance Standards
3. Environmental Compliance and Permitting Plan
4. Experience and Qualifications
5. Financial Strength and Financing Plan
6. ESSA Contract Proposed Modifications
7. Carbon Emissions
8. Technical Model

Each of the first two criteria – State of Project Development and Schedule and Performance Standards – will be weighted twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable). A score of 3 means that a Proposal meets the minimum standard for that criterion.

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. **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 tax-related safe harbor (if applicable) and reach their GCOD specified, including identification of risks and schedule assumptions. Schedules must be created in Microsoft Project and submitted in .mpp file format and 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 tax-related 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 each 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. Proposals that do not appear to include all applicable items from Appendix H that are reasonable for a project of the size proposed may result in a lower ranking for this criterion as it may reflect risk that the Project cannot 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. The Company may require an attestation from the Proposer that they understand their proposed interconnection costs do not appear accurate to the Company and should the Proposer continue and is selected that the Proposer shall be responsible for the final determination of interconnection costs whether or not it is higher than what the Proposer has included in its Proposal.

2. **Performance Standards:** The proposed Project must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the ESSA. 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 ESSA 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 Project 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 Project. Preference will also be provided on facilities that offer additional capabilities.

3. **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.

The Proposal's non-price score for this requirement will reflect the lower of either the Environmental Compliance sub-score or the Permitting Plan sub-score.[13]

4. **Experience and Qualifications –** Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining (including all components of the project) energy storage projects for the purposes of a microgrid of a similar MW scale for large

[13] Two different teams will assess the Proposals for this non-price criteria – one focusing on the environmental impacts of the Proposal and the other on the permitting plans and activities of the Proposer. Each team will contribute a sub-score, and the overall score for this criterion will be based on the lower of the two sub-scores.

commercial operations (ex. military bases, educational institutions, business facilities, utility plants) of a 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 energy storage project for the purposes of a microgrid with grid-forming capabilities of a similar MW scale for large commercial operations 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.

5. **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.

6. **ESSA Contract Proposed Modifications –** Proposers are encouraged to accept the contract terms identified in the model ESSA in its entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model ESSA without edits, 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.

7. **Carbon Emissions** – Proposals should provide responses to the Carbon Criteria Questions provided in Section 2.15 of Appendix B, which will be used to score each Project depending on Project-specific design, siting, procurement, construction and

O&M information likely to impact the Project's lifecycle GHG emissions. In line with carbon neutral goals set forth by Hawaiian Electric[14] and the State of Hawai'i,[15] preference will be given to Proposers expected to have lower lifecycle GHG emissions based on the responses to the Carbon Criteria Questions.

8. **Technical Model** – Developing an accurate and functional facility technical model is imperative to the successful completion of the IRS, the accuracy of study results, and, by extension, the reliability of the System. Models must be accurate representations of the Facility and its operation. The Company validates the quality of the models and acceptability for the IRS though a model checkout process. Proposers should have developed, executed, tested, and documented results of their models prior to submitting a proposal. This criterion is to evaluate the extent to which Proposers have met the requirements in Appendix B, Attachment 3. Scoring will be based on the Proposer's documentation, which are the result of self-testing and benchmarking documentation, demonstrating the model's ability to meet the requirements of Appendix B, Attachment 3. Preference will be given to Proposals for which the accompanying documentation show they are able to meet the requirements and achieve the expected results for all scenarios proposed in Appendix B, Attachment 3.

4.4.2.2 Previous Performance Evaluation

An overall Previous Performance scoring criterion will be employed in this RFP. Based on any underperformance experienced within the past five (5) years from any Proposer, its parent company, or an affiliate of such Proposer, the Company will deduct points from the Proposer's total non-price score based on the infraction. Unlike the 8 non-price criteria above that generally score each project on a scale of 1 to 5, the Previous Performance scoring criteria will deduct points from the total non-price score. The total deductions could range from 0 to 20 points. If a Proposer has not been awarded a project by the Company or does not have an existing or past contract with the Company within the past five years, no points will be deducted.

The Company will evaluate Proposers (which for purposes of the Previous Performance criterion, includes the Proposer, its parent company, or any affiliate) for any past underperforming infractions listed below. For each of the following infractions identified for any of the Proposer's existing or past projects, points will be deducted, up to a maximum of ten (10) points, from the Proposer's total non-price score in this RFP. Any infraction caused by force majeure will not be counted into the deductions.

1. Proposer declined a Priority List or Final Award Group invitation. [1 point deduction]
2. Proposer withdrew from an awarded project after accepting a Final Award Group invitation. [2 point deduction]
3. Proposer terminated an executed contract, except for a termination due to a Company-event of default, including declaring the contract null and void, except

[14] See https://www.hawaiianelectric.com/about-us/our-vision-and-commitment/climate-change-action.
[15] See HRS § 225P-5.

for a null and void declaration due to an unfavorable PUC order, which was not reinstated or otherwise superseded by a subsequent contract. [2 point deduction]

4. Termination of an executed contract by Company due to a Proposer-, parent company-, or affiliate-event of default, unless such default was cured by the contracting Proposer, parent company, or affiliate in an expeditious manner to the satisfaction of the Company. [2 point deduction]
5. Proposer missed the Guaranteed Commercial Operations Date under an existing or past contract. [1 point deduction for missing GCOD by more than 10 days up to 3 months, 2 point deduction for missing GCOD more than 3 months up to 6 months, and 3 point deduction for missing GCOD by more than 6 months.]
6. Proposer missed one or more contract Milestones or Seller's Conditions Precedents, other than GCOD, by more than 10 days. [1 point deduction]
7. Proposer paid liquidated damages during the development phase of the project. [0.5 point deduction]
8. Proposer breached its representations and warranties under the contract. [0.5 point deduction]
9. Proposer failed to remedy one or more violations of the Company's performance standards during operations within 6 months. [0.5 point deduction]
10. During the operating term of the contract, Proposer paid liquidated damages or failed to meet one or more performance metrics, warranties or guarantees (NEP, EAF, EFOR, MPR, Unit Trips, etc.) for more than one reporting period. [0.5 point deduction]

In addition to the above-referenced infractions, ten (10) points shall be deducted from any Proposal's non-price score in the event the Proposer, its parent company, or an affiliate of the Proposer is involved in any pending litigation in which the Proposer, parent company, or affiliate has made claims against the Company or in which the Company has made claims against the Proposer, parent company, or affiliate, which is not subject of a settlement agreement that is currently in effect. This ten-point deduction for involvement in pending litigation is not subject to the maximum of ten (10) points that may be deducted for the other Previous Performance criterion delineated above. As such, a total of up to twenty (20) points may be deducted from a Proposal's non-price score for infractions of Previous Performance criterion.

During the non-price criteria evaluation, should the Company identify any Previous Performance infractions, including the identification of pending litigation, the Company will notify Proposers of any potential deductions and provide them with the opportunity to respond with a written explanation within five (5) business days. The Company, in consultation with the Independent Observer, will review the explanations and determine whether there were instances outside of the Proposer's control or otherwise excusable. The Company will finalize deductions with the objective of determining the risk of future under/non-performance based on past experiences.

4.4.2.3 Non-Price Scoring

The resulting non-price score will be the sum of the scores for each of the individual non-price criteria minus any points deducted for underperformance infractions based on the

Previous Performance scoring criterion. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each evaluation category with the highest total non-price score will receive 500 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 500.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level for three (3) or more 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.

4.5 Selection of the Final Award Group

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Eligible Proposal using the 50% price-related criteria / 50% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both price and non-price scores described above, will result in a ranking of Proposals.

Based on the results of this Evaluation and review with the Independent Observer, the Company will select a single Proposal to the Final Award Group from which to begin contract negotiations. All Proposers will be notified at this stage of the evaluation process whether their Proposal has been awarded.

Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of an ESSA.

Up to the selection announcement of the Final Award Group, should any new legislation for renewable energy be enacted that would offer developers further tax credits, the Company reserves the right to require Proposers to provide a downward pricing adjustment reflective of such savings for the benefit of the Company's customers.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Final Award Group, the Company reserves the right, at any time prior to submission of the ESSA 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 ESSA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a Proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a Proposal, including failure to reach agreement on the ESSA, 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 determine if another Proposal should be selected.

Chapter 5: Post Evaluation Process

5.1 Project Interconnection Process

At Proposal Submission

Development of accurate and functional facility technical model is imperative to the successful completion of the IRS, the accuracy of study results, and, by extension, the reliability of the System. Models must be accurate representations of the Facility and its operation. The Company validates the quality of the models and acceptability for the IRS though a model checkout process. Proposers should have developed, executed, tested, and documented results of their models prior to submitting a proposal.

A complete package of Project Interconnection Requirement Data Request worksheets, Project single line and three line diagrams, models (see Appendix B, Attachment 3), and documentation prescribed in Appendix B, Attachment 4, including a report, with plots, documenting that Proposers have tested their models under all scenarios, is required upon Proposal submission. See Section 2.11 of Appendix B. Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.

The models required are set forth in Appendix B, Attachment 4. PSSE User Defined models and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the ESSA's performance requirements. These must be checked for functionality by the Proposer or its vendors and consultants prior to submission to the Company (see Appendix B, Attachment 3). Similar and fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company.

Post Selection to Final Award Group

Within 30 days after selection of the Final Award Group, final submissions, to incorporate any updates, shall be made for the Project data and modelling submittals described above.

The Company will inspect the data packages for general completeness. For any incomplete submission, a list of missing or non-functional items will be provided. The Proposer will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove the Proposal from being selected to the Final Award Group or may terminate ESSA negotiations or executed ESSA, if their submission requirements are deemed incomplete for the lack of requested model. The Proposal must be complete to begin the IRS process. A formal, technical model checkout will be deferred until a later date when IRS Agreements and

deposits are in place, so that the expert subject matter work can be provided by the Company's IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for the selected Project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for the Project and (b) any considerations that are specific to the Project and location.

The technical model checkouts will be conducted first. Upon identification of any functional problems or deficiencies, corrective action shall be taken immediately and on an interactive basis so that the problems or deficiencies can be resolved within 15 Days, including re-submission of data and updated models, or the Project shall be deemed withdrawn. At the discretion of the Company and provided that there is a demonstration of good faith action to minimize delay that would affect the schedule for IRS analyses, a second round of model checkout and problem solving may proceed. Thereafter any notice that the Project is deemed withdrawn for lack of completeness shall be final. Subject to consultation with the Independent Observer, failure to provide all requested material within the time(s) specified, or changes to the data provided after the due date(s), shall result in elimination from the Final Award Group.

The Proposer shall be responsible for the cost of the IRS, under separate agreement. The overall IRS will provide information including, but not limited to, required Interconnection Facilities for a particular Project and any required mitigation measures. The Proposer will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities. Upon reviewing the results of the IRS, the Proposer will have the opportunity to not move forward with the Project and therefore not complete execution of the ESSA in the event that the interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal (see Section 2.3 of the ESSA).

Proposers should assume, at a minimum, a 12-month process for the completion of the IRS, and the execution and filing of the ESSA for approval. Such assumption is dependent on, among other factors, working and finalized models being timely provided for study by Proposers in accordance with the requirements of this Section 5.1.

5.2 Contract Negotiation Process

Within five (5) business days of being notified by the Company of its intent to enter into contract negotiations, the Proposer selected to the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether it intends to proceed with its Proposal. The awarded Proposer will be required to keep its Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. The Company intends to execute and file the ESSA with the PUC for approval upon completion of the Contract Negotiation Process.

5.3 Final Award Group Commitments

5.3.1 Community Outreach and Engagement / Cultural Resource Impacts

The requirements described in this Section and Section 27.17 of the ESSA (Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by the Proposer. Community outreach for the overall microgrid project will be managed by the Company. The selected Proposer will be required to fully cooperate with and assist the Company with community outreach efforts. This includes participating in all public meetings in which the Company requests selected Proposer's attendance, such as large community meetings, roundtables, 1:1 meetings, etc. The selected Proposer will also be required to promptly address any community concerns or issues regarding the Project BESS. The selected Proposer is expected to not only listen to community concerns, but thoughtfully consider any actions (ex. developing a list of pros and cons) and mitigate issues when necessary.

The Company will develop a cultural resource impact plan for this microgrid project. The Company has retained ASM Affiliates as a consultant to conduct a Field Inspection and Cultural Impact Assessment. The selected Proposer will be required to comply with any requirements set forth in the cultural resource impact plan or by the Company with regard to the Project BESS. The selected Proposer will be responsible for obtaining any necessary permits required in the cultural resource plan as instructed by the Company. Additionally, the selected Proposer will be required to fully cooperate with the Company and assist with any cultural resource outreach efforts.

The Company will publicly announce the Final Award Group no more than 7 business days after the notification is given to the Proposer who is selected to the Final Award Group. The selected Proposer shall not disclose its selection to the public before the Company publicly announces the Final Award Group selection.

Within 5 business days of selection to the Final Award Group, the Proposer shall provide the Company with the information identified in Appendix B. The Company will post this information on the North Kohala Microgrid page on the Company's website.

5.4 Greenhouse Gas Emissions Analysis

The Proposer whose Proposal is selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or Company's consultant(s) upon request, all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support of a PUC application for approval of the ESSA 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 ESSA 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 energy storage services as applicable under the ESSA is reasonable in light of the potential for GHG emissions, and whether the terms of the ESSA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval of ESSA

Any signed ESSA resulting from this RFP is subject to PUC approval as described in the ESSA, including Article 24 thereof.

5.6 Project In-Service

In order to facilitate the timely commissioning of the Project 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 Project, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire Project must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the Proposer and ready for operation prior to Company testing.

If approved drawings are not available, or if the Project is otherwise not test ready as scheduled, the Company will attempt to accommodate adjustments to the schedule taking into account available personnel and other project obligations. The Proposer will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to ESSA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the ESSA.

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix A – Definitions

Hawaiʻi Electric Light

"Affiliate" means 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.

"Allowed Capacity" has the meaning set forth in the ESSA.

"Back-up Power" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Battery Energy Storage System" or "BESS" has the meaning set forth in the ESSA.

"BESS Contract Capacity" has the meaning set forth in the ESSA.

"Black-start" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 Hawaiian Electric Proposal Option.

"Code of Conduct Procedures Manual" or "Procedures Manual" means the manual being submitted to 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 Hawaii Electric Light RFP process. The Procedures Manual is attached as Appendix C to this RFP.

"Commercial Operations" has the meaning set forth in the ESSA.

"Community Outreach Plan" is a community outreach and communication plan described in Section 4.3 of the RFP and Section 27.17 of the ESSA.

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

"Company-Owned Interconnection Facilities" has the meaning set forth in Section 1.a of Attachment G of the ESSA.

"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 in Docket No. 03-0372, 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.

"Development Period Security" has the meaning set forth in Section 14.2 of the ESSA.

"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 this RFP.

"Energy Storage Services Agreement" or "ESSA" means the Model Energy Storage Services Agreement attached as Appendix L to this RFP.

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

"Facility" has the meaning set forth in the ESSA.

"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 Proposer selected by the Company which the Company will begin contract negotiations with, based on the results of the Company's evaluation.

"Frequency Regulation" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 on which a Facility first achieves Commercial Operations.

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

"Hawai‘i Electric Light System" or "System" means the electric system owned and operated by Hawai‘i Electric Light on the island of Hawai‘i (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.

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

"Hawaiian Electric Proposal" 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.

"Hawaiian Electric Development Team" means agents of the Company who develop Self-Build proposals.

"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.

"Levelized Benefit" or "LB" means a calculation ($/MWh) used for comparison of Proposals based on information provided in the Proposal submission in this RFP.

"Lump Sum Payment" has the meaning set forth in the ESSA. It may also be referred to as a monthly Lump Sum Payment to reflect the portion of the payment made each month.

"Maximum Rated Output" has the meaning set forth in the ESSA.

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

"MW" means megawatt.

"MWh" means megawatt hour.

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

"NEP" means Net Energy Potential.

"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 ESSA.

"Performance Standards" means the various performance requirements and attributes for the operation of the Facility to the Company as set forth in Section 2.10 of Appendix B, as such standards may be revised from time to time pursuant to Article 22 of the ESSA, and as described in Chapter 2 of this RFP.

"Point of Interconnection" or "POI" has the meaning set forth in the ESSA.

"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.

"Project" means a Facility proposed to Hawai'i Electric Light by a Proposer pursuant to this RFP.

"Proposal" means a proposal submitted to Hawai'i Electric Light by a Proposer pursuant to this RFP.

"Proposal Due Date" means the date stated in RFP Schedule, Table 1, Section 3.1 for the Hawaiian Electric Proposal and the 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 Hawai'i Electric Light 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.

"Rated Active Power Capacity" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Rated Energy Capacity" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 1, Section 3.1 of this RFP.

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

"Seller" means the entity that the Company is contracting with, as set forth in the ESSA.

"Seller-Owned Interconnection Facilities" has the meaning set forth in the ESSA.

"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.

"System Impact Study" means a study analyzing the steady-state and dynamic impacts on system power flow, voltage, frequency and transient stability. The analyses includes compatibility of design, construction and operation of the Project with Company engineering standards and operating practices.

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

"Voltage Regulation" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Updated Framework" means the updated Framework for Competitive Bidding which was drafted to be more inclusive of various technologies, and filed on February 12, 2021 in Docket No. 2018-0165.

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

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

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

Hawaiʻi Electric Light

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, 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 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

To access the RFP event, the Proposer must register as a "Supplier"[1] on Sourcing Intelligence (Electronic Procurement Platform). One Proposal may be submitted with each Supplier registration.

If a Proposer is already registered on Sourcing Intelligence, the Proposer may use their current login information to submit their Proposal. Proposers are asked to refer to their chosen unique company name throughout when referring to it in text responses.

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

[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).

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. 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.

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 User Information (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 the 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 their respective Proposal Due Date (RFP Section 3.1, Table 1).

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.pdf. (example: AceEnergy.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 AceEnergy_2.5_SiteMap.kmz"). Such additional files must follow the naming convention below:
    a. File names must include, in order, Company Name, Appendix B section number, and a file descriptor, as shown in the example file name below:
    AceEnergy_2.5_SiteMap.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).

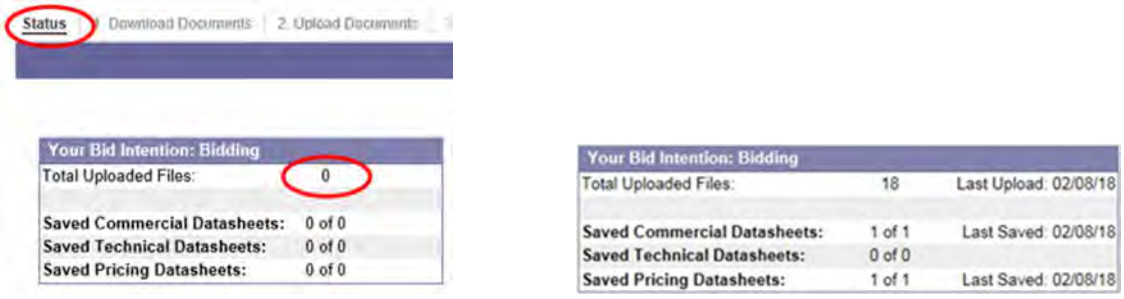
6. Proposers are strongly encouraged to start early and avoid waiting until the last minute to submit the required information. Proposers are allowed to add, modify, and/or delete documents that have been previously submitted any time prior to the event close deadline. For clarity, it is the Proposer's 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 event. 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 SUMMARY TABLE

To be filled out completely by IPP or Affiliate Proposers:

1	**Proposer Name (Company Name)**	
2	**Parent Company/Owner/Sponsor/Business Affiliation/etc.**	
3	**Project Name**	
4	**Lump Sum Payment** ($/Year)	
5	**Energy Storage Capability for the Facility** (MW and MWh)	
6	**The Proposal hereby certifies that Proposer will fulfill all Community Outreach and Engagement / Cultural Resource Impacts requirements identified in Section 5.3.1 of the RFP?** (Yes/No)	
7	**Proposal Guaranteed Commercial Operations Date** (MM/DD/YYYY)	
8	**The Proposer hereby certifies that the Project meets all performance attributes identified in this Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA?** (Yes/No)	
9	**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)	
10	**The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the ESSA.** (Yes/No)	
11	**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)	
12	**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)	
13	**Does the Proposer accept the contract terms identified in the ESSA in its entirety?** (Yes/No)	
13a	If the response to item 13 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.	

To be filled out completely by Hawaiian Electric Proposers:

1	**Proposer Name (Company Name)**	
2	**Parent Company/Owner/Sponsor/Business Affiliation/etc.**	
3	**Project Name**	
4	**Energy Storage Capability for the Facility** (MW and MWh)	
5	**The Proposal hereby certifies that Proposer will fulfill all Community Outreach and Engagement / Cultural Resource Impacts requirements identified in Section 5.3.1 of the RFP?** (Yes/No)	
6	**Proposal Guaranteed Commercial Operations Date** (MM/DD/YYYY)	
7	**The Proposer hereby certifies that the Project meets all performance attributes identified in Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA?** (Yes/No)	
8	**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)	
9	**The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the ESSA.** (Yes/No)	
10	**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)	

11	**Year (YYYY)**	**Project Capital Cost ($)**
12	**Year (YYYY)**	**O&M Cost ($)**
13	**Year (YYYY)**	**Annual Revenue Requirement ($)**

Extend the table for questions 11, 12, and 13 for as many years as needed up to the 10-year ESSA term.

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:

- Document signed by a representative for the Proposer **authorizing the submission** of the Proposal
- Fully executed **Mutual Confidentiality and Non-Disclosure Agreement ("NDA")** (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 applicable **Project Interconnection Data Request worksheet** for the proposed technology and **project single line 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 shall be submitted within the respective timeframes specified in Section 5.1 of the RFP.[2] (See Section 2.11.1 below)
- [For Hawaiian Electric Proposals Only] **Hawaiian Electric Proposal Team Certification Form**. See Appendix G Attachment 1.
- [For Hawaiian Electric Proposals Only] **Revenue Requirements Worksheets** that support the annual revenue requirements estimates shall be submitted. A starter revenue requirements template file can be requested by the Hawaiian Electric Proposal Team via email to the RFP Email Address or through the PowerAdvocate Messaging function once the RFP event opens. The revenue requirements worksheets submitted will be modified to reflect the details of the Project's Proposal. All assumptions used will be reflected in an assumptions input tab.

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.

[2] If the Models, lists, respective files and complete documentation are not submitted with the Proposal upload, they shall be submitted via PowerAdvocate's Messaging as attachments within the respective timeframes specified in Section 5.1 of the RFP.

2.2.3 **Pricing information.** Pricing information must be filled out in the Section 2.0 Proposal Summary Table above. Provide any 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:

- Technology Type (i.e. lithium ion battery)
- Maximum Rated Output, as defined in the applicable contract (MW)
- Discharge Duration at Maximum Rated Output (hours)
- Storage Energy Capacity (MWh) available at the point of interconnection (i.e. BESS Contract Capacity as defined in the appliable contract)
- Operational Limitations, such as, but not limited to: energy throughput limits (daily, monthly, annually), State of Charge restrictions (min/max SOC while at rest (not charging/discharging)), etc. Proposed Operational Limits cannot be in conflict with the energy discharge requirement in Section 1.2.7 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 ESSA. 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 [For IPP and Affiliate Proposals] Identify all **estimated development and capital costs** for, at a minimum:

- Equipment
  - Identify the manufacturer and model number for all major equipment
- Construction
  - Identify and breakdown what is included in this category and any assumptions made
- Engineering
- Seller-Owned Interconnection Facilities
  - Identify and breakdown what is included in this category and any assumptions made
- Land
- Annual O&M
- 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 ESSA, as those provisions reflect the benefit the Company seeks from the Project's storage functionality.

[For Hawaiian Electric Proposals Only] Identify all **estimated development and capital costs** for, at a minimum:

- Facility (including any generation and storage components)
- Outside Services
- Interconnection
- Overhead Costs
- Allowance for Funds Used During Construction
- Annual O&M
- 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 ESSA, 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 Energy Storage Services Agreement or any other applicable project agreements and State of Hawai'i Public Utilities Commission approval of the Energy Storage Services 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 AND FINANCIAL COMPLIANCE

2.4.1 If Proposers elect to propose modifications to the ESSA, **provide a Microsoft Word red-line version of the ESSA** 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 ESSA with their Proposal submission will be deemed to have accepted the ESSA in its entirety. If no modifications are proposed, please state in this section "no modifications to the ESSA".

As set forth in RFP Section 3.8.5.1, proposed modifications to the ESSA 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.

2.5 AKONI PULE SITE INFORMATION

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

- Proposed location of all equipment
- Proposed location of all facilities on the Akoni Pule Site, including any proposed line extensions
- Site boundaries (if the proposed Project does not cover the entire Akoni Pule Site)

2.5.2 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)
- Description of the rationale for the interconnection route

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
- 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
  - Noise
  - Roadways and Road and Air Traffic
  - Utilities
- Socio-Economic Characteristics
- Aesthetic/Visual Resources and Impact
- 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 RESERVED

2.8 WEBSITE INFORMATION

2.8.1 Proposer selected to the Final Award Group must provide the below table of information to the Company as described in Section 5.3 of the RFP to provide communities Project information that is of interest to them in a standard format.

PROJECT SUMMARY

*	Proposer Name (Company name)	
*	Parent Company/Owner/Sponsor/Business Affiliate/etc.	
*	Project Name	
*	Net AC Capacity of the Facility (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)

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 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. See Article 5 of the ESSA.

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.

2.10.2 Capability of **Meeting Performance Standards**. The proposed Facility must meet the performance attributes identified in Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA. 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 energy storage inverters 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 ESSA.

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 **Short-Term Over-Current**: Provide the facility's short-term over-current capability to supply inrush currents during energizing of transformers and distribution feeders and starting auxiliary motors of conventional power plants.

2.10.9 **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.

2.10.10 **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. 11 **Frequency Response:** Provide the facility's frequency response characteristics as required by the ESSA, including time of response, tunable parameters, alternate frequency response modes, and means of implementing such features.

2.10.12 **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

2.10.13 **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.

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

2.10.15 **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.

2.10.16 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.

2.10.17 **Energy Storage performance standards:** 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

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 4 from the "1. Download Documents" tab.

2.11.2 Provide the completed **Project Interconnection Requirement Study Data Request worksheet** with the Proposal submission. 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 (storage) MSExcel files. Also provide all **project diagram(s)** with the Proposal submission. **Models for equipment and controls, list(s)** identifying components and **respective files** (for inverters and power plant controller), and **complete documentation with instructions** shall be submitted within the timeframes specified in Section 2.3.2 of the RFP.[2] 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 this 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 energy storage projects for the purposes of a microgrid of a similar MW scale for large commercial operations (ex. military bases, educational institutions, business facilities, utility plants)** 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)**	**Storage Technology**	**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)
  - Cultural Resource implications and mitigation activities
  - Community outreach and engagement activities

  - Energy resource assessment
  - Financing
  - Engineering
  - Procurement
  - Facility construction including construction management events
  - Applicable reporting milestone events specified in the ESSA
  - Testing
  - Interconnection (including engineering, procurement, and construction)
  - Commercial Operations Date
  - All other important elements outside of the direct construction of the Project
- The project schedule must be created in Microsoft Project and submitted in a .mpp file format.
- 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 ESSA and/or other agreements.

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

- Identification of contracting/subcontracting plans
- Modular construction
- Safety plans[3]
- 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.

2.15 CARBON EMISSION QUESTIONNAIRE

2.15.1 Answer the following Carbon Criteria questions. To mitigate the possibility of providing responses to questions that are optimistic or would result in a better score for the Carbon Criteria questions, please provide conservative answers where answers are unknown or uncertain. Guidance for providing conservative answers has been provided for each question. If a question or Category's questions are not applicable to the Project, please leave blank. For instance, if the Project generation technology does not include solar, leave questions in Category "3e. Procurement – Solar" blank.

[3] 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.

Category	#	Question	*Answer Choices*
1. Siting	1	Please provide the Project's expected annual production capacity per developed Site area in units of MWh/yr/m^2. *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected annual production capacity per developed Site area in units of MWh/yr/m^2.*	*Numerical write in*
	2	What is the expected distance from the Project's generation/storage location to the point of interconnection? *If the answer to this question is unknown or if there are multiple possibilities, please conservatively provide the furthest expected distance from the Project's generation/storage location to the point of interconnection*	*Numerical write in*
	3	What fraction of the Project's Site is a "greenfield", e.g. has not been previously developed? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected "greenfield" fraction.*	*Numerical write in*
	4	What fraction of the Project's Site requires grading? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction.*	*Numerical write in*
	5	What is the expected fraction (in terms of CAPEX) of infrastructure being reused (includes roads, buildings, trenches, pads) for the Project? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
2. Procurement	6	What fraction of concrete, fencing, gravel and other roadway materials used for the Project will be locally sourced on island? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	7	If available, please provide manufacturer-specific carbon footprint for major components and feedstock, along with supporting documentation. For power generating components, such as solar panels/wind turbines/biomass combustor, please provide the carbon footprint in units of kg CO_2e/kWh. For carbon feedstock, please provide in units of kg CO_2e/MMBtu energy content. *If this information is unavailable, please answer "Not available at this time".*	*Numerical write-in and supporting documentation*
	8	What fraction of roadway materials and gravel used for the Project will be made from recycled materials?	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.	
3a. Procurement – Biofuels ***please answer only if the project includes biofuels-based generation***	9	What fraction of the biofuel feedstock used for the Project is also a food or animal feedstock? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction.*	*Numerical write in*
	10	What fraction of the biofuel feedstock used for the Project is a waste product? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	11	What fraction of the harvested biofuel feedstock used for the Project will be replaced and regrown within one year of harvesting? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction.*	*Numerical write in*
	12	How much hydrogen will be used in the biofuel production process for hydroprocessing (kg hydrogen/kg biofuel produced)? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected amount in units of kg hydrogen/kg biofuel produced.*	*Numerical write in*
	13	How much fossil fuel energy will be consumed per electricity generated by the Project (kg fossil fuel/kWh)? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected amount in units of kg fossil fuel/kWh.*	*Numerical write in*
3b. Procurement – Biomass ***please answer only if the project includes biomass-based generation***	14	What is the expected overall efficiency of the Project's biomass conversion to electricity (electricity generated by the Project divided by the energy in the biomass combusted)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected overall efficiency.*	*Numerical write in*
	15	What is the expected biomass combustion efficiency of the biomass used for the Project (actual heat produced by combustion divided by the total heat potential of the biomass combusted)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected biomass combustion efficiency.*	*Numerical write in*
	16	What fraction of the harvested biomass feedstock used for the Project will be replaced and regrown within one year of harvesting?	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction.	
3c. Procurement – Energy Storage ***please answer only if the project includes energy storage***	17	What is the expected return efficiency of the Project's energy storage system (MWh returned to the grid/MWh stored)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected return efficiency.*	*Numerical write in*
	18	How many cycles will the batteries used for the Project's energy storage system undergo annually? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected number of cycles.*	*Numerical write in*
	19	What is the expected battery lifetime before degradation of the Project's energy storage efficiency below 80%? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected lifetime.*	*Numerical write in*
3d. Procurement – Geothermal ***please answer only if the project includes geothermal generation***	20	Will the Project's geothermal process be an enhanced geothermal system (EGS), flash/dry steam, or binary steam power plant? *If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".*	*Text write in*
	21	Will the Project's geothermal process be closed loop? *If the answer to this question is unknown or uncertain, please conservatively answer "No".*	*Yes / No*
	22	What percentage of mass of fluid will be cascaded compared to total extracted fluid mass? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected percentage.*	*Numerical write in*
	23	Will new geothermal wells need to be drilled for the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "Yes".*	*Yes / No*
3e. Procurement – Solar ***please answer only if the project includes solar generation***	24	What is the expected solar irradiance for the Project (kW/m^2)? *If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".*	*Numerical write in*
	25	Which type of solar panels will be installed for the Project? a. Cadmium Telluride b. Single Crystalline Silicon c. Multicrystalline Silicon d. Other, if yes, please provide details regarding solar panel technology type.	*Yes/No* *If "Other", include write-in*

		If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".	
	26	What is the solar conversion efficiency of the solar panels (solar kW/m^2 / kW/m^2 produced) used for the Project? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum solar conversion efficiency.*	*Numerical write in*
3f. Procurement – Waste-to-Energy ***please answer only if the project includes Waste-to-Energy generation***	27	What fraction of the waste feedstock used for the Project will be organic waste (food, waste paper, green (i.e. compostable) waste, etc.)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	28	What fraction of the fleet used to transport the waste feedstock to the Facility will consume renewable diesel or be electric? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	29	If the Waste-to-Energy process used for the Project will emit greenhouse gases, what fraction of the greenhouse gases will be captured? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Yes / No* *If "Yes", include numerical write in*
	30	What is the expected overall electrical efficiency of the Project process (electricity produced divided by the energy utilized for the waste-to-energy process) (kWh produced/kWh utilized for processing)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum overall electrical efficiency expected.*	*Numerical write in*
3g. Procurement – Wind ***please answer only if the project includes wind generation***	31	What fraction of the rotors used for the Project will be made from recycled materials? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	32	Please provide the expected wind energy availability for the Project's location as it is related to the available wind speed (MW). *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected wind energy availability.*	*Numerical write in*
	33	Please provide the expected power generation ratio of the Project.	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected power generation ratio.	
	34	Please provide the expected power coefficient of the Project. *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected power coefficient of the Project.*	*Numerical write in*
	35	What percentage by weight of the turbine tower will be steel? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected percentage.*	*Numerical write in*
4. Construction	36	What fraction of the equipment used during the construction phase of the Project will consume renewable fuel? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	37	Will the Site have an anti-idle policy for the equipment used during the construction phase of the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "No".*	*Yes / No*
	38	How many hours of helicopter use will be required for construction phase of the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "Yes".*	*Numerical write in*
	39	What fraction of construction workers traveling to the Site during the construction phase of the Project will be local to Hawai'i? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction of construction workers traveling to the Site during the construction phase of the Project may be local to Hawai'i.*	*Numerical write in*
5. Operations & Maintenance	40	What fraction of Project equipment and materials will need to be replaced during the Project's proposed Contract Term (e.g., Project lifetime) as a percentage of capital cost? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction of Project equipment and materials may need to be replaced during the Project's proposed Contract Term by using an above-average scenario for number of equipment failures and wear-and-tear on project materials.*	*Numerical write in*
	41	Will any equipment containing high global warming potential gases (such as sulfur hexafluoride (SF_6) or hydrofluorocarbons (HFCs)) be installed or used during operation? If yes, please	*Yes / No If "Yes", include*

		provide the type of equipment and high global warming potential greenhouse gas and approximate quantity (kg) leaked per year. *If the answer to this question is unknown or uncertain, please conservatively assume "Yes" and provide a maximum expected quantity(kg) leaked per year.*	*numerical write in*
	42	What is the expected electricity load from the grid over the Project's proposed Contract Term as a percentage of the Project's total electricity production? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum electricity load from the grid as a percentage of the Project's total electricity production.*	*Numerical write in*
	43	What is the expected onsite electricity use over the Project's proposed Contract Term as a percentage of the Project's total electricity production? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected onsite electricity use over the Project's proposed Contract Term as a percentage of the Project's total electricity production.*	*Numerical write in*
	44	What fraction of the equipment used for the Operations & Maintenance of the Project will consume renewable fuel or be electric? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
6. General	45	Please provide any additional information available likely to impact the Project's lifecycle (i.e., including raw materials and extraction, transportation, construction, operations & maintenance, and decommissioning & disposal) greenhouse gas emissions.	*Text write in*
	46	Please describe any additional actions that will be taken to reduce the Project's lifecycle greenhouse gas emissions, if not already captured in above responses. If no actions are intended at this time, please state that.	*Text write in*

Certification of Counsel for Proposer
Hawai'i Electric Light Company, Inc.

Pursuant to Section 1.7.4 of Hawai'i Electric Light Company, Inc.("Company) Request For Proposals for Energy Storage, North Kohala, Island of Hawai'i ("RFP"), the Company 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 unaffiliated 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: _____ ;

(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 such proposer (by contract or organizational structure), including other proposers responding to the RFP;

(3) the Company 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 certificate 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 such 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, 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. Such legal counsel will also be required to submit a similar certification at the conclusion of contract 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 STORAGE
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 STORAGE
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
4)	**For the Inverter Based Generating Facility, please provide the following data:**	
	a. Inverter manufacturer, Type, Size, Impedances. Attach copy of inverter data sheet.	
	b. Power Factor Range Capability	
	c. Inverter Reactive Power Capability Curve	
	d. Auxiliary 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)	**Energy Storage System**	
	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	

6)	**For the 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 STORAGE
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
7)	**Please provide the following software models that accurately represent the Facility:** (For model requirements, refer to the HECO Facility Technical Model Requirements and Review Process and PSCAD Model Requirements Rev.9)	
	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 representation 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 compatibility 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)	
8)	**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.	
9)	**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).	

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

		Response
10)	**For the power fuses, please provide:**	
	a. The manufacturer, type, size, and interrupting capability.	
	b. The minimum melt and total clearing curves.	
11)	**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]

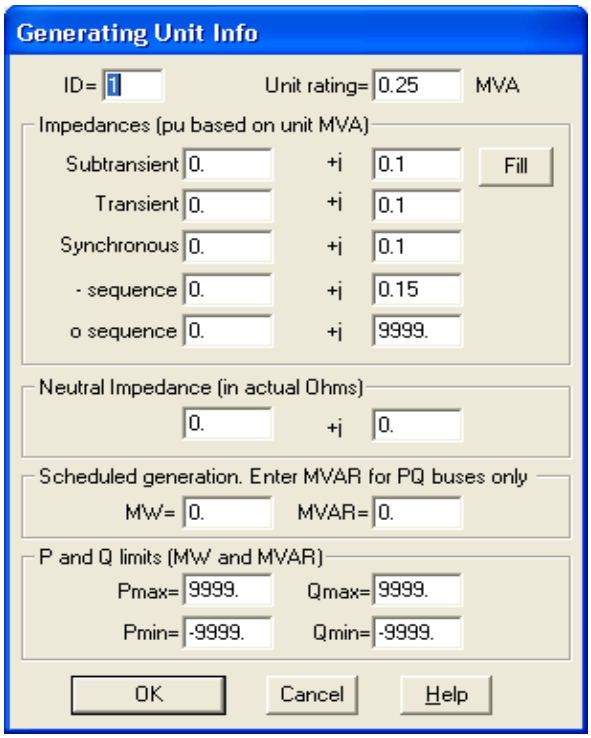
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

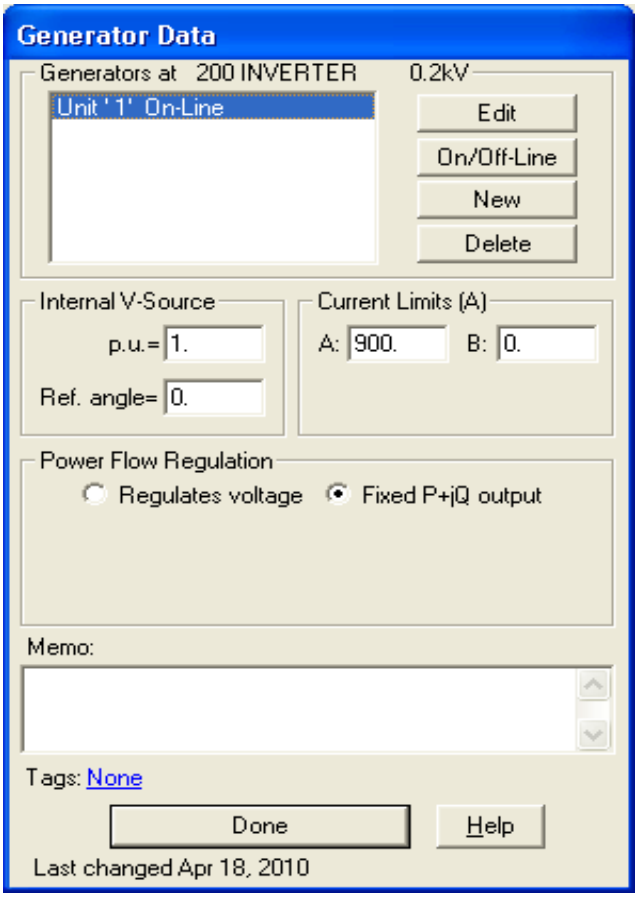
[1] Internal open circuit voltage

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:

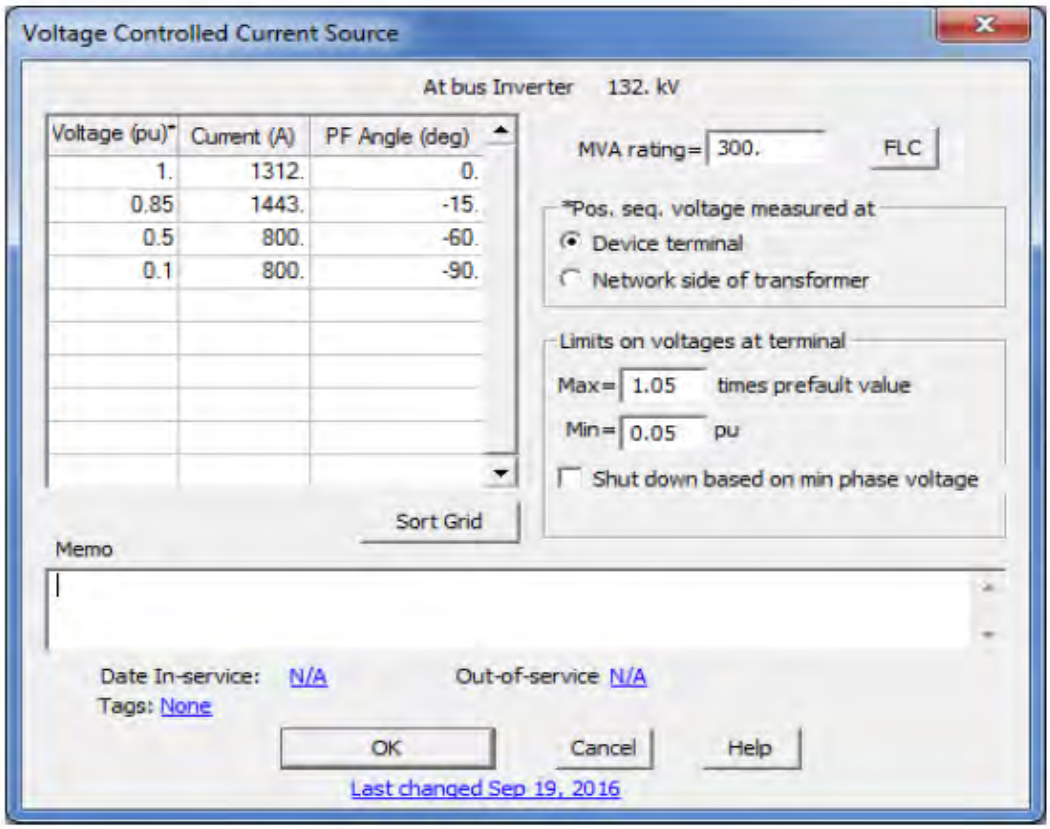
Voltage PU	Current (A)	PF Angle (deg)

[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

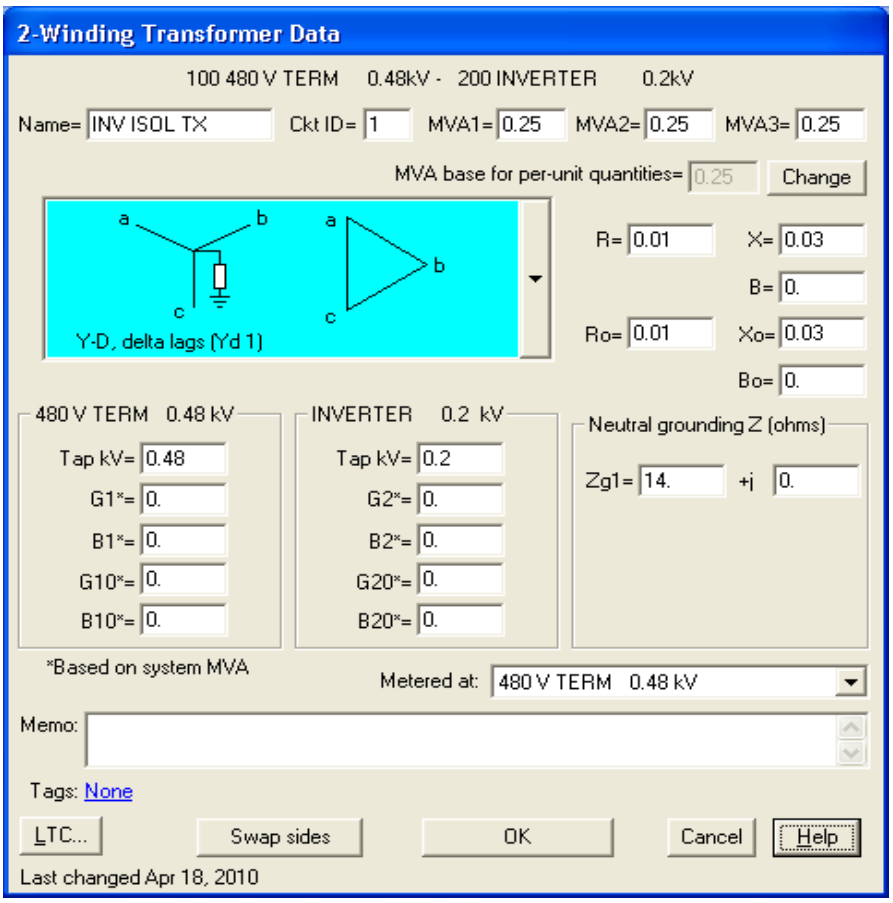
[2] Impedances in **Per Unit** based on kVA

	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

Table of Contents

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.

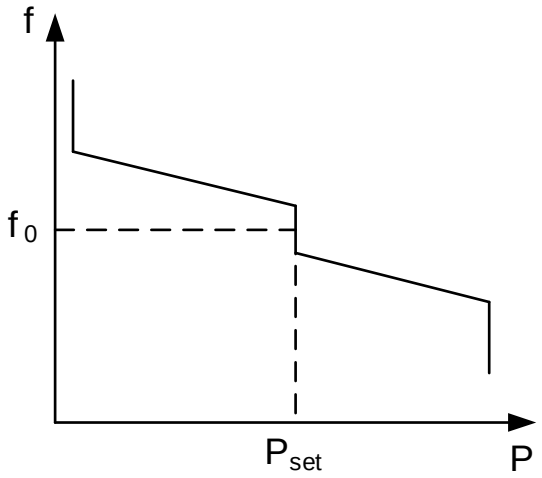


Figure 1 – Frequency Droop Control Characteristic with Deadband

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

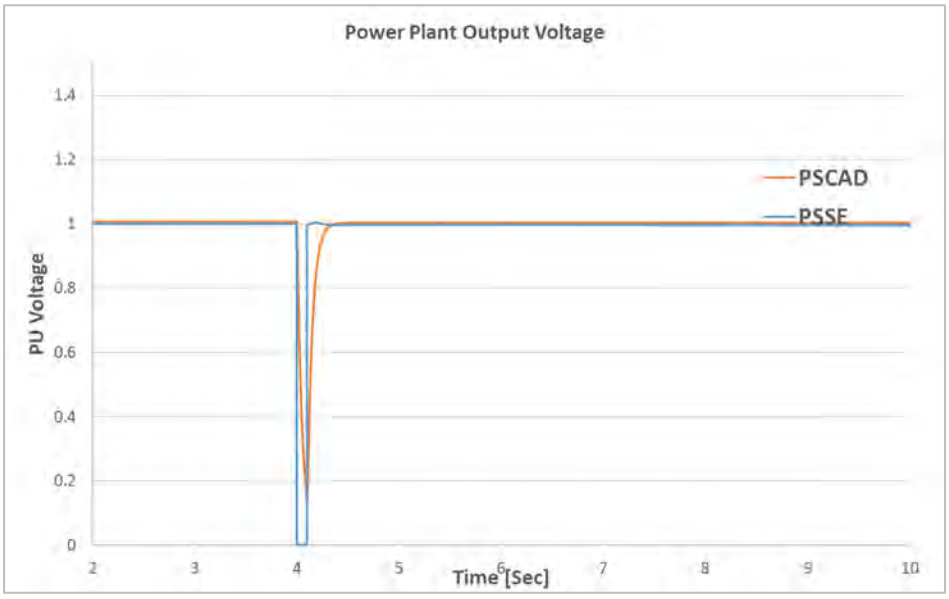


Figure 1: Overlaid plot for power plant voltage

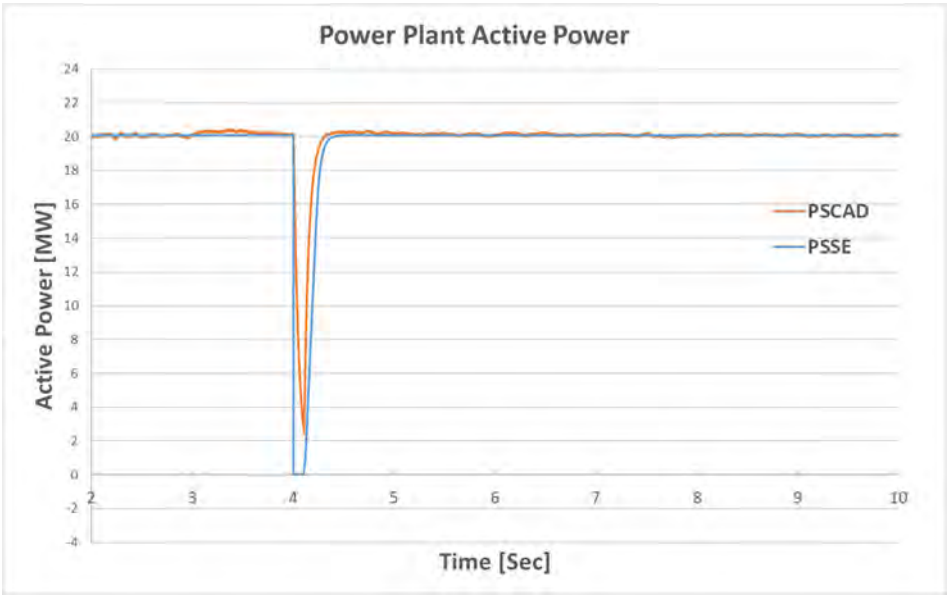


Figure 2: Overlaid plot for power plant active power generation

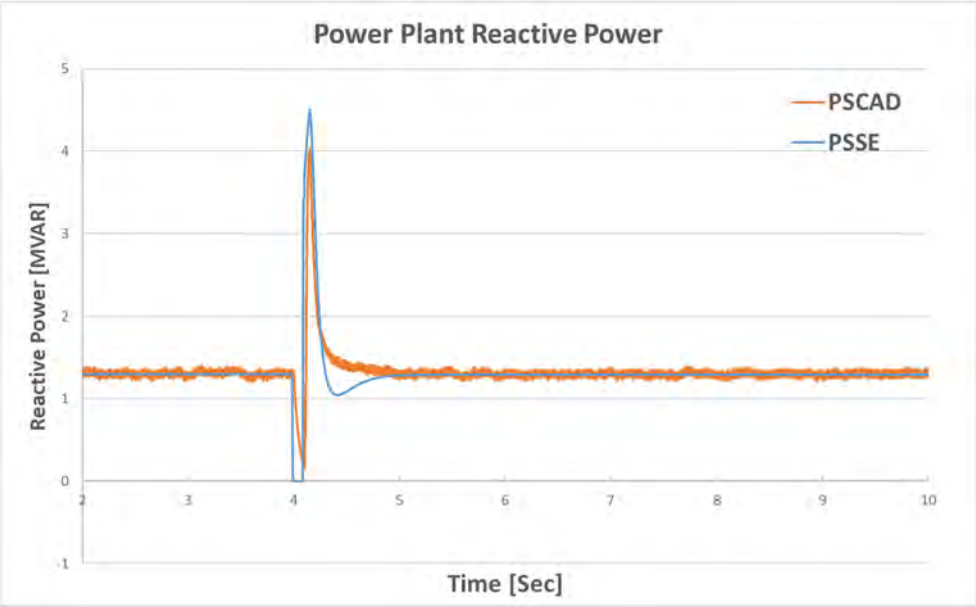


Figure 3: Overlaid plot for power plant reactive power generation

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.

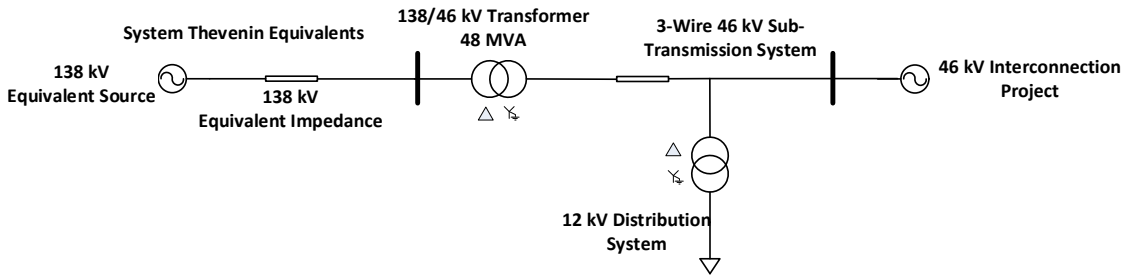


Figure 4: Testing circuit single line diagram for 46 kV project

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.

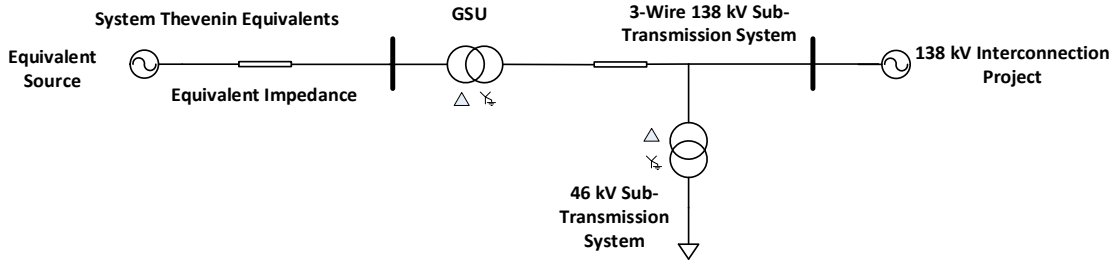


Figure 5: Testing circuit single line diagram for 138 kV project

North Kohala Model and Interconnection Requirements Study (IRS) Scope

Island	Hawai'i
Size	Connecting to Hawi Substation Single Project
Models	Grid Forming PSS®E User Defined, Grid Forming PSCAD, and Grid Forming ASPEN. Note: Grid Following PSS®E User Defined, Grid Following PSS®E Generic, Grid Following PSCAD, and Grid Following ASPEN may potentially be required if issues with Grid Forming performance are identified.
System Impact Study Scope	**Tasks** (Include selected tasks in the IRS. Exclude tasks that are unselected) ☒ Interconnection One-Line, Three-Line, and Equipment List ☒ Project Data Requirements and Facility Technical Model Review ☒ Review of Existing System Performance (Base-Case) ☒ Develop Project Model (IRS Case) ☒ Steady-State Power Flows ☒ Reverse Power Flow ☒ Reactive Power Requirements ☒ Protection Review ☒ Voltage Flicker ☒ Voltage Transients (In-Rush Current) ☒ System Stability ☒ PSSE Analyses ☒ PSCAD Analyses for Weak Grid Conditions ☒ Grid Forming Analyses ☒ Ride-Through Requirements ☒ Unintended Islands ☒ Transient Overvoltage (TrOV) ☒ Unintended Islands Fault Overvoltage (GFOV) ☐ Harmonics ☐ Harmonics Model Analysis ☐ Harmonics Monitoring Assessment
Reference Single Line Diagram (See Appendix H)	See Single Line Diagram for the site

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix C – Code of Conduct Procedures Manual

Hawaiʻi Electric Light

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 a system resource proposal pursuant 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 North Kohala Energy Storage RFP* (the "Code of Conduct") requires the Company 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 Company's competitive bidding process for system resources. This Procedures Manual has been developed for the Company's North Kohala Energy Storage RFP 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 Hawaiian Electric Proposal 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 North Kohala Energy Storage 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 Company's 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 North Kohala Energy Storage RFP* developed by Hawaii Electric Light Company, Inc. ("Company") 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 Hawaiian Electric Proposal Team with Shared Resources or Unassigned Company Resources, accessed via the RFP Communication Tool Kit SharePoint Site.
- Company Executive in Charge – The Company executive responsible for ensuring compliance with this Code of Conduct and serving as the point of contact for the Independent Observer for reporting any violations by the Company of the Code of Conduct. The Company Corporate Compliance Officer shall remain responsible for the Company's independent corporate code of conduct and may support compliance matters and questions arising with employees, agents and other representatives of the Company, e.g., conflicts of interest, with respect to this Code of Conduct.
- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company's RFP conducted under the Framework and the evaluation of bids submitted in response to this RFP. Subject to the transfer rules specified herein, the Company RFP Team will have fixed team members who will not have any involvement with the Hawaiian Electric Proposal Team for this RFP.
- Hawaiian Electric Proposal Team – The Company personnel and outside consultants responsible for the development of the Hawaiian Electric Proposal Team responses to the RFP. Subject to the transfer rules specified herein, the Hawaiian Electric Proposal Team will have fixed team members who will not have any involvement with the Company RFP Team for this 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. The Energy Contract Manager shall be a member of the Company RFP Team.
- 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 system 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 the RFP. Non- Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal price related criteria set forth in the RFP. 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 Hawaiian Electric Proposal Team participating in the RFP and submitting a proposal shall be considered a Proposer.
- RFP – A written request for proposals issued by the Company 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, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources located in the RFP Communication Tool Kit SharePoint Site. Names and roles of Company employee and consultants 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team (but not any Affiliate Team) to assist in meeting unforeseen tasks for the RFP or the Hawaiian Electric Proposal Team 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

The Code of Conduct and this Procedures Manual address (1) communication requirements and procedures associated with the relationship between utility employees

(Company RFP Team, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources); (2) communication requirements and procedures associated with the relationship between the Company RFP Team, the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team for the purposes of completing their efforts to effectively evaluate the RFP or to submit a bid in response to the RFP. The small size of the Company 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 Company for this specific purpose.

IV. ORGANIZATION AND COMMUNICATION RESPONSIBILITIES

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

A. Organization

The Company shall identify and maintain two separate teams to facilitate the independence and objectivity of the Company resources working on the RFP and ensure an arms-length relationship with the resources working on the Hawaiian Electric project to avoid any real or perceived inequity in the RFP process. The two essential teams shall be the "Company RFP Team" and the "Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team. Shared Resource employees are allowed to carry on with both their RFP (for either the Company RFP Team and/or the Hawaiian Electric 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 Hawaiian Electric Proposal Team. Shared Resource employees, however, will not participate in the evaluation and selection process of proposals submitted in response to the RFP. Rules for communications between Shared Resources and the essential teams are specified below.

Company employees unassigned to the RFP may be called upon by the Company RFP Team, Hawaiian Electric Proposal 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 be led by a Director/Manager level employee and consist primarily of 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 Hawaiian Electric Proposal Team. The Hawaiian Electric Proposal Team, tasked with preparing any Company proposal to be submitted by the Company in response to the 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 the 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 the 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 the 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal) 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 the RFP (or stage or phase of the RFP). After completion of the RFP (or stage or phase of the 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: (a) participate or be involved in establishing the evaluation criteria and the evaluation of any subsequent stage(s) or phase(s) of the RFP which such employee participated in with his/her former team; or (b) participate or be involved in the formulation and/or origination of a proposal for any subsequent stage(s) or phase(s) of the 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 Hawaiian Electric Proposal 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 Company 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 Hawaiian Electric proposals and/or Affiliate proposals do not have any unfair competitive advantage over third-party bids, the Company 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, Hawaiian Electric 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team. Specific rules to log communications with the Company RFP Team or the Hawaiian Electric Proposal 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 Hawaiian Electric proposal 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 Hawaiian Electric Proposal Team members."

2. Communications Between the Company RFP Team and Proposers, including the Hawaiian Electric Proposal 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 via the communication means specified in the RFP (e.g. specified website link provided by the Company (the "Company RFP website"), specified RFP electronic procurement platform, and/or specified RFP electronic mail address ("email")). The IO will monitor all communications through any communication means specified in the RFP. To ensure fair and equal access to information, any Hawaiian Electric Proposal Team and/or Affiliate Team shall be considered a Proposer for communication purposes and any request for information from the Hawaiian Electric Proposal Team or Affiliate Team to the Company RFP Team shall be through the communication means specified in the Company RFP.

Subject to confidentiality obligations, it is the objective of the Code of

Conduct that all Proposers, including the Hawaiian Electric Proposal 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 via the communications means specified in the RFP.

b. Questions will be reviewed and responses will be coordinated with the appropriate functional area within the Company for a response. Every reasonable effort will be made to provide responses in a timely manner.

c. All responses, including the classification of such response, i.e., whether non-confidential or confidential as described below, will be made available to the IO for monitoring purposes. The IO may choose to comment on any response at its discretion.

d. Depending on the questions received, responses may involve Confidential Information of the Company and/or Proposers. Release of any Company Confidential Information must be approved in advance by the Company executive authorized to release the Confidential Information. Any release of Company Confidential Information shall be accompanied by appropriate confidentiality and non-disclosure agreements, protective orders or other means required to maintain the confidentiality of the Company Confidential Information while still permitting its disclosure under circumstances deemed appropriate by the responsible Company executive. Other non-Company Confidential

Information will not be shared without the prior written consent of the owner of such Confidential Information and the execution of appropriate confidentiality and non-disclosure agreements by all recipients of such Confidential Information. Responses will be categorized as follows:

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

e. Prior to and during the RFP, 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 communication means specified in the. 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 communication means specified in the RFP. 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 Company and the Commission.

The Company's Regulatory Affairs staff will be responsible for initiating communication with the Commission regarding the RFP or the Company's 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 Hawaiian Electric Proposal Team or any Affiliate Team.

Any communication between the Company RFP Team and the Hawaiian Electric Proposal Team or any Affiliate Team with respect to the RFP shall be handled no differently than with Proposers and other outside parties. Accordingly, the Hawaiian Electric Proposal Team or any Affiliate Team will be required to submit any questions or information requests to the Company RFP Team via the communication method specified in the RFP 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 Hawaiian Electric proposal 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 Hawaiian Electric Proposal or Affiliate Teams except in accordance with the procedures in the Code of Conduct, this Manual or the RFP.

Company RFP Team members and Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team and Shared Resources.

Shared Resources may provide services to the Company RFP Team and the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team or any information developed on behalf of the Hawaiian Electric Proposal Team with the Company RFP Team, except through the formal communication process outlined above, i.e., through the communication means specified in the RFP.

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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team and any Unassigned Company Resource or consultant that is not a Shared Resource.

There may be times where a Company RFP or Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team shall consult with the Company executive for resolution.

8. Communications between the Company RFP Team, the Hawaiian Electric Proposal Team and Company Management.

The Company RFP Team and the Hawaiian Electric Proposal Team will necessarily require management approval of the RFP and the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 the RFP, the Code of Conduct for the RFP will be activated. However, if the Hawaiian Electric Proposal Team determines at any time that it will not pursue a Hawaiian Electric option for the 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 Hawaiian Electric Proposal Team must then conduct activities on the RFP or Hawaiian Electric proposal 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 Hawaiian Electric Proposal Team option except through the formal communication processes outlined above.

C. Immediately upon assignment to a Company team (RFP or Hawaiian

Electric Proposal), 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 Hawaiian Electric Proposal), he or she will not be able to transfer to the other Company team during the pendency of any particular stage or phase of a particular RFP. Transfers of members of any particular team to another team after the RFP, or a particular stage or phase of the RFP, is completed shall be governed by the transfer rules specified herein. 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 RFP, or the particular stage or phase of the RFP, has been completed.

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 the RFP, a Roster listing employees and consultants in their role; Company RFP Team, Hawaiian Electric Proposal Team, Shared Resource or Unassigned Company Resource, will be generated. 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 the RFP will terminate after the following two conditions are met when:

- the final contract(s) for the RFP conducted under the Framework with the successful proposer(s) is/are executed, or when written notice of termination of the RFP 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

- a certification of Code of Conduct compliance by all employees participating in the 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 Company's 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 Company's 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.

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix D – PowerAdvocate User Information

Hawaiʻi Electric Light

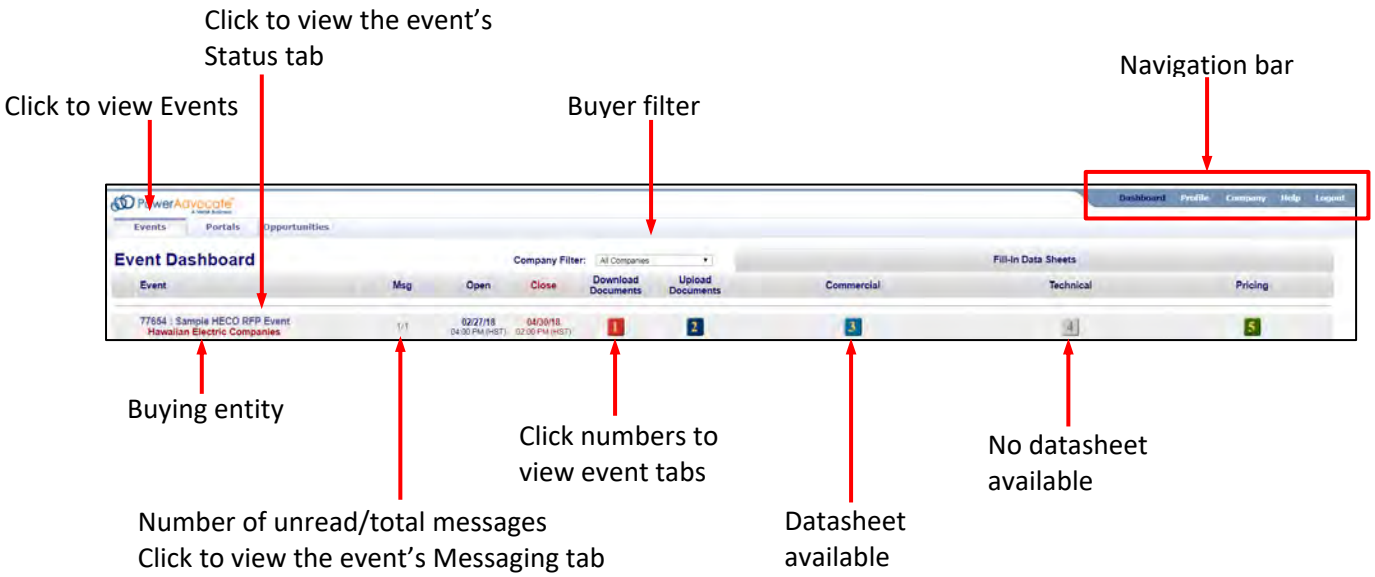
Sourcing Intelligence Quick Start for Suppliers

Logging In

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

Dashboard

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



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

Downloading Bid Packages

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

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

Uploading Documents

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

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

Datasheets

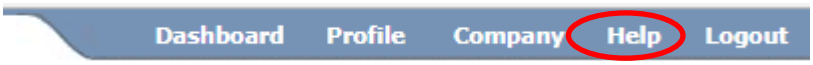
Datasheets (3. Commercial Data, 4. Technical Data, 5. Pricing Data) will not be used in this RFP event. All Proposal information will be uploaded for submission through the 2. Upload Documents tab. Buttons/tabs are grayed out if the event is not using a particular type of datasheet.

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 this RFP, 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.
- PowerAdvocate is now part of Wood Mackenzie.

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. 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 renewable energy generation and/or storage 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 Hawai'i, 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 energy storage service agreement, the terms of which must be agreed upon by the parties ("ESSA Negotiations"). For purposes of this Agreement the term "Project" refers to the RFP, Proposal, potential IRS and ESSA 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, contractors, financing parties and investors (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', contractors', suppliers', financing parties', investors' and other third parties' past, present and future business affairs including, without limitation, finances, customer information, supplier

information, pricing and cost information, products, services, designs, processes, organizational structure and internal practices, forecasts, sales and other financial results, records and budgets, business, marketing, development, sales, other commercial information and strategies, and negotiating positions and drafts made or exchanged between IPP and the Companies during negotiations or other discussions prior to such negotiated documents or agreements becoming public;

(b) all "Personally Identifiable Information," which shall include all information belonging to an individual that may be used to track, locate, or identify such individual, or which is otherwise protected by privacy laws, including but not limited to IP address, residential address, personal telephone number, social security number, date of birth, government-issued identification number, financial account number, personal email address, and username or password, all of which shall always be considered and deemed to be Confidential Information whether marked as "confidential" or not;

(c) all "Critical Infrastructure Confidential Information" concerning the Companies' generation, transmission, and distribution systems or its information technology or security systems, including but not limited to all designs, specifications, 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, all of which shall always be considered and deemed to be Confidential Information whether marked as "confidential" or not;

(d) 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;

(e) all previously disclosed information designated as or deemed to be "Confidential Information" under previous nondisclosure and confidentiality agreements executed between the parties, whether expired or still in effect, it being the understanding of the parties that any/all such agreement(s) be deemed superseded by this Agreement and that all Confidential Information exchanged between the parties to date shall be henceforth governed by this Agreement;

(f) any third-party confidential information included with, or incorporated in, any information provided by the Provider to the Recipient or its Representatives, including source code of any of Provider's vendors or suppliers; and

(g) 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.

IPP and the Companies understand that in the course of obtaining approval of the Project, any documents filed with the State of Hawai'i Public Utilities Commission ("Commission") may be considered government records subject to the Uniform Information Practices Act ("UIPA"), Hawai'i Revised Statutes ("HRS") Chapter 92F.

All written Confidential Information provided to the Companies by IPP and marked as "confidential" in response to a request by the Companies for purposes of filing such information with the Commission shall be accompanied in writing by (1) a clear statement of the basis for its confidential status, including the applicability of any UIPA exceptions under HRS § 92-13, (2) a description, with particularity, of the cognizable harm to IPP if such information were to be disclosed publicly, and (3) if applicable, any additional justification or harm to IPP were the Confidential Information to be disclosed to other parties or participants in the subject Commission proceeding (collectively, the "Justification"). IPP expressly allows the Companies to disclose or otherwise use the Justification in order to justify withholding the Confidential Information from public disclosure in accordance with this Agreement, including without limitation, filing of the information in a Commission proceeding pursuant to Section 4(e) below and, to the extent necessary, any required disclosure pursuant to Section 5 (Required Disclosure and Notice) below. The IPP will provide the Companies with such Justification within three (3) business days of the Companies' written request for such Justification, provided that if the Companies are given less than five (5) business days by the Commission to produce the Justification, then the IPP will provide the Companies with the Justification not less than 24 hours before the Companies' due date for such Justification, provided that (1) the Companies provides the IPP with the request as soon as reasonably practicable and (2) to the extent possible, IPP shall be given at least one full business day to provide the Justification.

A Provider shall be permitted to designate as "confidential" information previously provided to Recipient at which point such information shall become and be deemed to be Confidential Information under this Agreement, provided that such information is not specifically excluded under Section 3 (Exclusions from Confidential Information) below. Notwithstanding anything to the contrary stated herein, any "Confidential Information" previously provided by IPP under any previously executed nondisclosure and confidentiality agreement shall not require a Justification unless such is requested by the Companies in connection with a required or anticipated disclosure described herein.

3. Exclusions from Confidential Information

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

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

(b) at the time of disclosure is, or thereafter becomes, available to the Recipient on a non-confidential basis from a third-party source, provided that such third party is not and was not

prohibited from disclosing such Confidential Information to the Recipient by a contractual or other obligation to the Provider;

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

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

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

PROVIDED, however, that under no circumstance shall Critical Infrastructure Confidential Information ever be deemed to be excluded from being considered or deemed 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 or advising on the evaluation, consummation, approval, development, investment, financing, construction or operation of the Project, and where the Companies are the Recipient, Companies' operation as an electric utility (the "Acceptable Purposes"), or those Representatives who otherwise need to know the Confidential Information for such Acceptable Purposes.

(b) not to use Confidential Information for any purpose other than in connection with the Acceptable Purposes.

(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 Acceptable Purposes or those Representatives who otherwise need to know such Confidential Information for such Acceptable Purposes) 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 Critical Infrastructure Confidential Information has been made available to the Recipient or its Representatives.

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

(e) Any provision herein to the contrary notwithstanding, the Companies and IPP may disclose Confidential Information to (i) the Commission's independent observer, provided that such disclosure is made pursuant to a non-disclosure agreement with the independent observer; and (ii) the 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. If IPP is a party or participant in the docket or proceeding under which disclosure of IPP's Confidential Information is being sought, IPP shall be solely responsible for providing the Justification associated with such Confidential Information.

5. Required Disclosure and Notice

If the parties or any of their Representatives become legally compelled (by deposition, interrogatory, request for documents, information request, subpoena, civil investigative demand, court order, or similar process) to disclose any of the Confidential Information (other than a situation covered by Section 4(e) above), 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, such methods shall be consistent with HRS 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 Company

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.

(c) Recipient shall indemnify, defend and hold harmless Provider and Provider's officers, directors and employees (and each of their heirs, successors and assigns) (the "Indemnified Parties") from and against all losses, damages, claims and actions, including, without

limitation, reasonable attorneys' fees and costs, and all expenses incidental to such losses, damages, claims or actions ("Losses"), based upon or arising out of, or to the extent caused or contributed to by the breach of Recipient's confidentiality obligations with respect to Critical Infrastructure Confidential Information or Personally Identifiable Information; such rights to indemnification shall apply regardless of whether any act, omission, misconduct, negligence or default on the part of the Indemnified Parties contributed to the Losses, unless such act, omission, misconduct, negligence or default by an Indemnified Party was the sole or primary cause of the Losses.

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.
Ward Receiving
Mail Code AL12-IU
799 S. King Street
Honolulu, Hawaii 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, Hawai‘i 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 Hawai‘i. Any action brought with respect to the matters contained in this Agreement shall be brought in the federal or state courts located in the State of Hawai‘i. Each party agrees and irrevocably consents to the exercise of personal jurisdiction over each of the parties by such courts and waives any right to plead, claim or allege that the State of Hawai‘i is an inconvenient forum or improper venue.

17. Attorneys’ Fees and Costs

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

18. Assignment Prohibited

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

19. No Third Party Beneficiaries

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

20. Entire Agreement

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

21. Term and Survival

This Agreement shall remain in full force and effect for a period of five (5) years from the Effective Date. All confidentiality obligations of this Agreement with respect to Confidential Information provided to Recipient during the term of this Agreement shall survive following expiration or termination of this Agreement until such Confidential Information is returned to Provider or destroyed in accordance with Section 6 hereinabove.

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: _____

HAWAII ELECTRIC LIGHT COMPANY, INC,

By: _____
Print Name: _____
Its: _____

"Companies"

[Insert Name of IPP]
_____

By: _____
Print Name: _____
Its: _____

"IPP"

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA ENERGY

STORAGE

ISLAND OF HAWAI‘I

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix F – Description of the Site

Hawai‘i Electric Light

HAWAIIAN ELECTRIC COMPANIES
NORTH KOHALA ENERGY STORAGE
DESCRIPTION OF THE SITE

Akoni Pule Site

All proposals submitted in response to this RFP must be sited at the Akoni Pule Site. It is a Company Controlled Site consisting of 1.207 acres located along Akoni Pule Highway in Hawi Village, North Kohala (a portion of TMK (3)5-5-002: 023). See Exhibit A to this Appendix F. The site is zoned Agricultural.

The Company Controlled Site is currently vacant land that is privately owned. The Company has a perpetual Grant of Easement from the private landowner for the Akoni Pule Site. The Akoni Pule Site adjoins the existing Company-owned Hawi Substation (TMK (3)5-5-015: 033). The Akoni Pule Site, which is approximately 1.207 acres, has been allocated for this project, with the boundaries for the site being approximately 182.65 ft at its widest (on the front running parallel to Akoni Pule Highway), and approximately 274.84 feet deep (toward the interior of the property, away from Akoni Pule Highway). Proposer shall only be permitted to lease as much acreage as is necessary for its project. Additional acreage shall not be available and Proposers may only use the available land for its project and for no other uses. The current plan anticipates that the Akoni Pule Site will be purchased by the Company then will be consolidated with the adjoining Company-owned Hawi Substation. Any Proposer proposing to use the Akoni Pule Site shall be required to execute a ground lease for the site coterminous with the term of the ESSA. Proposer shall be responsible, at its sole cost and expense, for all other site improvements, utilities, permits and other required infrastructure and regulatory requirements necessary for use of the Akoni Pule Site for Proposer's Project.

Any drawings, reports or any other information or data relating to the Akoni Pule Site ("Site Information") are being furnished for the Proposer's convenience only and the Company assumes no responsibility whatsoever in respect to the sufficiency or accuracy of such Site Information or of the interpretation thereof, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Akoni Pule Site. In addition, no assurance is given that conditions found at the time of any surface or subsurface explorations will be the conditions that prevail at the time of construction at the Akoni Pule Site. The Proposer shall be solely responsible for all assumptions, deductions, or conclusions the Proposer may make or derive from the information furnished. Making such information available to the Proposer is not to be construed in any way as a waiver of the Proposer's responsibility to examine the Request for Proposals and the Akoni Pule Site. Proposer must satisfy itself through its own investigation as to conditions to be encountered at the Akoni Pule Site.

All underground water, gas, oil, telephone, electric, storm drain, sewer, and other pipes or conduits that may be shown on the Site Information are only approximate in their locations. The Proposer shall make a personal investigation and inspection of the records and drawings possessed by owners of the utilities. The Proposer shall make satisfactory arrangements with the owners of the utilities for the relocation, maintenance and protection of existing utilities, if any.

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

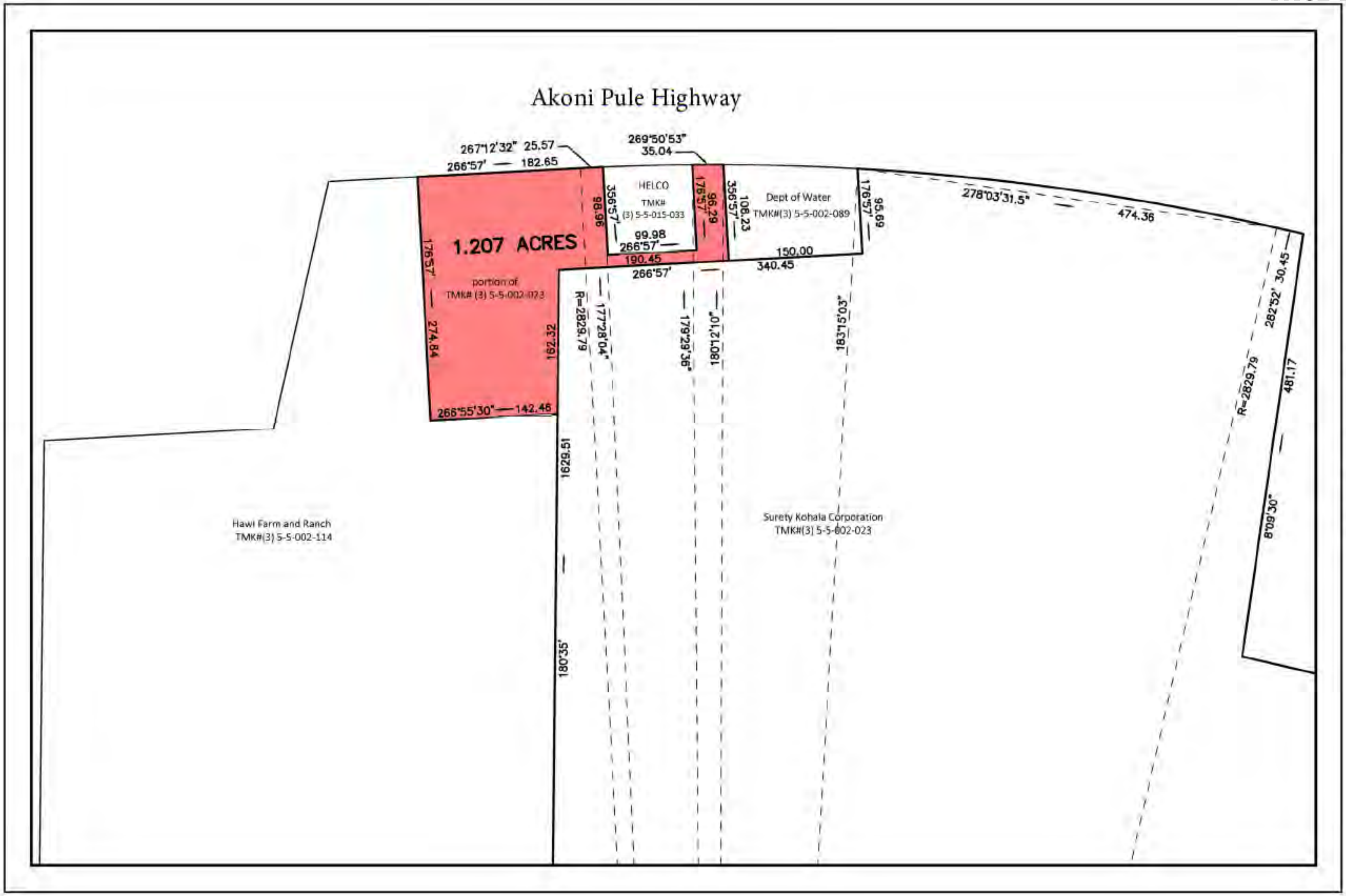
The Hawaii Clean Energy Programmatic Environmental Impact Statement (PEIS) analyzes, at a programmatic level, the potential environmental impacts of clean energy activities and technologies in the following clean energy categories: (1) Energy Efficiency, (2) Distributed Renewables, (3) Utility-Scale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


Akoni Pule Highway
267°12'32" 25.57
266°57' 182.65
269°50'53"
35.04
HELCO
TMK#
(3) 5-5-015-033
Dept of Water
TMK#(3) 5-5-002-089
278°03'31.5"
474.36
1.207 ACRES
portion of
TMK# (3) 5-5-002-023
99.98
266°57'
190.45
266°57'
150.00
340.45
274.84
162.32
266°55'30" 142.46
R=2829.79
177°28'04"
179°29'36"
180°12'10"
183°15'03"
282°52' 30.45
481.17
8°09'30"
1629.51
180°35'
Hawi Farm and Ranch
TMK#(3) 5-5-002-114
Surety Kohala Corporation
TMK#(3) 5-5-002-023
EXHIBIT A

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix G – Hawaiian Electric Development Team Certification Form

Hawaiʻi Electric Light

Overview

To the extent that there are Hawaiian Electric Proposals to the RFP, the Company will endeavor to evaluate these Hawaiian Electric Proposals on a fair basis compared to third party Proposals. As described in Section 1.9.1 of the RFP, "[t]he Competitive Bidding Framework allows the Company the option to offer a Self-Build Proposal in response to this RFP ("Hawaiian Electric Proposal"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the Hawaiian Electric Proposal or members, agents or consultants of the Company formulating the Hawaiian Electric Development Team; and (2) preferential access to proprietary information to the Hawaiian Electric Development Team." A Hawaiian Electric Proposal will be required to comply with the provisions in the Framework for Competitive Bidding ("Framework") as well as this RFP.

In addition to its Proposal, the Hawaiian Electric Development Team will be required to submit Attachment 1 to this Appendix G, Hawaiian Electric Development Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Hawaiian Electric Development Team over other proposers responding to this RFP, as well as adherence to ESSA terms and milestones required of all proposers and the Hawaiian Electric Proposal's proposed cost protection measures.

Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Hawaiian Electric Proposal be submitted electronically through the Electronic Procurement Platform a minimum of one (1) Day before other Proposals are due.

Except where specifically noted, a Hawaiian Electric Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers.

As described in Section 3.8.4 of the RFP, if selected, a Hawaiian Electric Proposer will not be required to enter into an ESSA with the Company. However, the Hawaiian Electric Proposer will be held to the proposed modifications to the ESSA, if any, it submits as part of the Hawaiian Electric Proposal in accordance with Section 3.8.7 of the RFP. Moreover, the Hawaiian Electric Proposal will be held to the same performance metrics and milestones set forth in the ESSA to the same extent as all Proposers, as attested to in the Hawaiian Electric Development Team Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause , or other appropriate rate adjustment mechanisms.

In lieu of price components, the Hawaiian Electric Proposal will need to provide its total project capital costs, any associated annual O&M costs, as well as annual revenue requirements by year (see Appendix B Section 2.0). The Hawaiian Electric Proposal shall submit revenue requirement

worksheets with their Proposal that support their annual revenue requirements estimates (see Appendix B, Section 2.1.) . A starter revenue requirements template example can be requested by the Hawaiian Electric Development Team via email to the RFP Email Address or through the PowerAdvocate Messaging function once the RFP event opens. The revenue requirements worksheets submitted will be customized by the Hawaiian Electric Development Team to reflect the details of the Project's Proposal. All assumptions used will be reflected in an assumptions input tab.

Hawaiian Electric Proposal Total Project Capital Cost

The following is a high-level breakdown followed by a narrative explanation of the total capital cost estimate for a potential Hawaiian Electric Proposal. The total project capital cost (and annual O&M costs) will be used to calculate the Revenue Requirement, which will then be used to calculate a LB for Proposal comparison purposes. The categories of costs include:

- Facility
  - EPC Contract
  - Allowance for Change Orders
  - Equipment
  - Owner's Cost
- Outside Services
- Interconnection
- Overheads
- AFUDC

These costs will be identified in Section 2.3.2.2 of the Hawaiian Electric Proposal (see Appendix B Section 2.3.2.2).

- Facility (including any generation and storage components) - This line item, to the extent applicable, should include costs such as:

  Engineering, Procurement, and Construction ("EPC") Contract
  The total cost estimate of the facility is the projected EPC contract cost including the design of the facility up to the high-voltage terminals of the step-up transformers, procurement of all the equipment, and services necessary to build the facility and construction and commissioning of the facility.

  Allowance for Change Orders
  This allocation accounts for items such as additional requirements resulting from unforeseen conditions, unexpected permitting requirements, force majeure events, unanticipated interferences, different interpretations of design requirements, material unavailability, and longer than normal delivery times.

  Equipment
  This cost includes the generator and the facility equipment that support the operation of the generator and the distribution of electrical power around the station, as applicable. Engineering and testing services required to ensure that the equipment is properly functioning at the site, training and documentation necessary

to operate and maintain the equipment, and performance guarantees may also be included here.

Owner's Cost
Owner's costs for the facility are all the costs necessary for the design, permitting, procurement, construction, and commissioning of the facility and for the preparation of the Proposal that are not included in the major contracts (i.e. EPC). The Companies' Labor includes Project Management, Station Operator training and commissioning, Environmental, Safety, Legal, Corporate Communications, Community and Government Relations, Engineering, and Regulatory Affairs. Company Labor for the preparation of the Proposal is also included here. For purposes of recovery, only the incremental costs of Labor will be subject to separate recovery.

- Outside Services - This line item, to the extent applicable, should include costs such as:
    - Construction Management to oversee the EPC contractor
    - Legal for the preparation of the Environmental Impact Statement and PUC process
    - Engineering for development and evaluation of the project technical specifications, Interconnection Requirements Study (IRS), and emissions testing
    - Environmental to conduct the Environmental Impact Statement (EIS) and Air Permit consulting
    - General Services such as surveys, land appraisals, Environmental Condition Reports, public relations, office trailer rental, archeological services, landscaping, miscellaneous permits, builder's risk insurance, switchgear testing, hazard analysis, painting, monitoring services, and moving costs.
    - Material costs including spare parts, furnishings, IT equipment, appliances, generator system initial fills (fuels, oils, water), and telecommunications equipment for the station.
    - Travel costs required to inspect other similar facilities, observe final acceptance testing of critical equipment, and station operators' factory training

- Interconnection – This line item covers all interconnection costs that a similarly situated IPP would be responsible for as described in RFP Section 2.3.5, and to the extent applicable, should include costs such as:

Distribution Line
The cost estimate includes the design, procurement, and construction of any new distribution infrastructure needed to interconnect with the designated substation.

Switchyard
Work at the switchyard will include design, procurement, and construction of the switchyard and the interfaces between the high voltage terminals of the generator step-up transformers and the circuit to which it will be connected. Site preparation of the switchyard and the design, procurement, and installation of the step-up transformers located in the switchyard, are typically included in the EPC contract.

Substation
Work at the designated substation that will include the design, procurement, and construction of the interfaces between the new distribution line and the substation buswork to which it will be connected.

Telecom
Accounts for direct labor, materials, and outside services to install telecommunication requirements for the project.

Project Management
Cost estimate of the project management design, procurement, contracting, and scheduling efforts for the interconnection only. Project management costs for the facility are included in the Owner's Cost estimate above.

- Overhead Costs

Overhead costs for the proposed facility will be estimated by the Company's budgeting software (UI Planner) and represent an allocation for those Company costs that are not attributable to any particular project or operation, but are essential nonetheless. Overheads are comprised of non-productive wages (such as holiday, sick, and vacation pay), employee benefits, payroll taxes, corporate administrative costs, and clearing costs.

- Allowance for Funds Used During Construction ("AFUDC")

The AFUDC will be calculated using the Company's budgeting software (UI Planner) and represents the cost of capital funding for the Project. The Company strives to minimize the cost of the AFUDC by ensuring that Project elements that are used or useful are placed in service as soon as possible, as well as minimizing the amount of time that AFUDC can accumulate, by minimizing the amount of time between expenditures on Project elements and their placement in service.

The Hawaiian Electric Proposal will include a Revenue Requirement for each year, which is calculated from the total project capital cost to determine the revenues needed to recover the cost of the project. The value of the Revenue Requirement Calculation for the Total Hawaiian Electric Proposal Project Capital Cost will be included in the Levelized Benefit calculation described below.

Annual O&M

The cost for ongoing O&M (fixed and variable) will be a component of the Revenue Requirement. All O&M should be included in this category, unless captured elsewhere in the Revenue Requirement Calculation, including but not limited to annual O&M expense to maintain facility; property taxes (if applicable), and insurance. As described in RFP Appendix G, a Hawaiian Electric Proposal will be required to cap its O&M costs at the amount included in the Proposal. Only actual costs will be recovered if such actual costs are lower than the maximum amounts in the Proposal.

Annual Revenue Requirement

The Hawaiian Electric Proposal will include a Revenue Requirement for each year, which is calculated from the total project capital cost to determine the revenues needed to recover the cost of the project. The value of the Revenue Requirement Calculation for the Total Hawaiian Electric Project Capital Cost will be included in the Levelized Benefit calculation.

The following is a narrative description of the proposed revenue requirement calculation and significant assumptions that the Hawaiian Electric Proposal should account for. The objective of a revenue requirement analysis is to illustrate the annual revenue requirements (ARR) for a Hawaiian Electric Proposal.

Revenue Requirement is defined as a calculated value which represents the estimated revenues needed from ratepayers which would allow the Company to recover its capital investment and expenses, honor its debt obligations, pay its revenue and income tax liabilities, and pay its preferred shareholders while providing a fair return to its common shareholders for their investment. Specific factors or assumptions related to that particular project will be included in the analysis.

The purpose of a revenue requirement calculation is to determine the annual and total revenue requirements of a capital investment and annual O&M expense needed from customers. The ratemaking formula for revenue requirements is shown below.

$$RR = O + T + D + r(RB)$$

Where:
RR = Revenue Requirements
O = Operating and Maintenance Expense
T = Tax Expense (Income and Revenue)
D = Depreciation Expense
r = Rate of Return on Rate Base
RB = Rate Base

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the Hawaiian Electric Proposal to ensure an appropriate level of customer cost protection measures are included in such proposal.

APPENDIX G ATTACHMENT 1 - HAWAIIAN ELECTRIC PROPOSAL TEAM CERTIFICATION

Name of Hawaiian Electrc Proposal Team Contact: _____

Unique Name of Facility: _____

This Hawaiian Electric Development Team Cerfitication forHawai'i Electric Light Company, Inc.'s ("Company") Proposal in response to the Company's Request for Proposals for Energy Storage ("RFP") is made as of the date stated below.

A. COMPLIANCE WITH THE RFP AND CODE OF CONDUCT

The Hawaiian Electric Development Team certifies and acknowledges that it will/has:

1. Adhered to the terms of the RFP applicable to the Hawaiian Electric Development Team, including but not limited to: Section 1.7.1 (proposal submittal requirements), Section 1.7.4 (certification of non-collusion), Section 1.9 (Procedures for any Hawaiian Electric or Affiliate Proposals), and Section 3.4.4 (authorized signatory);

2. Adhered to the technical requirements of the RFP, excluding however those requirements inapplicable to the Hawaiian Electric Development Team such as execution of the Model ESSA, pricing formula requirements for independent power producer proposals, submission of a Proposal Fee, dispute resolution, credit requirements, selection of a priority list, and submission of a best and final offer;

3. Complied with the Company's Code of Conduct Procedures Manual, attached as Appendix C to this RFP, with particular attention to the Communications Protocols described in Section C therein with respect to communication with the Company RFP Team.

B. INDEPENDENT INVESTIGATION

The Hawaiian Electric Development Team further certifies and acknowledges that it will/has:

1. Submitted the Hawaiian Electric Proposal based on its own investigations, examinations, and determinations, including assessments of any risks that could have an effect on its obligations under the Hawaiian Electric Proposal.

2. Carefully examined the RFP documents and its appendices and has a clear and comprehensive knowledge of what is required of a Proposer under the RFP, and correspondingly, what is required of the Hawaiian Electric Development Team.

3. Examined and understands the technical requirements, schedule, and evaluation process as it is laid out in the RFP.

C. COST PROPOSAL ACKNOWLEDGEMENTS

The Hawaiian Electric Development Team acknowledges and agrees that:

1. Recovery for Project capital costs and O&M costs will be capped at the amount included in the Hawaiian Electric Development Team's Proposal.

2. Only actual capital costs and O&M costs will be recovered even if such actual costs are lower than the Hawaiian Electric Development Team's proposed maximum amounts.

3. Costs of developing the proposal must be included in the Hawaiian Electric Proposal for evaluation purposes only. Only the incremental costs of developing the Hawaiian Electric Development Team's proposal will be charged to the project and passed through to customers. Incremental costs for the Hawaiian Electric Proposal not serving as the Parallel Plan and which are not selected to the Final Award Group will not be recoverable from the Companies' customers.

D. ADHERENCE TO ESSA REQUIREMENTS AND MILESTONES

The Hawaiian Electric Development Team acknowledges and agrees that:

1. The Hawaiian Electric Proposal will be consistent with the scope of work and responsibilities of the "Seller" under the terms of the Model ESSA excluding inapplicable terms related to commercial and legal interactions between the Seller and the Company.

2. The Hawaiian Electric Proposal Facility will be designed and constructed to:

   a. Achieve the Performance Standards identified in Section 3 - Performance Standards, in Attachment B of the Model ESSA as modified by the IRS (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such performance standards that would be completed with an independent power producer under similar circumstances);

   b. Meet the following performance metrics as specified in Article 4 of the Model ESSA: (i) Performance Level Rated Energy Capacity, (ii) Performance Level Availability, and (iii) Performance Level Round Trip Efficiency;

   c. Pass the Acceptance Test specified in Attachment N – Acceptance Test General Criteria of the Model ESSA.

   d. Pass the Control System Performance Test specified in Attachment O – Control System Acceptance Test Criteria of the Model ESSA;

   e. Meet the project milestones identified in the Hawaiian Electric Proposal no later than the dates specified therein, which shall be consistent with the guaranteed project

milestones required in Attachment K – Guaranteed Project Milestones of the Model ESSA (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such milestones that would be completed with an independent power producer under similar circumstances). Notice of completion of milestones and any delay will be provided to PUC and Consumer Advocate.

f. Achieve the reporting milestones identified in the Hawaiian Electric Proposal no later than the dates specified therein, which shall be consistent with the reporting milestones required in Attachment L – Reporting Milestones of the Model ESSA (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such milestones that would be completed with an independent power producer under similar circumstances). Notice of completion of milestones and any delay will be provided to PUC and Consumer Advocate.

g. Will be subject to the applicable liquidated damages for the Model ESSA provisions above. These liquidated damages would be paid from shareholder funds and would be passed through to customers through the Companies' Power Purchase Adjustment Clause. Notice of any liquidated damages assessed and amounts of such liquidated damages will be provided to PUC and Consumer Advocate.

h. Will reconfirm requirements in GO7 application and any resulting approval order for such application.

i. Will provide annual report to PUC and Consumer Advocate on performance metrics.

E. DECLARATION AND SIGNATURE

1. The individual(s) that has (have) signed this Hawaiian Electric Development Team Certification is (are) duly authorized by the Hawaiian Electric Development Team to execute such on behalf of the Hawaiian Electric Development Team; and

2. All statements, specifications, data, confirmations, and other information set out in this Hawaiian Electric Development Team Certification are complete and accurate in all material respects.

IN WITNESS WHEREOF, the HAWAIIAN ELECTRIC DEVELOPMENT TEAM hereby makes the certifications, acknowledgements, and agreements stated herein as of the date stated under the signature of its authorized representative:

Dated at _____, _____ this _____ day of _____ 20_____.

_____
Signature of Hawaiian Electric Development Team Representative

_____
Name of Hawaiian Electric Development Team Representative (please print)

_____
Title of Hawaiian Electric Development Team

Representative (please print)

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix H – Interconnection Facilities Cost and Schedule Information

Hawaiʻi Electric Light

TABLE OF CONTENTS

Hawaiian Electric Company
Company-Owned Interconnection Facilities Cost and Schedule Information

The information provided in this document can be used to assist Proposers in estimating costs and schedule of potential projects.

SECTION 1 – COST RESPONSIBILITIES

For the purposes of this RFP, the Company will be responsible for the costs of Company-Owned Interconnection Facilities (COIF), subject to any limitations, as described in Section 1. The Company will not be responsible for 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 –Hawai‘i Electric Light.
3. Company-Owned Interconnection Facilities – The equipment and devices owned by Company that are required to permit an energy storage 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., Energy Storage Services 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 an energy storage project in response to a Company RFP.

1.2 – ABBREVIATIONS

1. ADSS – All Dielectric Self-Supporting
2. BESS – Battery Energy Storage System
3. COIF – Company-Owned Interconnection Facilities
4. CSAT – Control System Acceptance Test
5. CT – Current Transformer
6. DFR – Digital Fault Recorder
7. DTT – Direct Transfer Trip
8. FS – Facility Study
9. GCP – Grid Connection Point
10. HVAC – Heating, Ventilation, and Air Conditioning
11. IRS – Interconnection Requirements Study (includes both SIS and FS)

12. NDA – Non-Disclosure Agreement
13. OPGW- Optical Ground Wire
14. POI – Point of Interconnection
15. PT – Potential Transformer
16. RTU – Remote Terminal Unit
17. SCADA – Supervisory Control and Data Acquisition
18. SIS – System Impact Study
19. UFLS – Under-Frequency Load Shed

1.3 – FACILITIES AT PROPOSER SITE

1. Proposer shall be responsible for obtaining all permitting and any land rights required that are not provided by Company.
2. Except for costs agreed to be paid by Company under Item 3 below, Proposer shall be responsible for the design, procurement, and construction of all facilities at the BESS 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 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.)

1.4 – [NOT USED]

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. 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.

SECTION 2 – INTERCONNECTION REQUIREMENTS

Section 2 will provide information on the interconnection requirements and responsibilities.

2.1 – COIF REQUIREMENTS

Please see Attachment 1 for single-line diagram showing the interconnection requirements. Proposers should do their own due diligence for costs to meet the technical requirements and bring the project to commercial operations. Company costs will be the same for all proposed projects.

Company will build COIF up to the switch on the Seller side of the demarcation shown on Attachment 1. Proposer to build facilities to meet at that point.

2.2 – TELECOMMUNICATIONS REQUIREMENTS

Please refer to the RFP for functional requirements for the project. Company will install a fiber-optic cable between Hawi Substation and the project site. Proposer will need to provide/install a patch panel in a communications cabinet at the project site for Company to terminate the fiber cables.

2.3 – TYPICAL SECURITY REQUIREMENTS

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.

SECTION 3 – TYPICAL COMPANY DURATIONS FOR INTERCONNECTION PROJECTS

The tables below in Section 3 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 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.

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
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	12-18 months	Procurement of materials typically happens at 60% design completion
Construction Phase		
Construction	10-12 months	Based on scope/complexity of work
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.
Notes		
For Company-Build projects, the Engineering Phase includes Company design & review of Company-Owned Interconnection Facilities (COIF) & reviews of Proposer-Owned Interconnection Facilities (SOIF) supporting/impacting COIF.		

DRAFT

Additional notes to be added to the North Kohala Microgrid BESS Project Single Line Diagram

PROPOSED PROJECT NAME:	North Kohala Microgrid BESS
PROPOSED PROJECT SIZE:	5 MW, 30 MWh BESS (Minimum)
CUSTOMER SLD REVISION NUMBER AND DATE:	
HELCO SLD REVISION NUMBER AND DATE:	Revision 0, 09-09-2021
HELCO SUBSTATION:	Hawi
HELCO 34KV CIRCUIT:	3300 Line
HELCO 34KV CIRCUIT BREAKER #:	TBD

Transmission Planning Notes

1. Customer to ensure manual closing of Project breaker XX-1[TBD] shall be allowed for the following conditions under coordination with the Company system operator:
    a. 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°
    b. Dead-line (company-side) and hot bus (project-side) for black start capabilities
    c. Hot line (company-side) and dead bus (project-side)
2. There shall be no auto-reclosing on Project breaker XX-1[TBD].

Protection Notes

3. The 34 kV bus at [Name TBD] shall have dual differential bus protection relays which will trip and block close HELCO breakers 52-1 and 52-2, and Project breaker XX-1 via manual lockout relays.
4. All 34 kV lines at [Name TBD] HELCO side shall have dual redundant, high-speed line protection relays with separate and diverse communication channels. The remote ends at the Maliu Ridge, Halaula, and Hawi substations shall have the same.
5. Breaker failure of HELCO 34 kV breaker 52-1 or 52-2 at [Name TBD] HELCO side shall trip and block close Project breaker XX-1[TBD] via separate dedicated lockout relay.
6. Breaker failure of HELCO 34 kV breaker 52-1 (or 52-2, whichever is connected to HRD and Waimea) at [TBD] HELCO side shall trip and block close the Waimea and HRD breakers via a separate dedicated lockout relay.
7. Breaker failure of Project breaker XX-1[TBD] shall trip developer-owned dedicated lockout relay which will trip dedicated lockout relay in HELCO side. Dedicated lockout relay in HELCO side will trip and block close HELCO 34 kV breakers 52-1 and 52-2.

DRAFT

Design Notes

8. All 34 kV CT's are to be xxxx/5 MRCT's with relaying accuracy class C400 unless noted otherwise. MRCT's are to have full distributed windings on all taps and a minimum thermal rating factor of 2.0.
9. HELCO to provide two bi-directional A and B meters that records both import and export power and revenue metering CTs and PTs.
10. The Project will submit design drawings to HELCO for review and comment.
11. The communications for the primary and secondary pilot protection relays and breaker failure communication for the Developer tie line must be on diverse communication routes.
12. For Telecom requirements (such as communications, etc.), refer to the Telecom SLD.
13. For the microgrid control system design and operation philosophy, refer to the Appendix O of the RFP.

System Operations Notes

14. Upon simultaneous communication channels failure longer than 6 seconds for the following channels:
    a. (only applicable if HELCO applies Line Diff Protection) Protection Channels X & Y (as applicable) HELCO-owned protection relay to initiate a "loss of protection communication" alarm to HELCO dispatch.
        i. After 30 seconds of simultaneous failure the HELCO-owned relays are to provide signal to Project to initiate Project perform a controlled ramp of the plant output to 0 MW net. At zero (0) MW, Project to trip Project breaker XX-1[TBD]
    b. Telemetry and Control Channels A & B HELCO-owned RTU to initiate a "loss of communication" alarm to HELCO dispatch.
15. The following Developer's inputs shall be provided and direct hard wired to HELCO's recorder:
    a. Status of all Developer's 35kV breaker
    b. Status of all lockouts for Developer's breaker
    c. 34kV voltage (3-ph) at point of interconnection
    d. 34kV current (3-ph) at point of interconnection
16. HELCO load dispatcher shall be enabled to issue the following to the Facility via SCADA interface:
    a. Active power set point control signal (analog MW); and
    b. Voltage (analog kV) set point control signal.
    c. Frequency Response mode (droop, isochronous, disabled)
    d. Grid Forming Control (enable/disable)

DRAFT

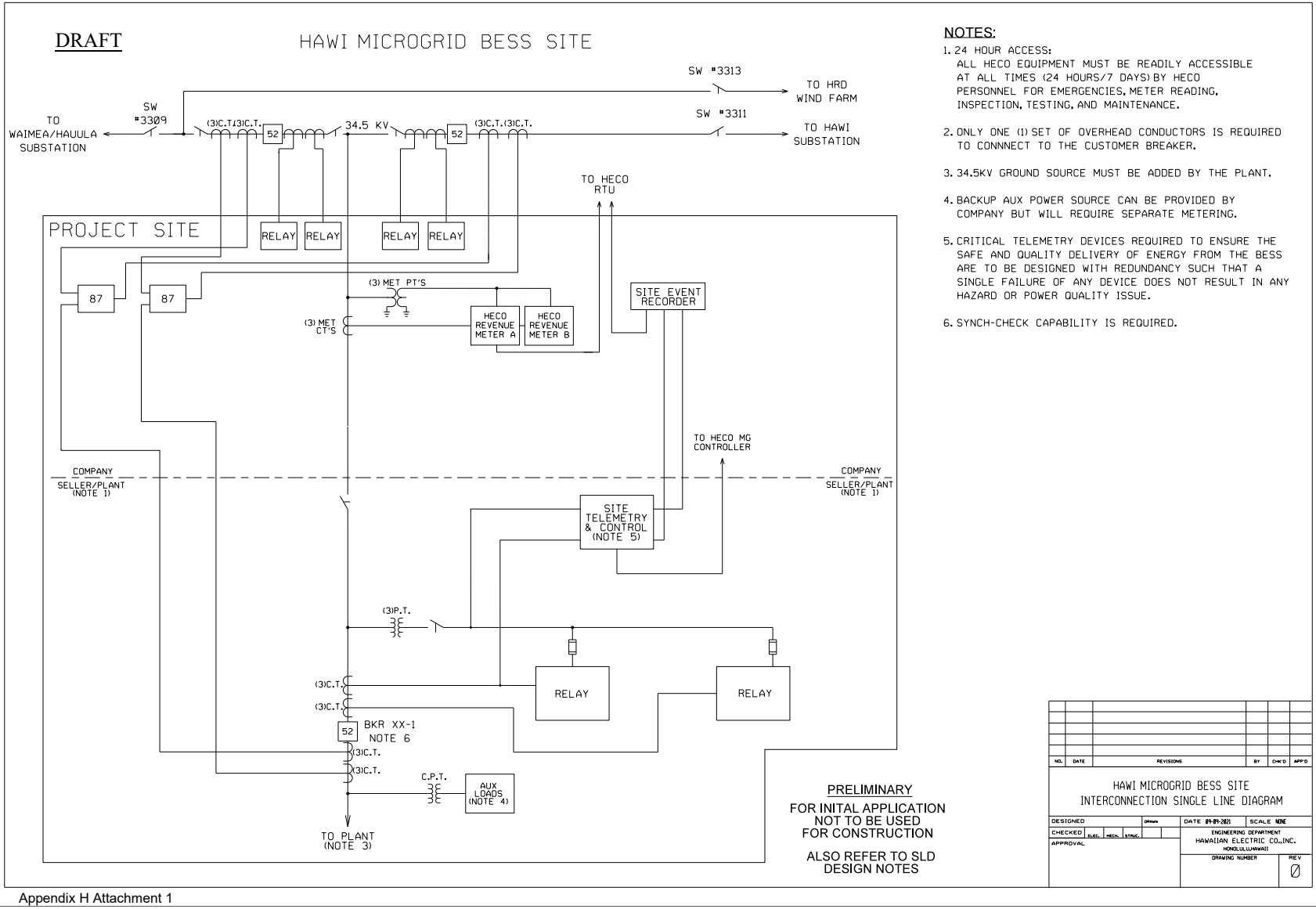
e. Transition to islanding Mode (enable/ disable)

f. 34kV Project breaker (trip/close)

17. 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.

18. The Project will provide the following signals for telemetering to the HELCO RTU:
    a. 34kV line amps (3 phase), watts, vars, and voltage (3 phase)
    b. Status of the Project breaker XX-1[TBD]]
    c. Status of all lockouts
    d. Active Power Control Interface Status indicating Local vs. HELCO
    e. Latest received active power set point
    f. Automatic Voltage Regulator Status – Normal or Alarm (regulator On or Off)
    g. Grid Forming Status (Enabled/Disabled)
    h. Frequency Response mode (droop, isochronous, disabled)
    i. Latest received voltage setpoint (kV)
    j. Status for each inverter
    k. MW output for each inverter
    l. MW set point for each inverter
    m. BESS State of Charge (%)
    n. Available Maximum Ramp Rate (MW/min)
    o. Power Production of Facility (MW)
    p. Number of Inverters Available
    q. Facility Inverter Availability (%)
    r. Frequency Droop percent and deadband settings (% & Hz)

19. Each of the following initiates a separate alarm to HELCO load dispatcher:
    a. Protection and RTU Loss of Communication



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. ONLY ONE (1) SET OF OVERHEAD CONDUCTORS IS REQUIRED TO CONNNECT TO THE CUSTOMER BREAKER.
3. 34.5KV GROUND SOURCE MUST BE ADDED BY THE PLANT.
4. BACKUP AUX POWER SOURCE CAN BE PROVIDED BY COMPANY BUT WILL REQUIRE SEPARATE METERING.
5. CRITICAL TELEMETRY DEVICES REQUIRED TO ENSURE THE SAFE AND QUALITY DELIVERY OF ENERGY FROM THE BESS ARE TO BE DESIGNED WITH REDUNDANCY SUCH THAT A SINGLE FAILURE OF ANY DEVICE DOES NOT RESULT IN ANY HAZARD OR POWER QUALITY ISSUE.
6. SYNCH-CHECK CAPABILITY IS REQUIRED.

PRELIMINARY

FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION

ALSO REFER TO SLD
DESIGN NOTES

NO.	DATE	REVISIONS	BY	CHK'D	APP'D

HAWI MICROGRID BESS SITE
INTERCONNECTION SINGLE LINE DIAGRAM

DESIGNED	DRAWN	DATE 09-09-2021	SCALE NONE
CHECKED ELEC. MECH. STRUC.		ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO.,INC. HONOLULU,HAWAII	
APPROVAL		DRAWING NUMBER	REV Ø

REQUEST FOR PROPOSALS FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix I – RESERVED

Hawaiʻi Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix J – RESERVED

Hawaiʻi Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix K – Community Comments

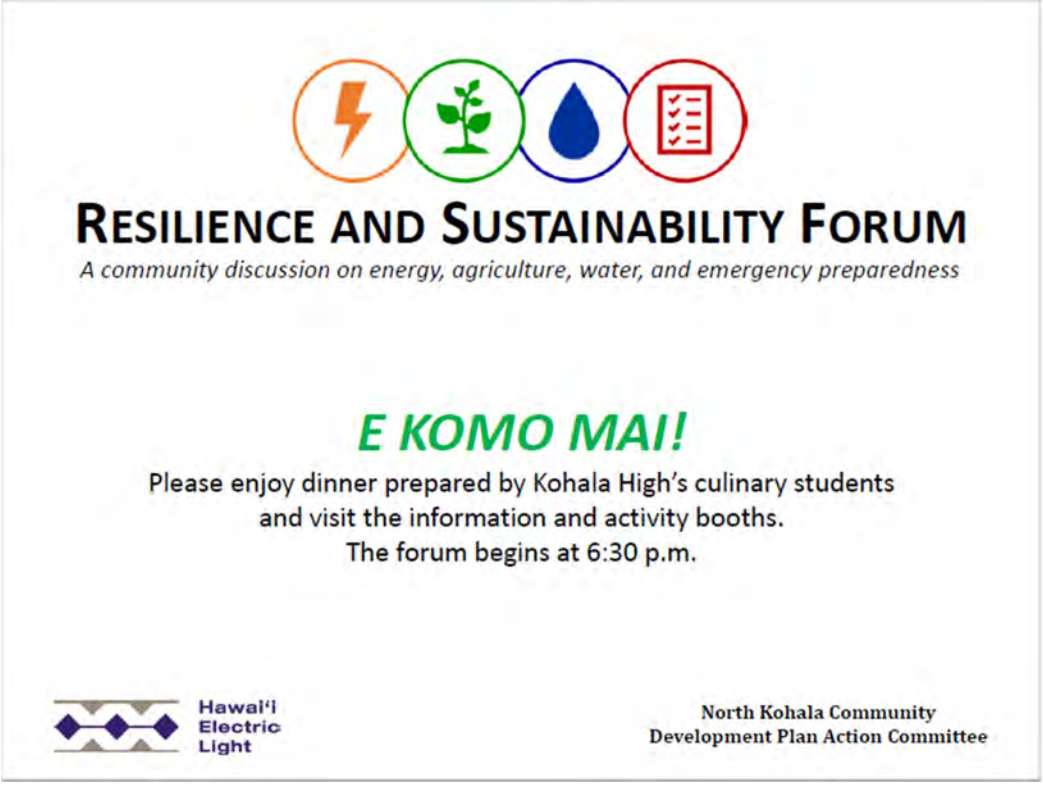
Hawaiʻi Electric Light

North Kohala Community Meeting Feedback

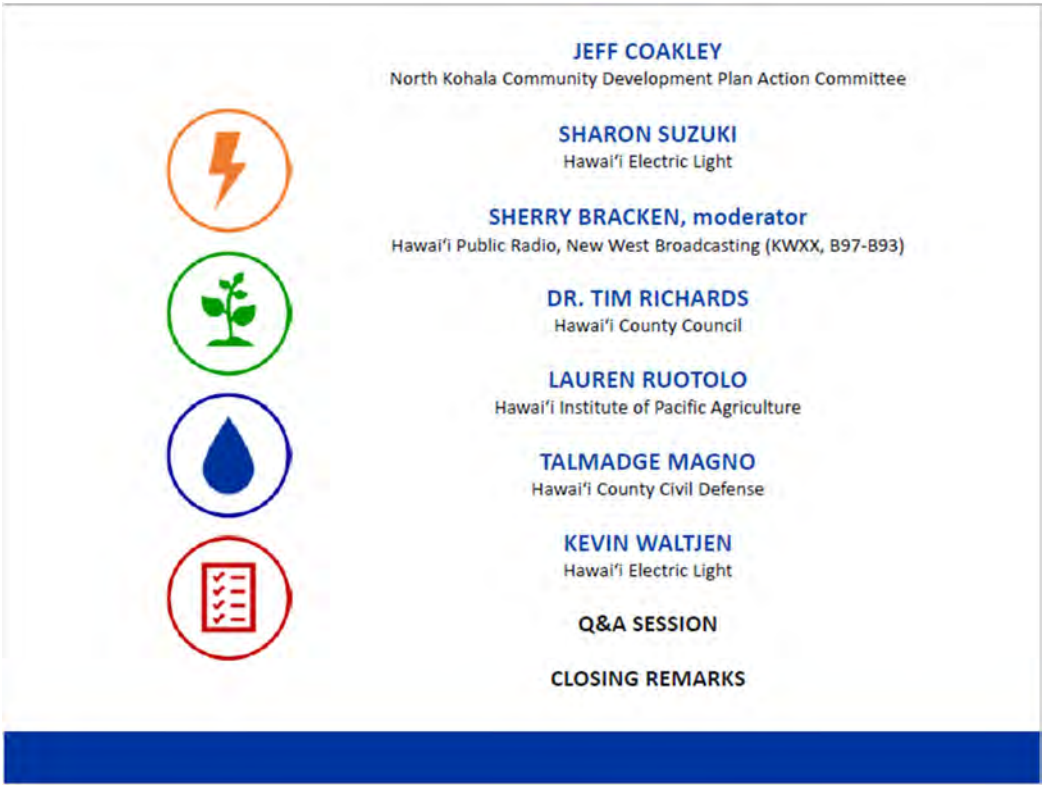
(written comments received by Hawai'i Electric Light Co., Ltd.)

The Company held two community meetings, a Resilience and Sustainability Forum on November 7, 2019 and Building Resilience in North Kohala meeting on August 6, 2019. Provided below are the presentations used by the Company at the meetings, as well as question cards received from the community from the November 7, 2019 meeting.

November 7, 2019 - Resilience and Sustainability Forum Presentation




RESILIENCE AND SUSTAINABILITY FORUM
A community discussion on energy, agriculture, water, and emergency preparedness
November 7, 2019
Kohala High School
Hawai'i Electric Light
North Kohala Community Development Plan Action Committee


JEFF COAKLEY
North Kohala Community Development Plan Action Committee
SHARON SUZUKI
Hawai'i Electric Light
SHERRY BRACKEN, moderator
Hawai'i Public Radio, New West Broadcasting (KWXX, B97-B93)
DR. TIM RICHARDS
Hawai'i County Council
LAUREN RUOTOLO
Hawai'i Institute of Pacific Agriculture
TALMADGE MAGNO
Hawai'i County Civil Defense
KEVIN WALTJEN
Hawai'i Electric Light
Q&A SESSION
CLOSING REMARKS

Welcome and Introductions

Moderator Sherry Bracken
Hawai'i Public Radio, New West Broadcasting (KWXX, B97-B93)

Dr. Tim Richards

Hawai'i County Council
Chair of the Committee on Agriculture, Water, Energy and Environmental Management
Vice Chair of the Committee on Finance

Hawai‘i Institute of Pacific Agriculture

Lauren Ruotolo
Director of Development

Hawaii Institute of Pacific Agriculture's role in the Food System

Farmers

Educators

HIP agriculture

Aggregators

FARM

YOUTH EDUCATION

- Farm Field Trips
- In-School Workshops

YOUTH EDUCATION

- Mahi'ai Mentorship & Internship Program

Garden to Cafeteria & Farm to School

Post-Secondary Education

- Farmer Apprenticeship

Food Aggregation

- The Kohala Food Hub

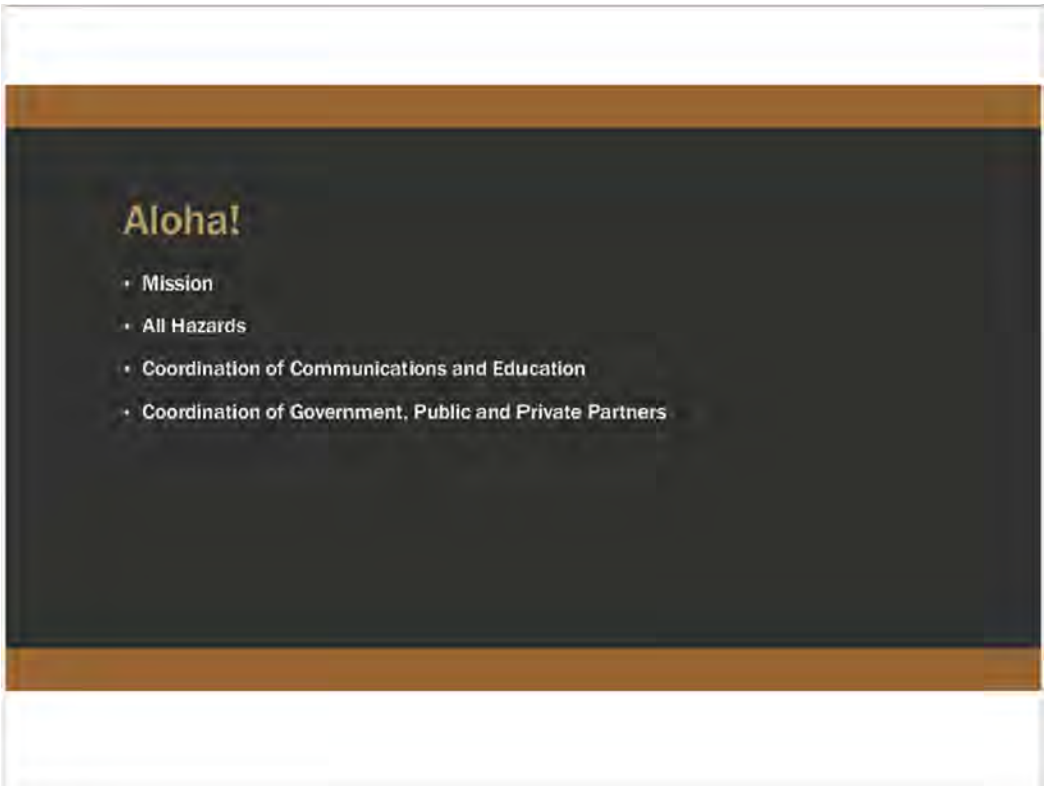
The Kohala Food Hub

Looking Ahead

More info:
www.hipagriculture.org
institute@hipagriculture.org

Hawai‘i County Civil Defense

Talmadge Magno
Administrator

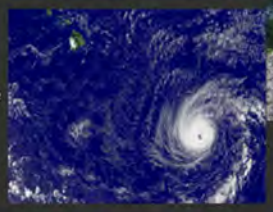

Aloha!
Mission
All Hazards
Coordination of Communications and Education
Coordination of Government, Public and Private Partners


Mission:
Prepare for and Respond to Emergencies and Disasters
Establish Resilient Communities
Provide Emergency Communications and Public Information
Establish Redundant Systems
Direct and Coordinate Planning, Response and Recovery actions
Establish Comprehensive Plans

Responds to all hazards and associated risks...

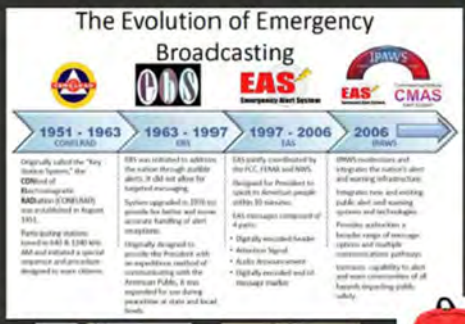
- Earthquake
- Tsunami
- Tropical Cyclone
- Wild Fire
- Flash Flood
- Lava Flow
- Vector-borne Disease
- Dam Failure
- HAZMAT






Critical Functions of Civil Defense

- Mass Notification
  - IPAWS
  - EAS
  - Everbridge
  - FaceBook
  - Twitter
  - Na Leo TV and Online
  - Website
  - Outreach and Education



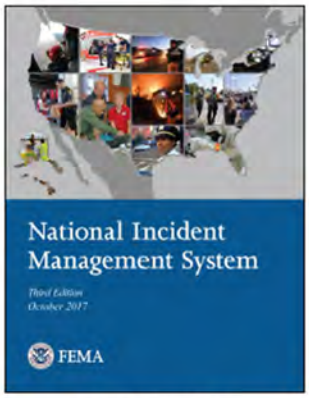



Hawai'i Electric Light

Kevin Waltjen
Director – Hawai'i Island

3 Pillars of Resilience

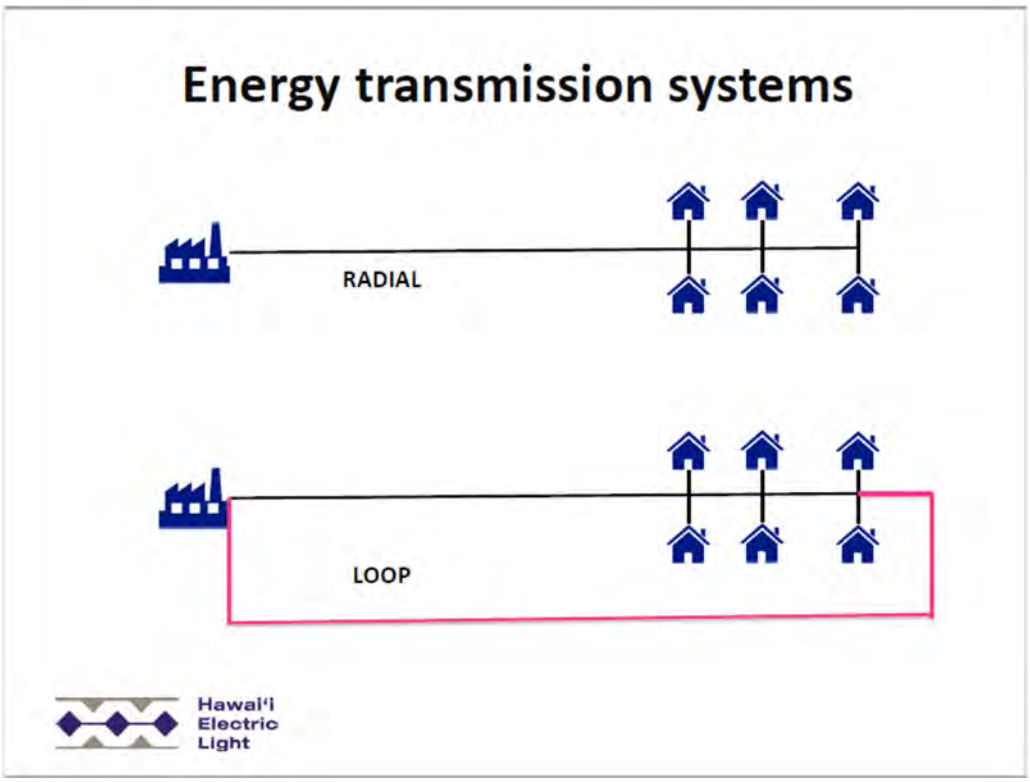
COMMUNITY PREPAREDNESS

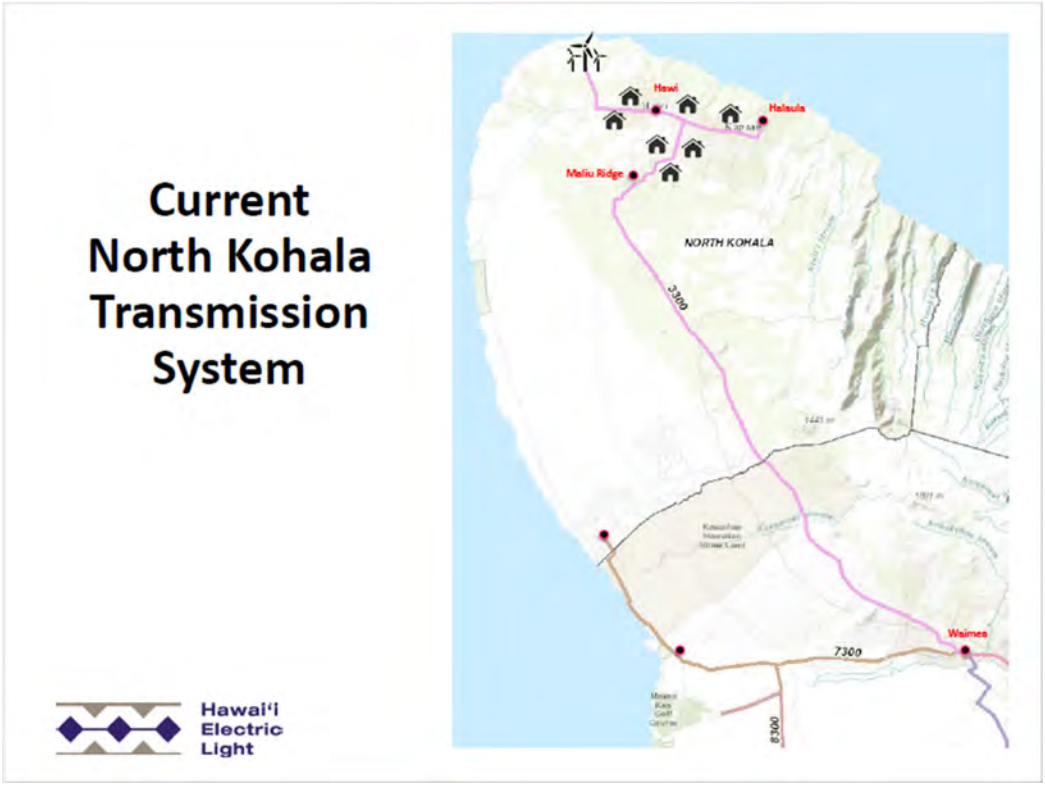


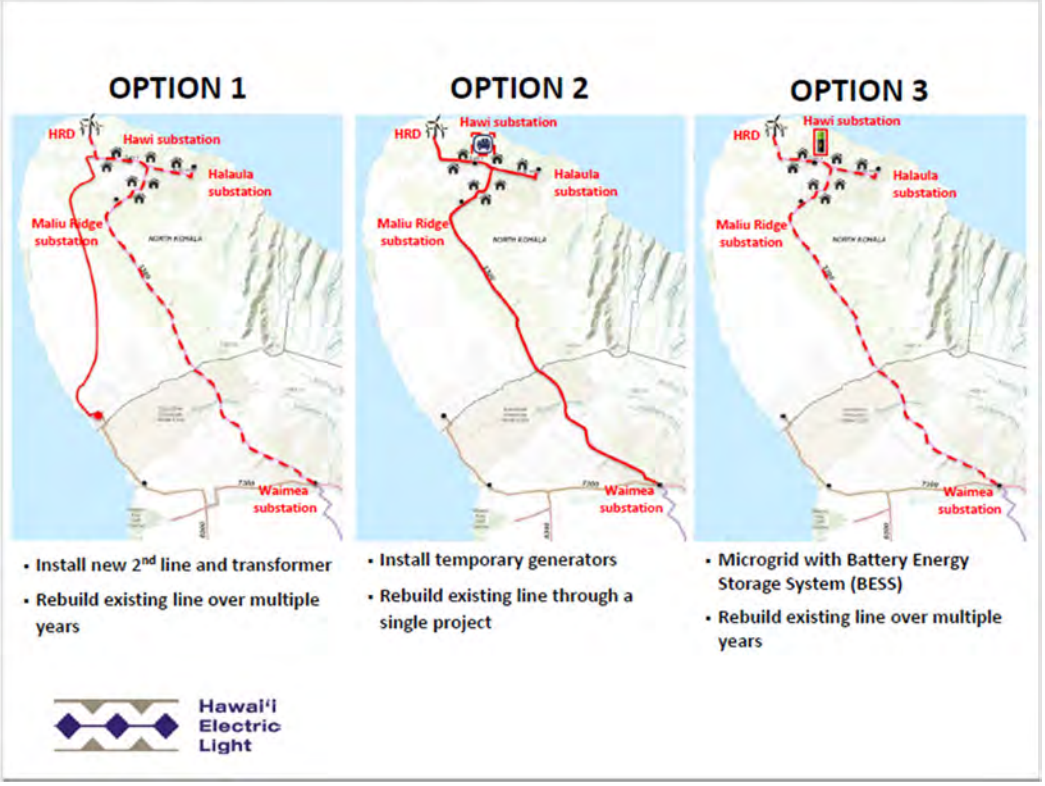
GOVERNMENT PREPAREDNESS

RISK REDUCTION

Hawai'i Electric Light


Energy transmission systems
RADIAL
LOOP
Hawai'i Electric Light


Current North Kohala Transmission System
Hawi
Halaula
Maliu Ridge
NORTH KOHALA
2300
7300
8300
Waimea
Hawai'i Electric Light


OPTION 1
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Hawi substation
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• Install new 2nd line and transformer
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Hawai'i Electric Light


Next Steps
2018
Refine
Options
2019 (late)
Select Option
PUC Application
2007
Planning
2019
Engage with
Community Partners
2020
Finalize
Design
Hawai'i Electric Light

Q&A Session

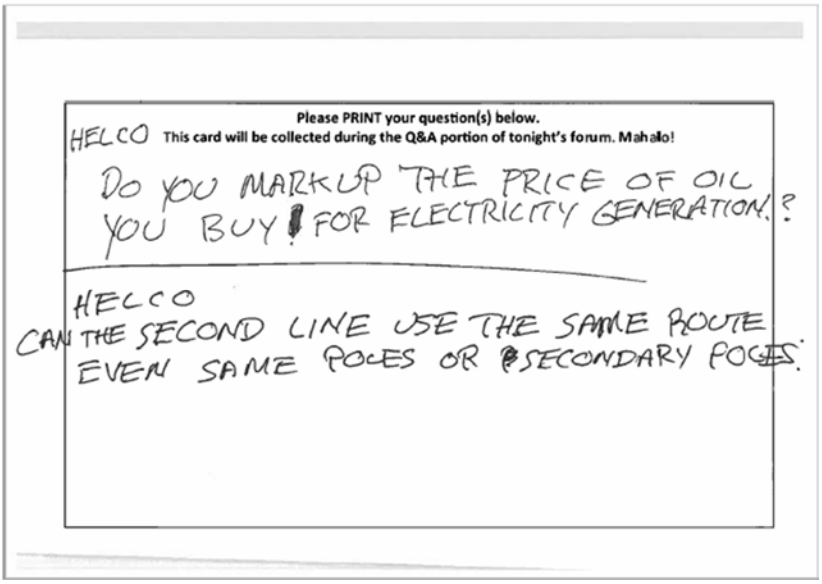
Please write your question on the card provided and hand it to one of the event staff. Questions will be read by our moderator.

Mahalo!

Hawai'i Electric Light

North Kohala Community
Development Plan Action Committee

November 7, 2019 - Resilience and Sustainability Forum Question Cards
*Names have been redacted.



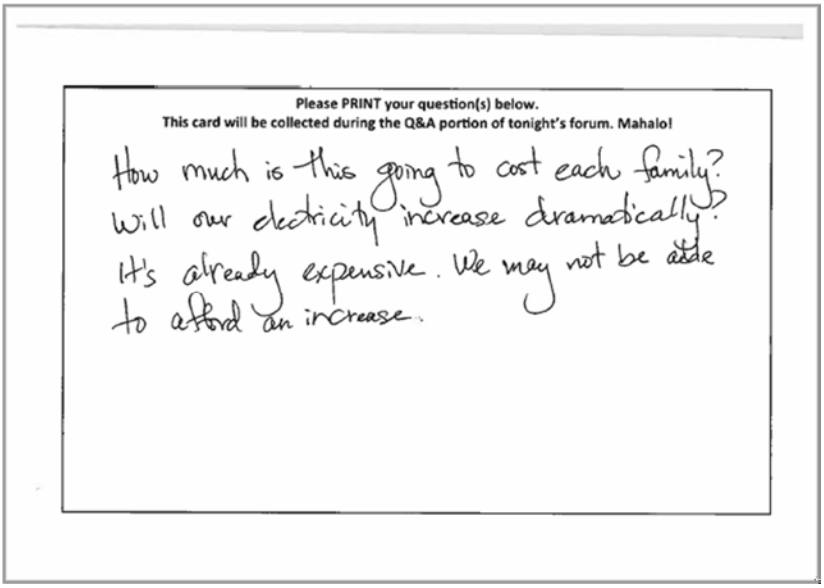
Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!

HELCO

DO YOU MARKUP THE PRICE OF OIL YOU BUY FOR ELECTRICITY GENERATION?

HELCO

CAN THE SECOND LINE USE THE SAME ROUTE EVEN SAME POLES OR SECONDARY POLES.



Please PRINT your question(s) below.
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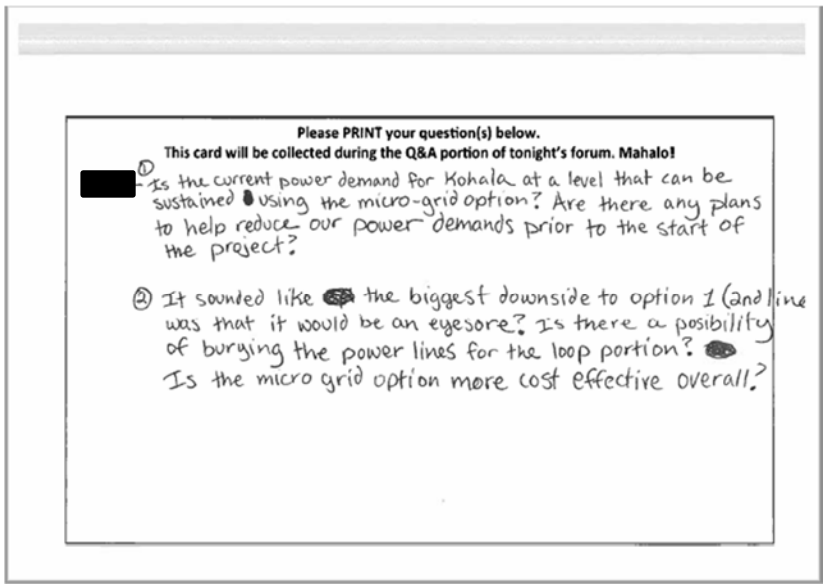
How much is this going to cost each family? Will our electricity increase dramatically? It's already expensive. We may not be able to afford an increase.



Please PRINT your question(s) below.
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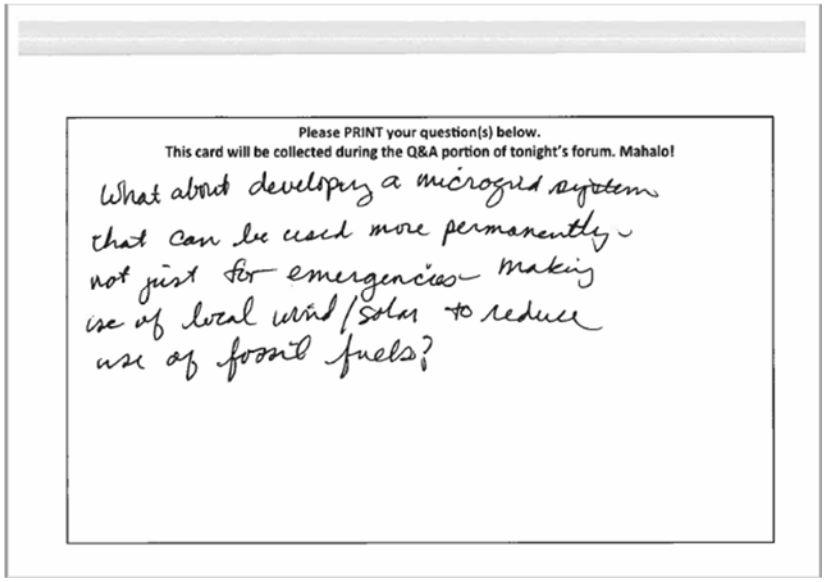
[redacted] ① Is the current power demand for Kohala at a level that can be sustained using the micro-grid option? Are there any plans to help reduce our power demands prior to the start of the project?

② It sounded like [redacted] the biggest downside to option 1 (and line was that it would be an eyesore? Is there a posibility of burying the power lines for the loop portion? [redacted] Is the micro grid option more cost effective overall?



Please PRINT your question(s) below.
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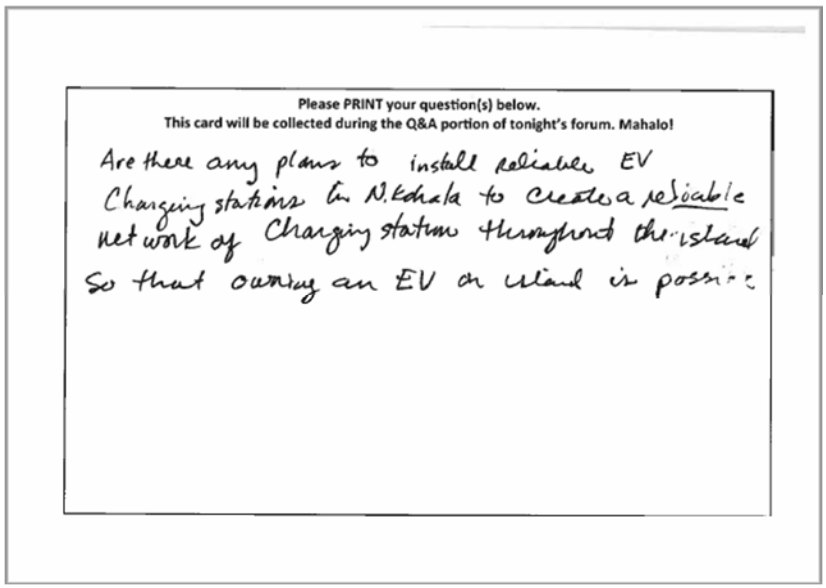
What about developing a microgrid system that can be used more permanently - not just for emergencies - making use of local wind/solar to reduce use of fossil fuels?



Please PRINT your question(s) below.
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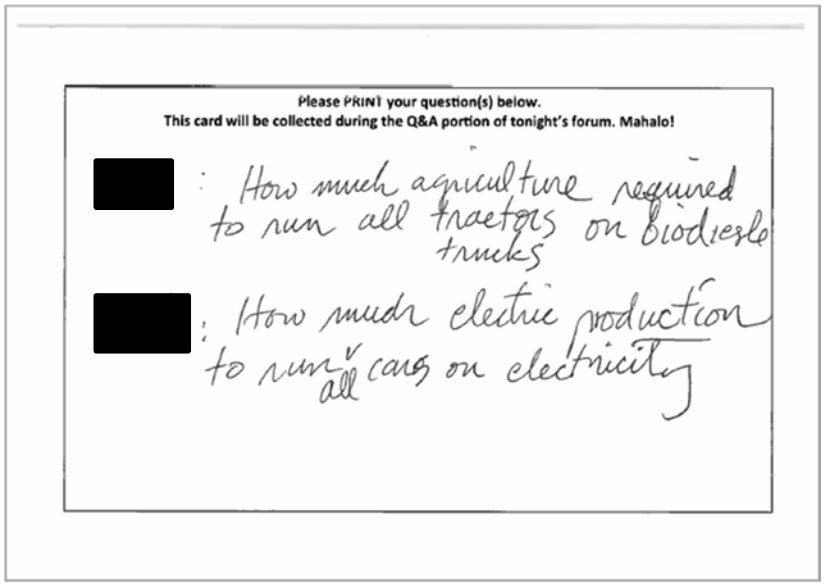
Are there any plans to install reliable EV Charging stations in N. Kohala to create a reliable network of Charging stations throughout the island so that owning an EV on island is possible



Please PRINT your question(s) below.
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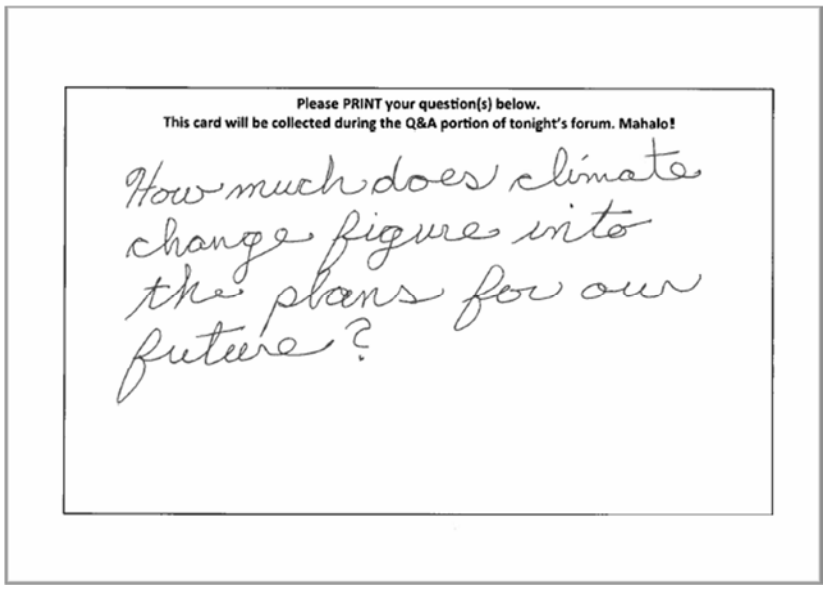
[redacted]: How much agriculture required to run all tractors on biodiesel trucks

[redacted]: How much electric production to run all cars on electricity



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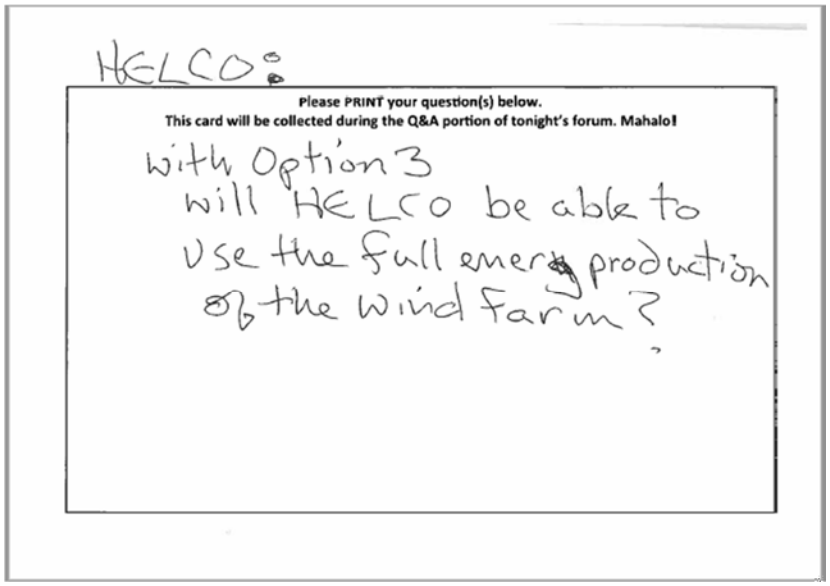
How much does climate change figures into the plans for our future?



HELCO:

Please PRINT your question(s) below.
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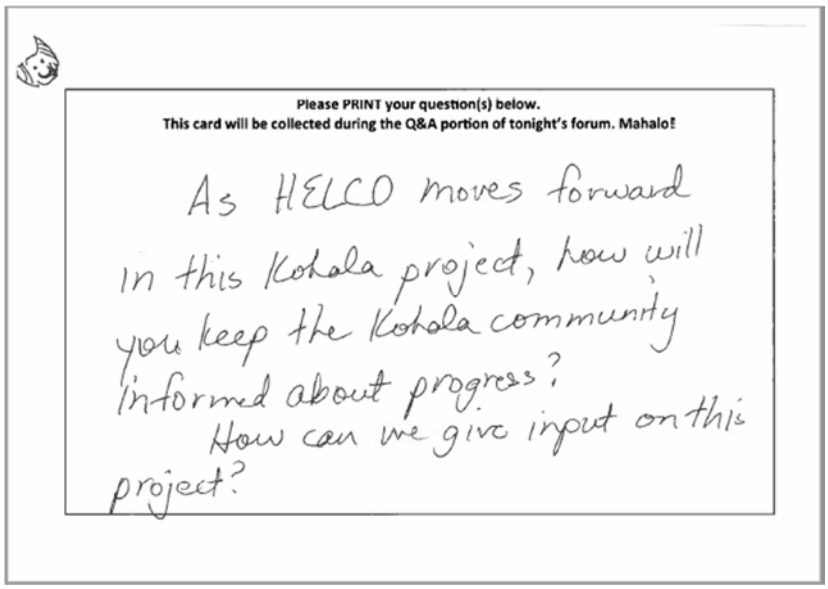
With Option 3 will HELCO be able to use the full energy production of the wind farm?



Please PRINT your question(s) below.
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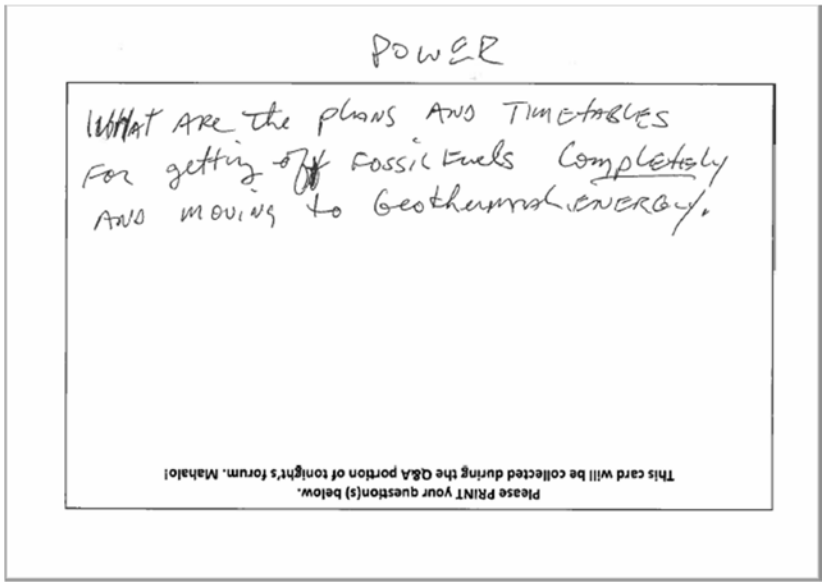
As HELCO moves forward in this Kohala project, how will you keep the Kohala community informed about progress?
How can we give input on this project?



POWER

What are the plans and timetables for getting off fossil fuels completely and moving to geothermal energy.

Please PRINT your question(s) below.
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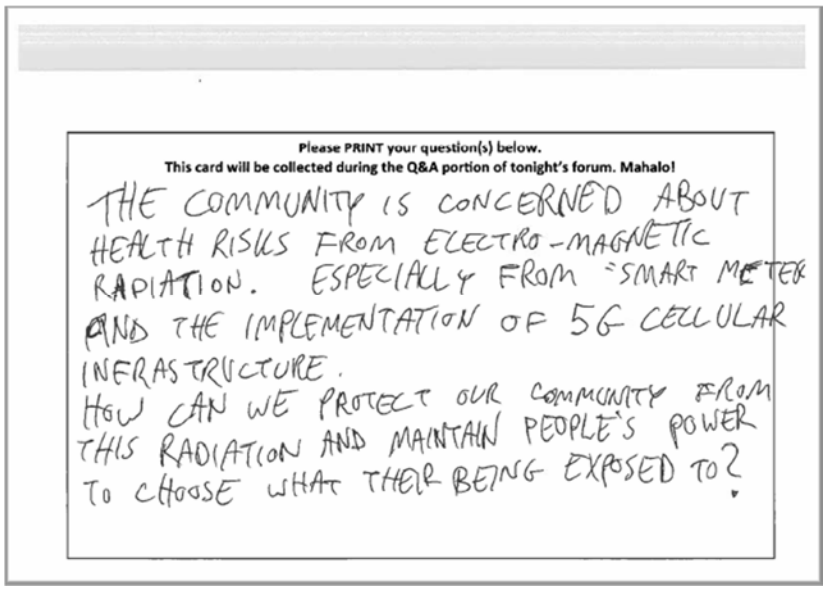

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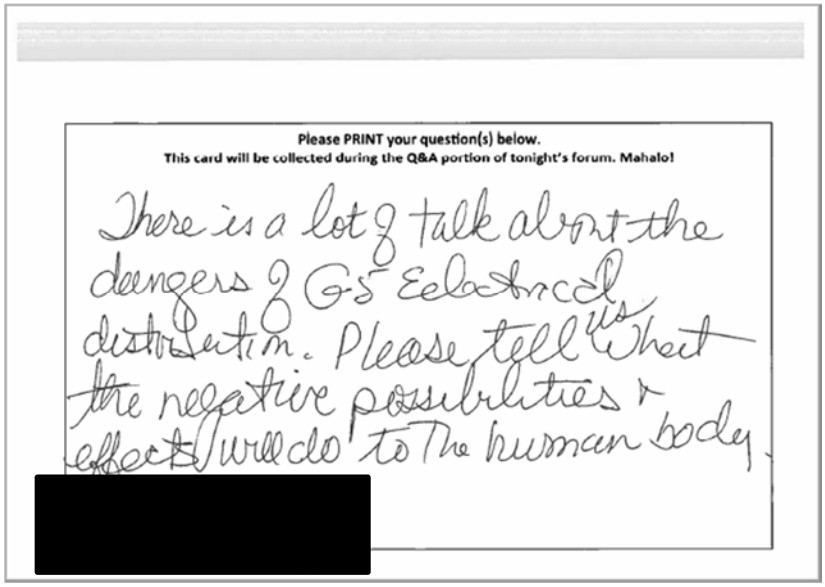
THE COMMUNITY IS CONCERNED ABOUT HEALTH RISKS FROM ELECTRO-MAGNETIC RADIATION. ESPECIALLY FROM "SMART METER" AND THE IMPLEMENTATION OF 5G CELLULAR INFRASTRUCTURE.
HOW CAN WE PROTECT OUR COMMUNITY FROM THIS RADIATION AND MAINTAIN PEOPLE'S POWER TO CHOOSE WHAT THEIR BEING EXPOSED TO?



Please PRINT your question(s) below.
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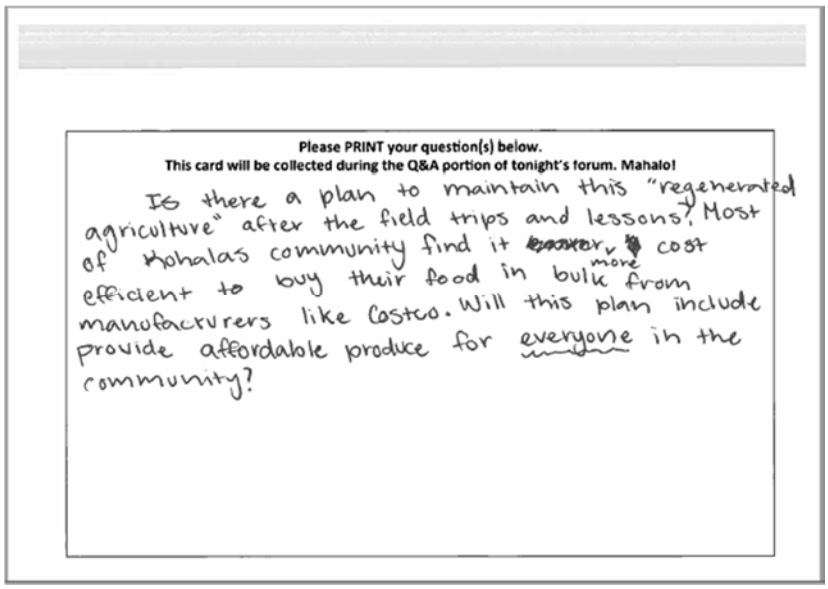
There is a lot of talk about the dangers of 5G Electrical distribution. Please tell us what the negative possibilities + effects will do to the human body.

[redacted]



Please PRINT your question(s) below.
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Is there a plan to maintain this "regenerated agriculture" after the field trips and lessons? Most of Kohalas community find it ~~[illegible]~~, more cost efficient to buy their food in bulk from manufacturers like Costco. Will this plan include provide affordable produce for everyone in the community?

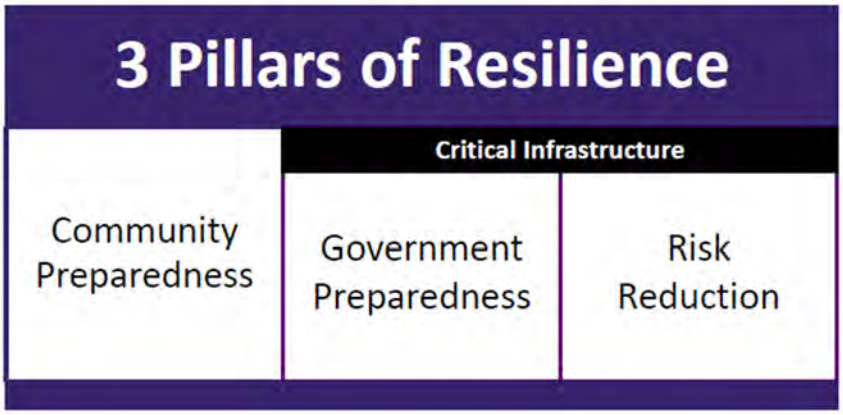
August 6, 2019 - Building Resilience in North Kohala Presentation

Building Resilience in North Kohala

A collaborative approach to strengthening our communities

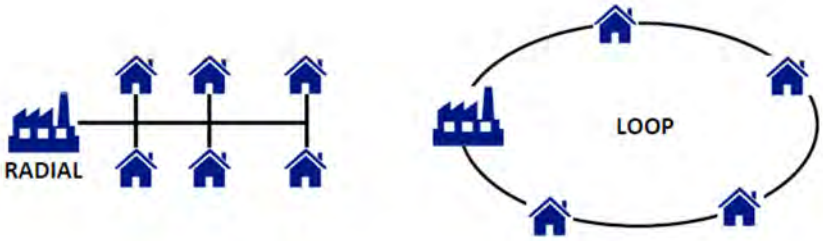
Hawaiian Electric
Maui Electric
Hawai'i Electric Light

3 Pillars of Resilience



Hawaiian Electric
Maui Electric
Hawai'i Electric Light

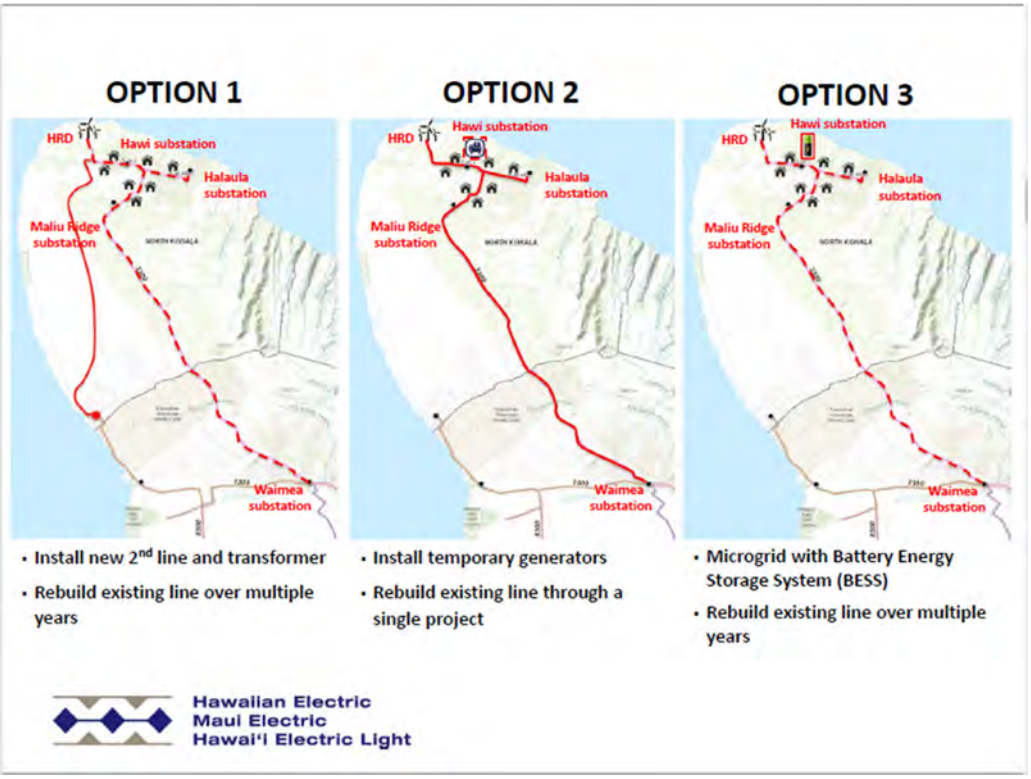
Energy transmission systems



Hawaiian Electric
Maui Electric
Hawai'i Electric Light

Current North Kohala Transmission System

Hawaiian Electric
Maui Electric
Hawai'i Electric Light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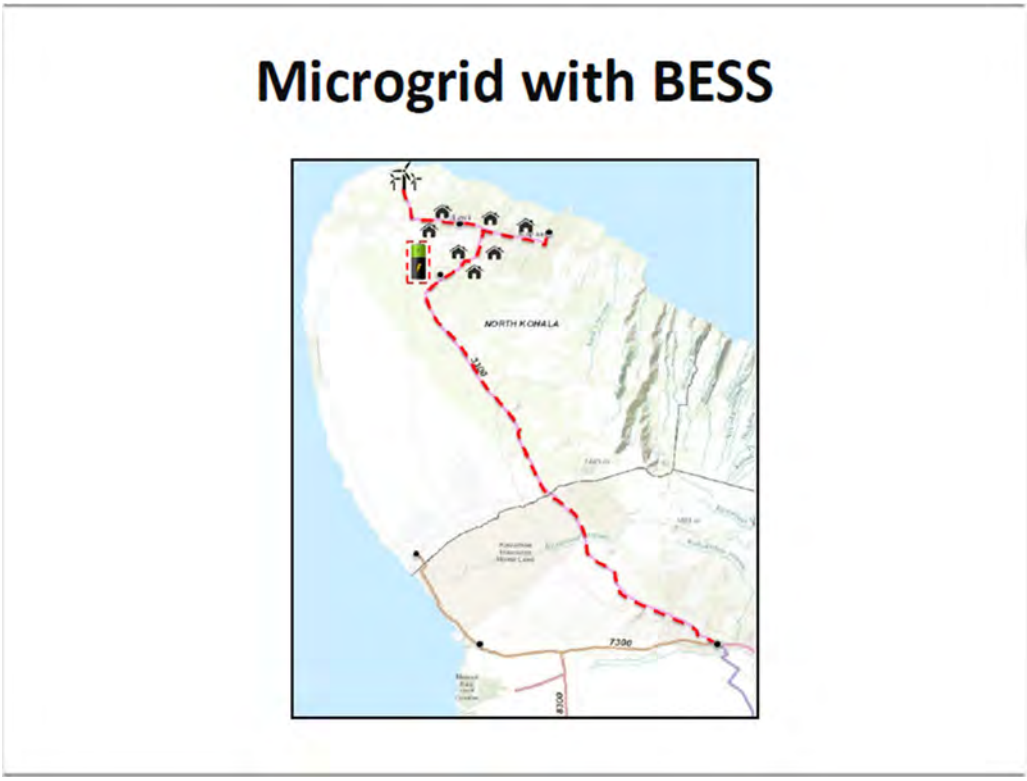
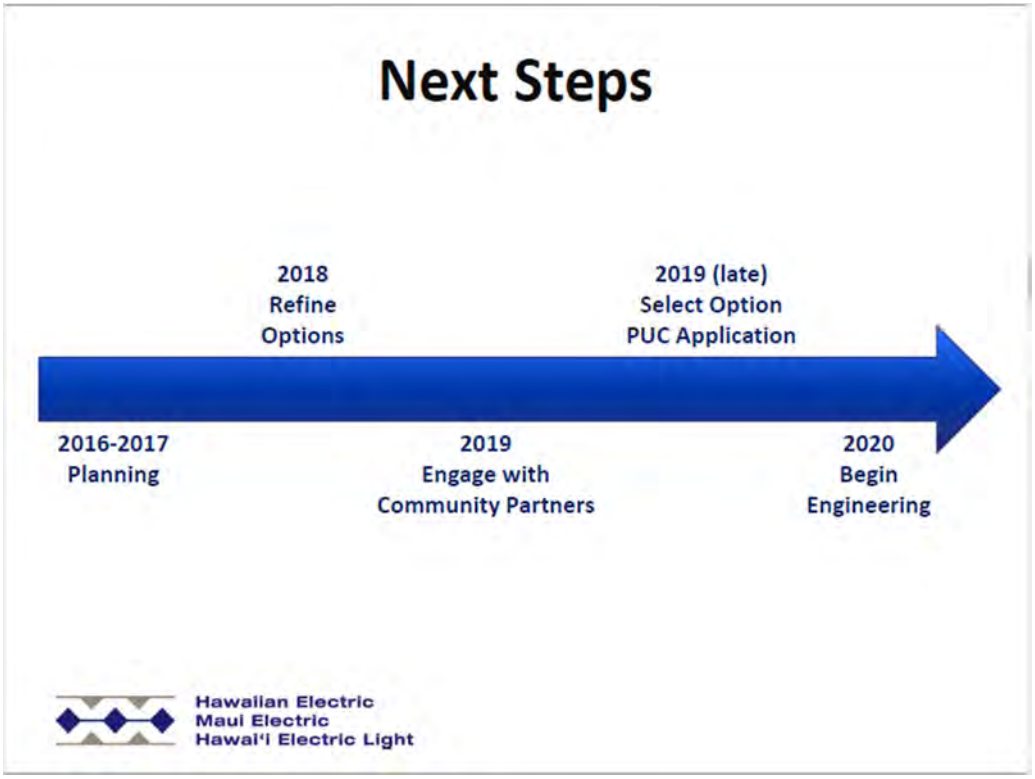

Microgrid with BESS
NORTH KOHALA
7300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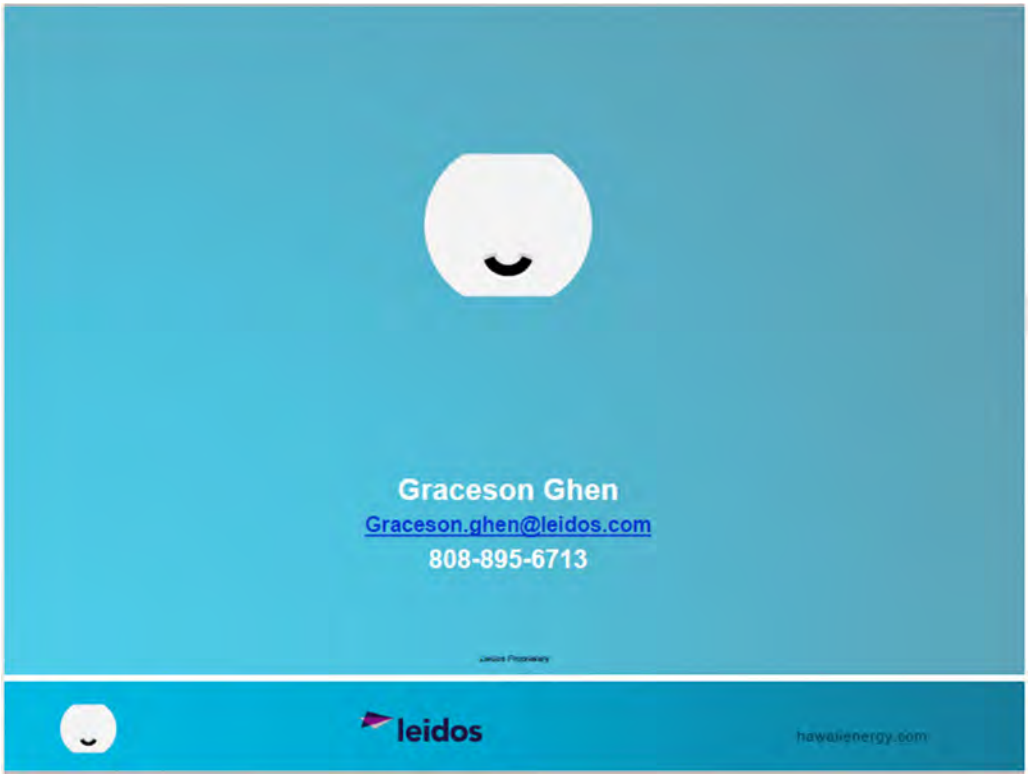
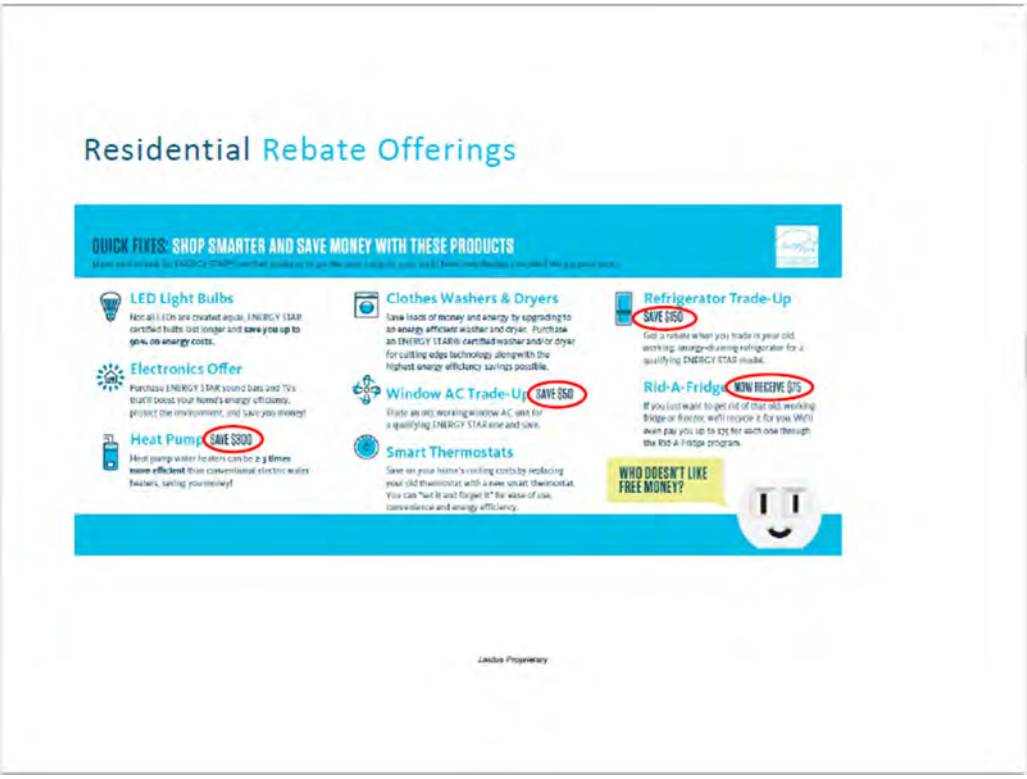
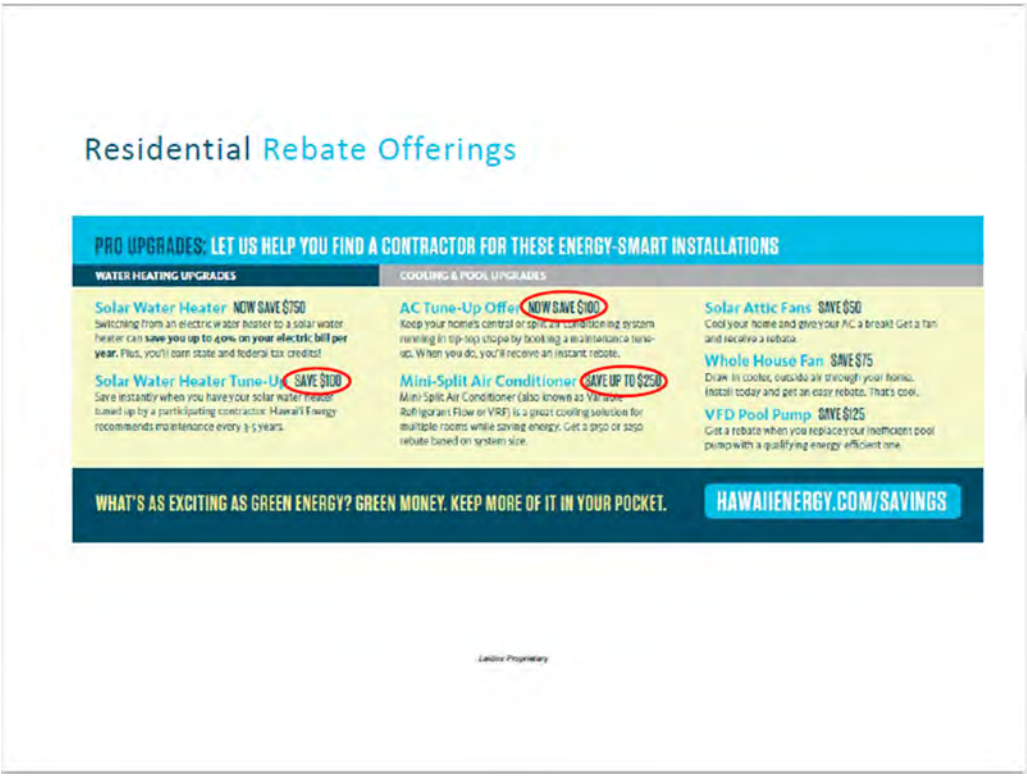

Graceson Ghen
Graceson.ghen@leidos.com
808-895-6713
leidos
hawaiienergy.com


Residential Rebate Offerings
QUICK FIXES: SHOP SMARTER AND SAVE MONEY WITH THESE PRODUCTS
LED Light Bulbs
Electronics Offer
Heat Pump SAVE $800
Clothes Washers & Dryers
Window AC Trade-Up SAVE $50
Smart Thermostats
Refrigerator Trade-Up
SAVE $150
Rid-A-Fridge NOW RECEIVE $75
WHO DOESN'T LIKE FREE MONEY?


Residential Rebate Offerings
PRO UPGRADES: LET US HELP YOU FIND A CONTRACTOR FOR THESE ENERGY-SMART INSTALLATIONS
WATER HEATING UPGRADES
COOLING & POOL UPGRADES
Solar Water Heater NOW SAVE $750
Solar Water Heater Tune-Up SAVE $100
AC Tune-Up Offer NOW SAVE $100
Mini-Split Air Conditioner SAVE UP TO $250
Solar Attic Fans SAVE $50
Whole House Fan SAVE $75
VFD Pool Pump SAVE $125
WHAT'S AS EXCITING AS GREEN ENERGY? GREEN MONEY. KEEP MORE OF IT IN YOUR POCKET.
HAWAIIENERGY.COM/SAVINGS

Energy Smart 4 Homes

Lexicon Proprietary

Community Workshops

- Flip the switch on the often confusing concepts of energy usage
- Local presenters with creative & relatable delivery styles who are networked within hard-to-reach communities across the islands

Lexicon Proprietary

Lānaʻi Community Projects

Energy Smart 4 Homes
- Over 250 units retrofitted at 3 multifamily properties
- ~200 Pūlama Lānaʻi-owned single family residences retrofitted to date

Bulk Purchase Appliance Program
- Over 100 Pūlama Lānaʻi refrigerator replacements
- 13 Lānaʻi City community refrigerator replacements

Community Workshops & Literacy
- Multiple community presentations and workshops

Commercial Rebates

Hawai'i Energy

Hawai'i Energy makes it easy to implement your projects quick. We help you identify energy-saving opportunities and provide attractive financial incentives that significantly offset costs, reduce payback periods and positively impact your bottom line. To get started, call us at **839-8880** (Oahu) or **1-877-231-8222** (toll-free neighbor islands), or visit our website at HawaiiEnergy.com/for-businesses.

PLEASE NOTE: All incentives require a completed and signed application, relevant worksheets, product specifications and project invoices. All documents can be submitted via email to HawaiiEnergy@leidos.com or faxed to (808) 441-6068.

HVAC

Important: AC system size is taken as the AHRI rated system capacity, not the nominal system capacity which is rounded to the nearest whole number.
Please see corresponding worksheet for eligibility requirements

Chillers	
Positive Displacement	$45/ton
Centrifugal	$45/ton
Air-cooled with condenser	$45/ton

Air-Cooled Package/Split	
Package/Split	Tier 1: $100/ton
Package/Split	Tier 2: $175/ton
Note: Refer to custom program for units with capacities greater than 600 tons.	

Water-Cooled Package/Split	
Package/Split	$100/ton

Water-source Heat Pumps	
Water-source heat pump	$100/ton

VRF Multisplit AC and Heat Pumps	
Multisplit AC	$250/ton

Variable Frequency Drives	
VFD controls for HVAC fans; new construction > 7.5 hp not eligible	$50 per HP
VFD controls for Chiller and Condenser Water pumps	$80 per HP

Refrigeration & Kitchen Equipment

Refrigerators: New unit must be > 16 cu. ft.; trade-in must be > 14 cu. ft.
Night covers: On existing open refrigerated display cases
Anti-Sweat Heater Controls: Replacement of existing controls. New refrigerators/ freezers and walk-in units manufactured after 1/1/09 not eligible.

Specialty Kitchen Equipment	
Equipment Category	**Incentive**
ENERGY STAR® Refrigerators (Trade-In)	$150 per unit
Refrigerated Night Covers	$10 per lin. ft.
Anti-Sweat Heater Controls (for refrigerator/freezer)	$40 per lin. ft.
Kitchen Exhaust Hood Demand Ventilation	$700 per HP
ENERGY STAR® Commercial Kitchen Equipment	Various- see separate worksheet

Advanced Metering & Controls

Advanced metering: Retrofit only; new construction not eligible. Condos and small businesses must be master-metered. Projects are subject to pre-approval and meet other Program requirements.

Advanced Metering	
Equipment Category	**Incentive**
Condominium submetering	$150 per billed unit
Small Business / Tenant submetering	$150 per billed unit

Controls	
Equipment Category	**Incentive**
Energy Management Systems	$0.12 per kWh
Hotel Room EMS	$75 per unit
Garage Exhaust Ventilation	$0.12 per kWh
Vending Machines	$50 per system

Pumps&Motors

Pre-approval required.
Existing equipment must not have VFD and all motors must meet CEE Premium Efficiency Standards.
Please see corresponding worksheet for eligibility requirements

Motors	
Equipment Category	**Incentive**
Electronically Commutative Motors (ECM) & Speed Control for **Commercial Refrigeration** (retrofit only)	$85 each
Electronically Commutative Motors (ECM) & Speed Control for **HVAC Fan Coil Applications**	$55 each
Premium Efficiency Motors	Refer to worksheet

Pumps	
Equipment Category	**Incentive**
VFDs for Pool Pumps	$225 per HP
• Pre-approval required • 3HP or less (> 3HP see Customized) • Existing equipment must not have VFD	
VFD Domestic Water Pump System	$3,000 + $80 per HP reduced
• Retrofit only; pre-approval required • Total HP must ≤ to existing system; limited to system reduction of ≤ 129HP. • All motors must meet CEE Premium Efficiency Standards.	

Water Heating

Heat pump requirements

Tons	5 - 11.25	>11.25
COP	3.3	3.2

Please see corresponding worksheet for eligibility requirements

Commercial Water Heating	
Equipment Category	**Incentive**
Heat Pump Water Heating	Based on size and COP
Commercial Solar Water Heating	$250 / ton de-rated output

Energy Services & Maintenance

Requires pre-approval and must meet other Program requirements, see corresponding Rules & Requirements for details.
**Incentives capped by building square footage as well.*

Energy Services & Maintenance	
Equipment Category	**Incentive**
Re-Commissioning & Retro-Commissioning	Total incentive is the **sum of two parts below**, capped at a total of 80% of total project cost: 1. The lessor of: 50% of study cost, $0.20 per square foot, or $15,000. 2. Additional $0.08 per kWh saved in the first year
Energy Audits	~~85% up to $5,000*~~ ~~50% up to $15,000*~~
Energy Study	Additional incentives available to implement measures as a result of the study

Building Envelope

New construction, shaded or north-facing windows not eligible. Solar heat gain coefficient must be < 0.435 or shading coefficient < 0.5.

Building Envelope	
Equipment Category	**Incentive**
Window Film	$0.85 per sq. ft.
Incentive rate is halved for replacement window film, see worksheet	

Customized Projects

Lighting projects must have a payback > 6 months. Non-lighting projects must have a payback > 1 year.
Incentive cannot exceed 50% of incremental project cost.

Custom		
Equipment Category	**Equipment Life**	**Incentive**
Lighting Projects	≤ 5 Years	$0.08 / kWh
Lighting Projects	> 5 Years	$0.12 / kWh
Non-Lighting Projects	≤ 5 Years	$0.08 / kWh
Non-Lighting Projects	> 5 Years	$0.12 / kWh

Transformers

- Commercial customer-sited and customer-owned transformer (not utility-owned)
- Must meet or exceed DOE 2016 efficiency standards
- Existing transformer must be manufactured/installed prior to 2007
  - Transformers installed after 2007 may still qualify on a case-by-case basis; contact Hawaii Energy for more information.
- Must serve the same load as the pre-existing transformer

> 1000 kVA may qualify under the Custom Incentive Program

Transformers	
Equipment Category	**Incentive**
New Transformer	$0.12 / kWh + $125 per kW (5pm-9pm)

Electric Vehicle Charging Stations

Important:
Available through September 30, 2019.

- UL-listed, dual-port, Level 2 EV Charging Stations with network connectivity
- Charging station usage for tenants, employees and/or authorized guests; not intended for fleet-charging, individually-owned parking stalls or single family homes
- Appropriate number of parking stalls and regulatory signage required

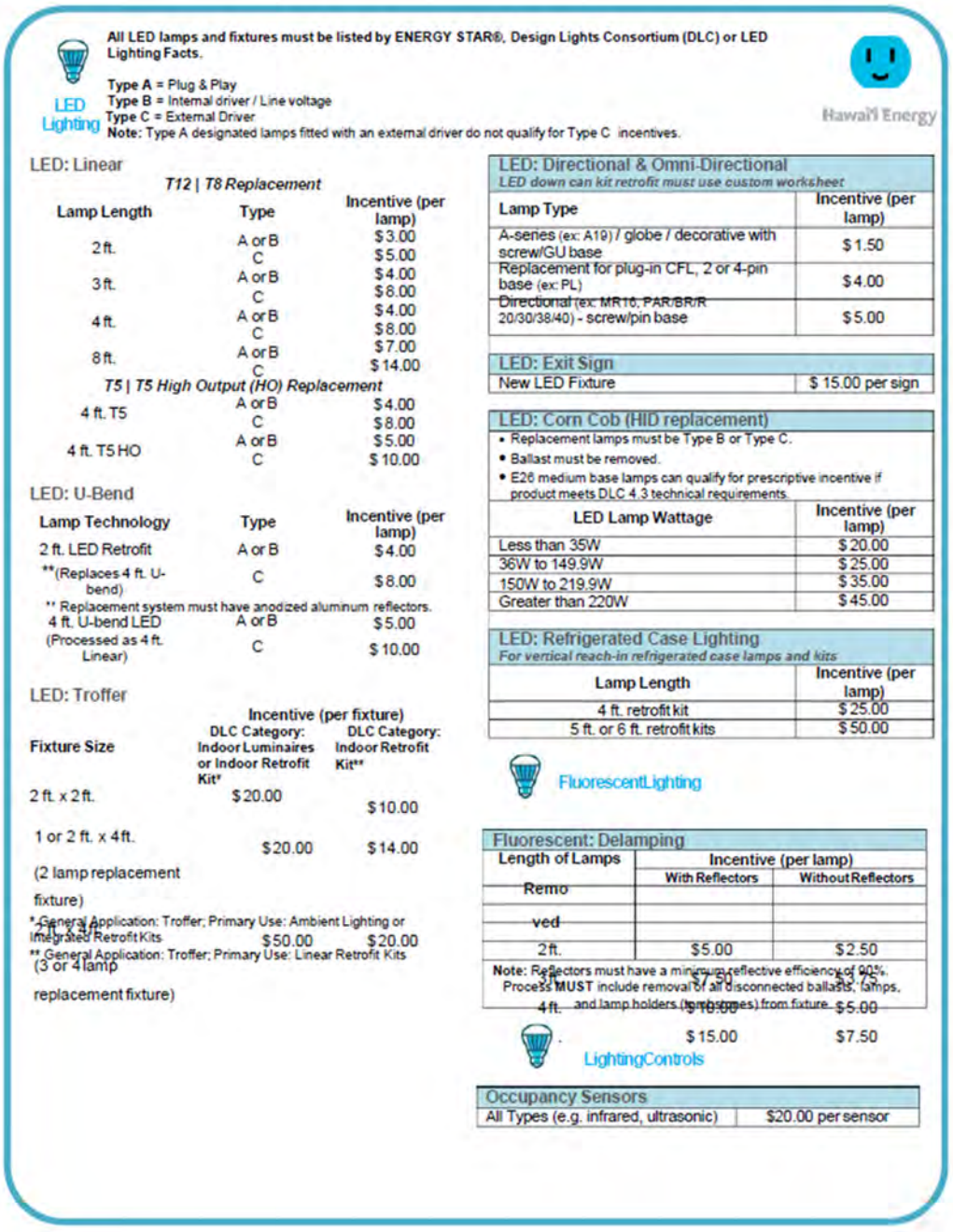
For more details:
https://hawaiienergy.com/evcharging

EV Charging Stations	
Equipment Category	**Incentive**
Workplace: Place of business generally open between 7am-5pm	**New installation: $5,000 per dual-port station** (i.e., no pre-existing station)
Multi-Unit Dwelling: Apartment/Condos with at least 8 parking stalls	**Retrofit: $1,500 per dual-port station** (i.e., upgrade from a single-port to dual-port station)

New Construction

For new construction projects, contact us at hawaiienergy@leidos.com

New Construction	
Equipment Category	**Incentive**
Various measures that exceed code and will result in a more energy-efficient project, subject to Hawai'i Energy approval.	Customized



LED Lighting

All LED lamps and fixtures must be listed by ENERGY STAR®, Design Lights Consortium (DLC) or LED Lighting Facts.

Type A = Plug & Play
Type B = Internal driver / Line voltage
Type C = External Driver
Note: Type A designated lamps fitted with an external driver do not qualify for Type C incentives.

Hawai'i Energy

LED: Linear

T12 | T8 Replacement

Lamp Length	Type	Incentive (per lamp)
2 ft.	A or B	$3.00
	C	$5.00
3 ft.	A or B	$4.00
	C	$8.00
4 ft.	A or B	$4.00
	C	$8.00
8 ft.	A or B	$7.00
	C	$14.00

T5 | T5 High Output (HO) Replacement

4 ft. T5	A or B	$4.00
	C	$8.00
4 ft. T5 HO	A or B	$5.00
	C	$10.00

LED: U-Bend

Lamp Technology	Type	Incentive (per lamp)
2 ft. LED Retrofit	A or B	$4.00
**(Replaces 4 ft. U-bend)	C	$8.00

** Replacement system must have anodized aluminum reflectors.

4 ft. U-bend LED (Processed as 4 ft. Linear)	A or B	$5.00
	C	$10.00

LED: Troffer

Fixture Size	Incentive (per fixture) DLC Category: Indoor Luminaires or Indoor Retrofit Kit*	DLC Category: Indoor Retrofit Kit**
2 ft. x 2 ft.	$20.00	$10.00
1 or 2 ft. x 4 ft. (2 lamp replacement fixture)	$20.00	$14.00
2 ft. x 4 ft. (3 or 4 lamp replacement fixture)	$50.00	$20.00

* General Application: Troffer; Primary Use: Ambient Lighting or Integrated Retrofit Kits
** General Application: Troffer; Primary Use: Linear Retrofit Kits

LED: Directional & Omni-Directional

LED down can kit retrofit must use custom worksheet

Lamp Type	Incentive (per lamp)
A-series (ex: A19) / globe / decorative with screw/GU base	$1.50
Replacement for plug-in CFL, 2 or 4-pin base (ex: PL)	$4.00
Directional (ex: MR16, PAR/BR/R 20/30/38/40) - screw/pin base	$5.00

LED: Exit Sign

New LED Fixture	$ 15.00 per sign

LED: Corn Cob (HID replacement)

- Replacement lamps must be Type B or Type C.
- Ballast must be removed.
- E26 medium base lamps can qualify for prescriptive incentive if product meets DLC 4.3 technical requirements.

LED Lamp Wattage	Incentive (per lamp)
Less than 35W	$ 20.00
36W to 149.9W	$ 25.00
150W to 219.9W	$ 35.00
Greater than 220W	$ 45.00

LED: Refrigerated Case Lighting

For vertical reach-in refrigerated case lamps and kits

Lamp Length	Incentive (per lamp)
4 ft. retrofit kit	$ 25.00
5 ft. or 6 ft. retrofit kits	$ 50.00

FluorescentLighting

Fluorescent: Delamping

Length of Lamps Removed	Incentive (per lamp) With Reflectors	Without Reflectors
2 ft.	$5.00	$2.50
3 ft.	$7.50	$3.75
4 ft.	$10.00	$5.00
8 ft.	$15.00	$7.50

Note: Reflectors must have a minimum reflective efficiency of 90%. Process **MUST** include removal of all disconnected ballasts, lamps, and lamp holders (tombstones) from fixture.

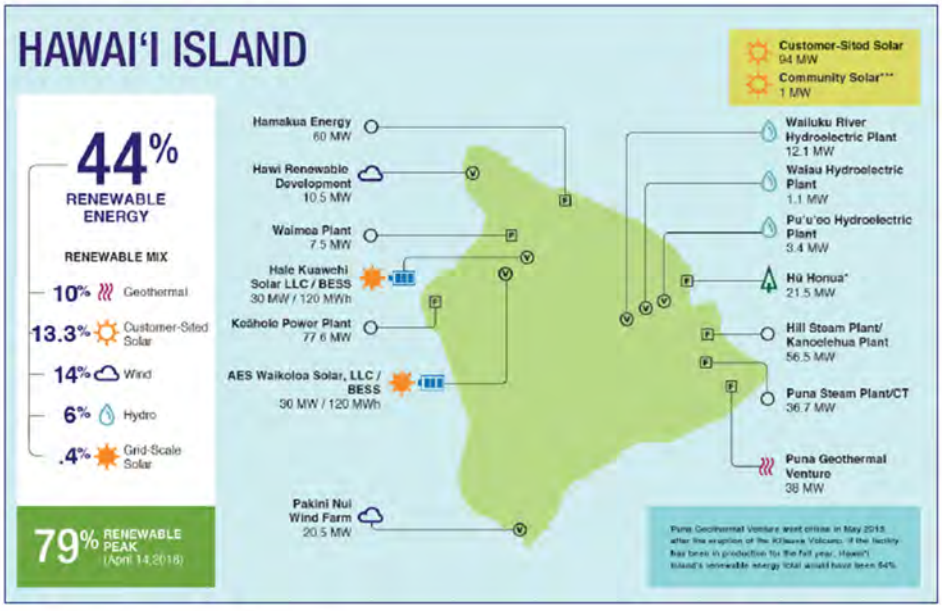
LightingControls

Occupancy Sensors

All Types (e.g. infrared, ultrasonic)	$20.00 per sensor

Feedback

Hawaiian Electric
Maui Electric
Hawai'i Electric Light



Hawaiian Electric
Maui Electric
Hawai'i Electric Light

Mahalo!

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix L – Energy Storage Services Agreement

NOTE: Please refer to Exhibit 5 of this February 28, 2023 filing for the Model Energy Storage Services Agreement

Hawaiʻi Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix M – RESERVED

Hawaiʻi Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAIʻI

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix N – RESERVED

Hawaiʻi Electric Light

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix O – Functional Requirements

Hawai‘i Electric Light

Table of Contents

1. Project Overview

The North Kohala Reliability Project will be designed to allow a segment of the North Kohala 34.5kV system including the Maliu Ridge, Halaula, and Hawi distribution substations to be operated safely and reliably as a microgrid isolated from the bulk Hawaii Electric Light (Company) power system utilizing a Battery Energy Storage System ("BESS"). The Hawi Renewable Development (HRD) wind farm located on the same radial segment of the Hawaii Electric Light power system will not be expected to operate in the microgrid island due to its size in comparison to the size of the microgrid, the controller complexity required to enable such operation, and the legacy of equipment used at the site. Further, an additional smaller microgrid allowing operation of just the Hawi Substation islanded independent of the 34kV system, utilizing the same BESS resource and interconnection equipment, is expected.

1.1 BESS Location, Interconnection, and Demarcation

The Company plans to acquire approximately 1.2 acres of land adjacent to the existing Hawi Distribution Substation ("Land") for sighting and interconnecting the BESS. The Land will be provided for the BESS developer to install the BESS. The Land includes the 34kV line tap where the Hawi Distribution Substation is connected and where additional microgrid interconnection equipment would be expected to be installed. The BESS provider will be expected to provide all equipment on the BESS side of the BESS 34kV breaker including the BESS 34kV breaker. The Company will be responsible for all equipment on the line side of the BESS 34kV breaker including but not limited to: the microgrid controller, the Hawi Isolation Breaker, and the Hawi Substation 34kV breaker; as well as other enabling equipment beyond the Hawi Interconnection including but not limited to the Maliu Ridge Isolation Switch, fault indicators, 34kV relay protection, and any additional PTs and CTs needed at the existing sites. A Conceptual SLD of the microgrid area depicting the above-described equipment is provided in Figure 1 below.

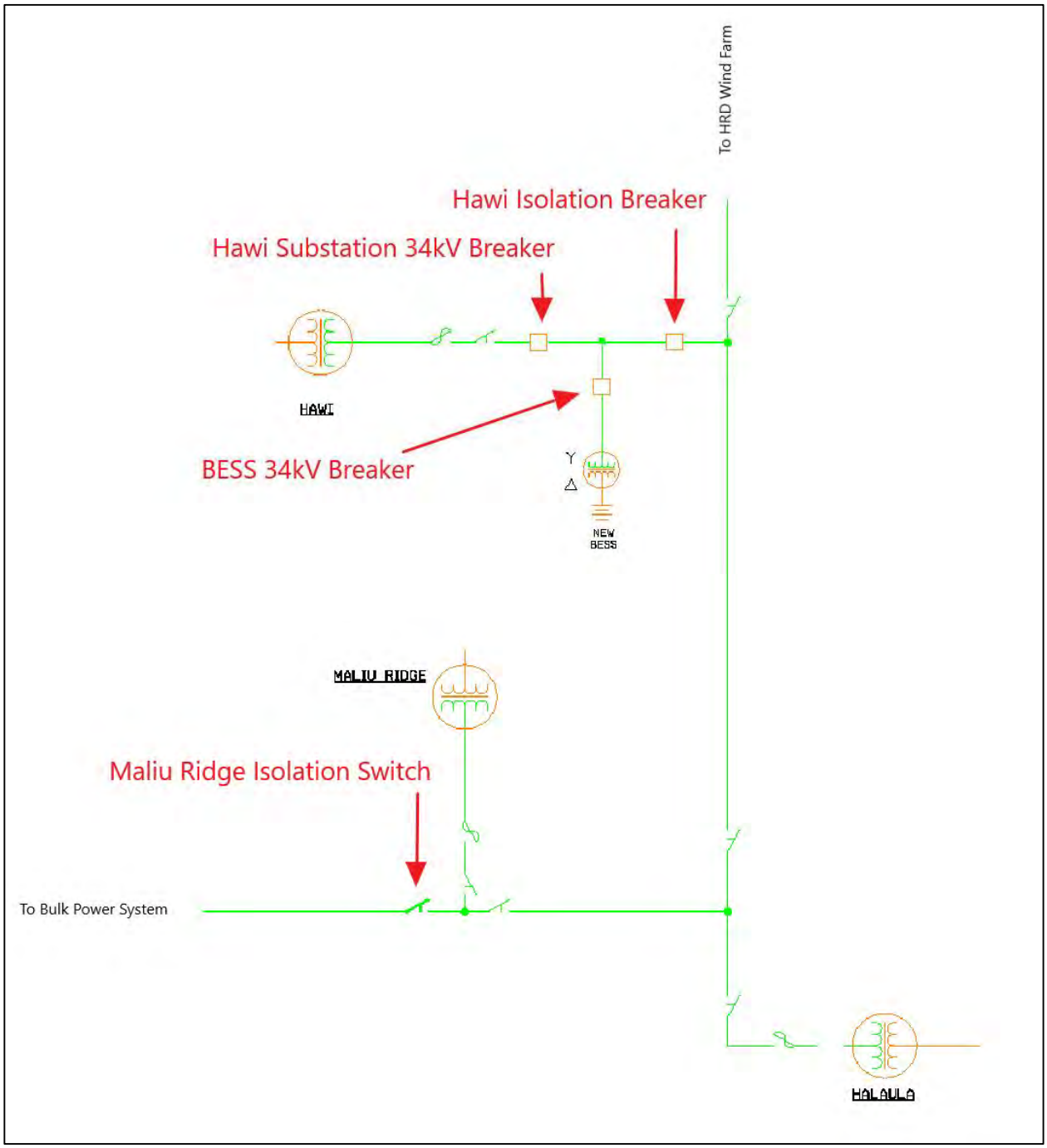


Figure 1. Conceptual SLD depicting the North Kohala Microgrid area and locations of equipment or interest.

1.2 Communications Requirements and Existing Infrastructure Capability

The Company will be responsible for all required inter microgrid communications links and communications links external to the microgrid utilizing the existing Company network infrastructure in the area. Details of how the BESS will communicate to the microgrid controller and the existing SCADA system will be established in more detailed design phases, but in general the BESS communications capability should be prepared to support a variety of possible hardware and protocol interfaces for ease of integration (i.e. fiber, copper, serial, IP, etc.). The interface between the

BESS communication system and the Company communication system will be achieved in a dedicated demarcation cabinet or acceptable equivalent.

An automation architecture diagram to depict the expected automation of the microgrid controller and devices it controls will be developed as part of the more detailed design. The automation architecture diagram will include decision blocks where manual controls are expected.

2. Microgrid Configurations and Transitions

The North Kohala microgrid is being designed to operate in two distinct islanded configurations.

2.1 Configuration 1: "North Kohala 34kV Microgrid"

This is the preferred configuration of the microgrid when system conditions allow (i.e. fault external to the 34 kV microgrid area). In this configuration the point of isolation from the larger power system will be at the Maliu Ridge Isolation Switch located near Maliu Ridge Distribution Substation and on the Waimea side of the Maliu Ridge substation 34kV tap such that the 34kV system between the Maliu Ridge, Halaula and Hawi substations is used to serve those stations in the microgrid.

Transitions to islanded operation in this configuration should include:

2.1.1 Configuration 1: Planned Transition

Upon a control signal from the system operator to initiate the transition to islanded operation, the microgrid will balance the power flow at the point of isolation in preparation for the isolation switch opening to achieve islanded operation. The actual operation of the isolation switch should be designed to be triggered automatically by the microgrid controller when conditions are met or manually by the system operator should manual operation be preferred or required.

2.1.2 Configuration 1: Unplanned Transition

Upon a sustained fault being detected and isolated by the Waimea and Hawi Renewable Development (HRD) 34kV breakers; the microgrid controller and system operator should be informed of the fault location. If the fault location is determined to be in the segment of line between Waimea and the Maliu Ridge Isolation Switch the Maliu Ridge Isolation Switch is to be opened by the microgrid controller to isolate the microgrid area from the fault and allow for restoration. Automation of the unplanned transition is the preferred design, but system operators can also be trained to perform steps if manual operations are required. The details of automation versus manual operations can be established in more detailed design stages and may be influenced by existing communications infrastructure and work practices.

2.2 Configuration 2: "Hawi Microgrid"

The Hawi Microgrid is an alternative configuration of the microgrid islanded area expected to be utilized only if system conditions do not allow for operation of the North Kohala 34kV Microgrid (i.e. fault internal to the 34 kV Microgrid). In the Hawi Microgrid configuration the point of isolation from the larger power system is expected to be at the Hawi Tap Breaker located on the 34kV tap to the Hawi substation such that the 34kV system between the Maliu Ridge, Halaula and Hawi will remain de-energized while Hawi is able to be energized through a very small segment of 34kV bus/line between the BESS and the Hawi distribution substation main power transformer.

Transitions to island in this configuration should include:

2.2.1 Configuration 2: Planned Transition

A planned transition to this configuration is not expected as the Hawi Microgrid is not expected to be leveraged for planned outages at this time. Should a need to operate in this configuration for planned outages be identified in future

work the planned transition to this configuration should be similar to that described for the North Kohala 34kV Microgrid configuration but using the Hawi Tap Breaker for isolation rather than the Maliu Ridge Isolation Switch, and would need to be commanded through a separate SCADA point than the North Kohala 34kV Microgrid to distinguish the expected islanding configuration for the microgrid controller to transition to.

2.2.2 Configuration 2: Unplanned Transition

Upon a fault being detected and isolated by the Waimea and Hawi Renewable Development (HRD) 34kV breakers (the line will attempt a single reclose of the Waimea breaker in an attempt to restore the line after temporary faults); the microgrid controller and system operator should be informed of the fault location. Existing relaying technology provides estimated fault location based on impedance-based measurements, but fault indicators around the Maliu Ridge Isolation Switch may be a necessary improvement for accurate fault location in this application. If the fault location is determined to be in the segment of line between the Maliu Ridge Isolation Switch and the Hawi Isolation Breaker, the Hawi Isolation Breaker is to be opened to isolate the Hawi Microgrid area from the fault and allow for restoration of the Hawi loads. Automation of the unplanned transition is the preferred design, but system operators can also be trained to perform steps if manual operations are required. The details of automation versus manual operations can be established in more detailed design stages and can be influenced by existing communications infrastructure and work practices.

2.3 Black Start

It is required that the BESS be capable of black start, that is self-starting in the absence of a grid connection, but only in the designed microgrid island mode and is not required as a "cranking path" to facilitate the starting of other grid-connected generators. The black start energization of the North Kohala 34kV Microgrid or Hawi Microgrid should be achieved in a controlled method that ensures the BESS remains in operation for all transformer energizations and load additions and minimizes observable power quality issues for customers connected in the microgrid as transformers and loads are energized.

2.3.1 Configuration 1: Unplanned Transition: Black Start Method 1: "Energize All"

The preferred method to start the North Kohala 34kV Microgrid after an Unplanned Outage of the 34kV line ("Black Start Method") is by energizing all the islanded transformers and loads in a single breaker closure of the BESS such that all utility customers expected to be energized by the BESS are restored power simultaneously and are not exposed to subsequent transformer and load additions which are likely to cause a noticeable voltage flicker. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer and load energization modeling.

2.3.2 Configuration 1: Unplanned Transition: Black Start Method 2: "Energize Main Power Transformers Then Loads"

This method for black start of the North Kohala 34kV Microgrid would allow energizing all the islanded transformers with the utility customer loads disconnected and loads can be added in single feeder segments after the substation main power transformers are energized. The energization of the transformers could be achieved in a single breaker closure of the BESS such that all islanded transformers are restored to rated line voltage simultaneously or can be done in a method of controlled voltage increase to minimize inrush if the BESS supports such an energization method and if such a method would be preferred by the BESS. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer energization modeling. Further the subsequent energizations of the feeders' cold load and the power quality effect that has on already connected customers would need to be studied to ensure power quality is acceptable for load additions and can be supported by the BESS.

2.3.3 Configuration 2: Unplanned Transition: Black Start Method 1: "Energize All"

The preferred method to black start the Hawi Microgrid is by energizing the Hawi distribution main power transformer and loads in a single breaker closure of the BESS such that all islanded customers are restored simultaneously and are not exposed to subsequent load additions which could cause a noticeable voltage flicker. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer and load energization modeling.

2.3.4 Configuration 2: Unplanned Transition: Black Start Method 2: "Energize Main Power Transformers Then Loads"

This method for black start of the Hawi Microgrid would allow energizing the Hawi distribution substation main power transformer with the customer loads disconnected and loads can be added in single feeder segments after the substation main power transformer is energized. The energization of the transformer could be achieved in a single breaker closure of the BESS such that transformer is restored to rated line voltage in a single breaker operation or can be done in a method of controlled voltage increase to minimize inrush if the resource supports such an energization method and if such a method would be preferred by the BESS. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer energization modeling. Further the subsequent energizations of the feeders' cold load and the power quality effect that has on already connected customers would need to be studied to ensure power quality is acceptable for load additions and can be supported by the BESS.

2.4 Transition Back to Grid Connected:

The 34kV grid connection is expected to be restored through manual switching up to the point of isolation (Maliu Ridge Isolation Switch or Hawi Tap Breaker). Once the grid connection is restored up to the point of isolation the re-connection of the microgrid to the grid is expected to be initiated through a command from SCADA. Once the control signal to reconnect the microgrid to the grid is received the microgrid controller will verify the grid connection is energized (acceptable voltage and frequency), the BESS will synchronize the microgrid voltage and frequency to grid voltage and frequency and when acceptably synchronized will command the microgrid isolation switch or breaker to close.

2.5 Planned work on 34kV segments within the North Kohala 34kV Microgrid

At this time the majority of planned work is expected to occur between the Waimea Substation and the Maliu Ridge Isolation Switch such that the North Kohala 34kV Microgrid will be able to support all the loads that would be isolated. If in future years a need for planned work is expected on 34kV segments within the North Kohala 34kV Microgrid area those configurations would be investigated when the need is identified.

The preferred option to facilitate 34kV work within the North Kohala 34kV Microgrid will be established as the need is identified and in coordination with work schedules and practices. Additional studies to ensure safe and reliable operation in the alternate configurations will be conducted as the need is identified to support the operations and work.

2.6 Distribution Circuit Ties

To reduce complexity and the number of studies that would need to be conducted, the North Kohala 34kV Microgrid and Hawi Microgrid configurations will not consider for operation with distribution circuits within the microgrid tied and/or loads transferred. If there are circuit exceptions (circuits within the microgrid are tied or offloaded) the microgrid will not be able to operate until the configuration can be studied to ensure adequate safety and power quality in the specific configuration. Circuits within the microgrid should be restored to a non-exception status ahead of operating them in the microgrid.

3. Normal Operation and BESS Operation when Grid Connected

3.1 Normal Operation

In normal operation the 34.5kV sub-transmission line from Waimea to Maliu Ridge substation ("3300 line") supplies power to the North Kohala area via the Maliu Ridge, Halaula, and Hawi distribution substations, and allows export from the HRD wind farm.

3.2 BESS Operation when Grid Connected

When the BESS is grid connected it is expected to retain its full energy capacity in preparation for any unplanned or planned outages of the 34kV line. The restoration of energy to the BESS (charging of the BESS) is expected to be achieved through a setpoint control from SCADA and is only expected to occur when under SCADA control. The potential for the BESS to regulate voltage when grid connected will need to be studied in detail to ensure no adverse controller interactions are created between the resource and the existing HRD wind farm which also has provision for voltage regulation at its 34kV point of interconnection. If voltage regulation from the BESS is found to be favorable; the BESS will be expected to regulate voltage at its 34kV terminals through provision of reactive power to a voltage setpoint control from SCADA to the extent it can when not generating (zero active power flow or consuming energy).

3.3 No Additional Contracted Services from the BESS

The BESS is expected to be used exclusively by and dedicated to the North Kohala Microgrid. It is not expected to provide any capacity or energy dependent ancillary services to the grid when grid connected as this will conflict with its primary purpose of supporting islanded microgrid operation for extended outages of the 34kV line. Further the 69-34kV transformation capacity at the Waimea Substation is completely allocated to the capacity of the HRD wind farm and so any service when grid connected would need to be coordinated with the output of the wind farm to ensure no overloads occur. This additional complexity is not expected to be worth the small potential incremental benefit of utilizing this BESS for grid capacity or energy in addition to those services conflicting with the primary purpose as a North Kohala Reliability Resource.

The BESS will be considered for a contingency frequency response service that could be triggered in response to a frequency deviation outside of a deadband to immediately stop consuming energy if consuming energy at the time of an underfrequency event or immediately start consuming energy if there is capacity to consume energy during an overfrequency event. The response of this service would be aligned with the FFR-1 grid service procured for the Island of Hawaii and described in greater detail in the *Request for Proposals for Delivery of Grid Services from Customer-Sited Distributed Energy Resources for the Islands of O'ahu, Maui & Hawai`i*[1]. No specific allocation of capacity to this service is expected and no additional cost for this service should be contemplated as it will be enacted only when the conditions for it to operate are met and it would only be supplemental to the primary use case as the North Kohala Reliability Resource. This frequency response service should be able to be enabled and disabled through SCADA control and should only be allowed to be enabled when grid connected.

4. Grid Following and Grid Forming Capability (for Inverter Based Resources)

4.1 Grid Following (GFL)

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 version 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.

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[1] https://www.hawaiianelectric.com/documents/clean_energy_hawaii/selling_power_to_the_utility/competitive_bidding/20190822_final_stage_2_rfp_book_7.pdf (reference pdf pages 235-237)

4.2 Grid Forming (GFM)

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.

4.3 Microgrid Resource Mode of Operation

The BESS will be required to be capable of operating in a Grid Forming mode when grid connected and when islanded to ensure a seamless transition from grid connected to islanded and back. The BESS when islanded will need to operate in a Grid Forming isochronous frequency control mode to control voltage and frequency in the microgrid in the absence of any other synchronous or frequency and voltage controlling resource. The BESS can remain in Grid Forming mode while grid connected but would be expected to operate on a DROOP primary frequency response and not as an isochronous source, or could be switched to a Grid Following mode of operation and provide the grid support functions it is capable of in the Grid Following mode. The mode of operation when grid connected and not transitioning to islanded will need to be studied to identify the preferred mode of operation when grid connected.

5. Power System Protection

5.1 When Grid Connected

When the microgrid is grid connected the existing power system protection schemes are expected to operate as designed.

5.2 When Islanded

Both the 34kV and Hawi Microgrid configurations will need to be studied in detail to ensure power system protection is safe and reliable for all desired configurations; and should be designed to be selective and secure to the extent achievable in all desired configurations. A model representing the detailed BESS behavior during fault conditions will need to be used to study the detailed operations of protection devices. The BESS model for this protection study should include expected limits of the BESS (ride-through, current, imbalance, etc.) so those can be avoided by power system protection systems operating ahead of those limits to still retain selectivity in the microgrid to the extent the BESS can support.

5.2.1 Hawi 34kV Bus

The BESS is expected to be interconnected to the system at a new 34kV bus created between a new BESS 34kV breaker, a new Hawi Isolation Breaker, and a new Hawi Substation 34kV breaker ("New Hawi 34kV Bus"). This segment of 34kV bus is expected to be protected utilizing an overcurrent bus protection scheme.

5.2.2 BESS Protection

The BESS will be expected to be designed with appropriate protection of the equipment on the BESS side of the BESS 34kV breaker. When grid connected the BESS protection scheme can rely on short circuit current being provided from the system. When islanded the BESS protection will need to be coordinated to the extent possible with the protection schemes described above for islanded operation. Islanded operation protection coordination will be investigated and informed in the detailed protection study. BESS protection when grid connected will also be validated as part of the detailed protection study.

5.3 Applying Alternate Settings Between Grid Connected and Islanded Operation

If any power system protection settings are expected to need to be changed between grid connected and islanded operation the protective relays will be pre-programmed with the appropriate settings for each configuration and the microgrid controller would inform the relays of which settings are to be active based on the expected microgrid configuration. The change in settings are expected to be applied ahead of operating as a microgrid to ensure safety at all times, even if it sacrifices selectivity during the transition between grid connected and islanded operation.

6. Distributed Energy Resource (DER)

6.1 Existing DER

All existing DER systems interconnected to the circuits in the microgrid area will be expected to be capable of operating when the microgrid is in an islanded configuration. Existing DER is expected to contribute to the energy capacity of the microgrid in the same form it contributes when grid connected under the existing agreement for interconnection. The BESS energy and power capacity requirements were derived with inclusion of existing DER contributions of energy into the islanded microgrid.

6.1.1 Need for BESS to consume energy when in Islanded mode

At existing levels of DER deployment in the microgrid area DER export is never more than the gross load in the area and therefore it is not envisioned that the BESS would ever need to consume energy when in islanded mode. Further, all future DER programs with capacity remaining for interconnection have a requirement for advanced inverter functions such as frequency-watt to aid in stabilizing frequency when high, as well as an ability to be externally controlled by the utility for excess energy conditions; so if future deployment of DER in the area poses an excess energy condition when in islanded mode a means to leverage the external utility control of DER can be pursued. Also given the planned nature of this microgrid for most of its operations, should a potential excess energy condition be predicted the planned work could be manipulated to try to reconnect the microgrid ahead of the excess energy condition being reached.

6.2 DER as a Microgrid Capacity Grid Service

Given stakeholder interest to allow for DER participation in a potential “Microgrid Capacity Grid Service”, the BESS sizing can contemplate an option for this potential service to be provided by DERs and the capacity acquired through this service would supplement the sizing of the BESS. A DER provided capacity service is not expected to eliminate the need for a BESS given the need for a “Grid Forming” source within the microgrid to allow for “Grid Following” DER to operate. The DER provided service would be expected to be competitively procured in conjunction with a competitive sizing of the BESS. If a DER grid service is being proposed the details of monitoring and control required of the DER to the microgrid controller for reliable cost-effective operation of the BESS in coordination with the Microgrid Capacity Grid Service DER will need to be established. The proposed design and cost to build such an interface between DER and the microgrid controller would be expected to be provided in a proposal offering a DER service solution for proper comparison of costs.

EXHIBIT 4A

Proposed Final Draft North Kohala Energy Storage RFP

REDLINE VERSION

~~DRAFT~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

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

Table of Contents

List of Appendices

Chapter 1: Introduction and General Information

Hawai‘i Electric Light Company, Inc. (“Hawai‘i Electric Light” or the “Company”) seeks Proposals for a standalone Battery Energy Storage System (“BESS”) for the North Kohala area on the island of Hawai‘i in accordance with this Request for Proposals (“RFP”). Hawai‘i Electric Light seeks to procure 5 megawatts (“MW”) / 30 megawatt hours (“MWh”) of standalone energy storage capacity, through a single BESS Project, for integration with a microgrid controller system.

The Company or its Affiliates may submit a Proposal in response to this RFP subject to the requirements of this RFP.

The Company intends to contract for a single BESS Project through this RFP using its Energy Storage Services Agreement (“ESSA”), which gives the Company full dispatch rights over the energy storage facilities.

The successful Proposer will provide energy storage services to the Company pursuant to the terms of the ESSA, which will be subject to review and approval by the State of Hawai‘i Public Utilities Commission (“PUC”).

Proposers are instructed to thoroughly review the Model ESSA attached as Appendix L. The ESSA gives the Company exclusive rights to schedule and control the Project for the use of the defined Performance Standards, which include but are not limited to: Back-up Power, Rated Energy Capacity, Frequency Regulation, Rated Active Power Capacity, Voltage Regulation, Black-Start, ability to operate in grid-forming mode, and any other uses the Project is capable of providing that would benefit the Company’s distribution or transmission system; and, in exchange, the Proposer is provided a fixed monthly payment (“Lump Sum Payment”), which is subject to adjustment based on the availability and performance of the Project. Under the ESSA, the Project must meet certain requirements to receive the full Lump Sum Payment each month. These requirements ensure that the Project is available to the Company for scheduled and un-scheduled operation of the microgrid or system needs.

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4. The Company will evaluate and select a single Proposal based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Project.

Additionally, the bid price of the Proposal will be added to the estimated cost of the Company’s microgrid project. This aggregated cost will then be compared with the estimated value of a traditional second wires path solution. This estimated value is intended to be used as an order of magnitude financial estimate of the non-wires alternative opportunity. The estimated value is based on the current planning level estimate for the traditional second wires path solution. This step occurs as part of the eligibility screening immediately after receiving proposals, as set forth in Section 4.2 of the 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, and in the ESSA attached as Appendix L.

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

1.1 Authority and Purpose of the Request for Proposals

1.1.1 This RFP is issued in alignment with the Integrated Grid Planning ("IGP") process with respect to Non-Wires Opportunity Evaluation Methodology dated June 2020.[1]

1.1.2 While storage resources were not contemplated in 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"), the Company intends to follow the Framework to the extent applicable for this RFP. This RFP is also consistent with the Updated Framework for Competitive Bidding ("Updated Framework" or "Updated Competitive Bidding Framework"), which was drafted to be more inclusive of various technologies, and filed on February 12, 2021 in Docket No. 2018-0165. Order No. 38481, issued on June 30, 2022, approved the Updated Framework for use in the first round of integrated grid planning. Until the first round of integrated grid planning RFPs commence, the Company will continue to follow the Framework.

1.1.3 Proposers should review the functional requirements identified in Appendix O which informs Proposers of the system needs.

1.2 Scope of the RFP

1.2.1 The Company is seeking one (1) standalone storage project that meets the requirements noted in this RFP for integration with a microgrid controller system. This would be the first utility microgrid based on storage in the State of Hawai'i. Establishing this microgrid system with a BESS provides a non-wires alternative[2] ~~("NWA")~~ by providing a grid-forming energy source in the North Kohala area when the 3300 line connection is not available. This energy source will be charged from grid energy while the 3300 line is in service. By supporting the electrical needs of customers during sustained 3300 line outages, this microgrid avoids having to build an alternative transmission path to avoid outages during the rebuilding of the 3300 line, and also, will be able to provide service during unplanned outages. This would improve reliability and resilience for customers in North Kohala while allowing for routine maintenance of the 3300 line without building a second path to serve the area. Installing a microgrid system with a BESS avoids the use

[1] See https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/stakeholder_engagement/working_groups/distribution_planning/20200602_dpwg_non_wires_opportunity_evaluation_methodology.pdf

[2] A non-wires alternative, also referred to as non-transmission alternative in this RFP, is generally defined as an electricity grid project that uses non-traditional transmission and distribution solutions, such as distributed generation, energy storage, energy efficiency, demand response, and grid software and controls, to defer or avoid the need for conventional transmission and/or distribution infrastructure investments. See Docket No. 2018-0165, Hawaiian Electric Companies' Integrated Grid Planning Workplan, filed December 14, 2018, at 21.

of a diesel-powered microgrid, which was also considered, but did not receive the level of community acceptance as a battery solution.

1.2.2 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.2.3 Projects must interconnect to the Company's System at the 34.5 kV level at the existing Hawi Substation located on the island of Hawai'i (see Section 3.11 of this RFP, Appendix F and Appendix H, Attachment 1.

1.2.4 To prevent adverse impacts to the microgrid reliability, the storage system and protection design shall provide sufficient redundancy to avoid single points of failure of critical telemetry measurements.

1.2.5 The contract for the Project selected through this RFP shall use the ESSA, as described in Section 3.8. Under the ESSA, the Company will maintain exclusive rights to fully direct charge and discharge of the Project, subject to availability of the resource and Section 1.2.7 below. The term of the ESSA will be 10 years.

1.2.6 The Project must be capable of the following Performance Standards: Back-up Power, Rated Energy Capacity, Frequency Regulation, Rated Active Power Capacity, Voltage Regulation, Black-start, ability to operate in grid-forming mode; and, any other uses the Project is capable of providing that would benefit of Company's distribution or transmission system. The storage will be charged in accordance with the Company design when not in a microgrid configuration, and once charged, remain ready to support microgrid operation for planned and unplanned outages.

1.2.7 The Maximum Annual Energy Throughput is expected not to exceed 5400 MWh. The Annual Energy Throughput is the cumulative energy discharged by the Project measured between 12:00 am January 1 to 11:59:59 pm December 31 in each calendar year. Energy discharge can occur in continuous full discharges or over intermittent discharges and charges.

1.2.8 Proposals must specify a Guaranteed Commercial Operations Date ("GCOD") no later than September 19, 2025.

1.2.9 A Proposer's GCOD set forth in its Proposal will be the GCOD in any resulting ESSA if such Proposal is selected to the Final Award Group. Note that the Company intends to contract for a single BESS Project and therefore the Final Award Group will only consist of one project.

1.2.10 The selected Proposer will be responsible for all Project costs throughout the term of the ESSA, including but not limited to Project development, completion of a facility equipment and controls design review, interconnection design review, the cost of conducting a greenhouse gas analysis, land leasing, to the extent set forth in Appendix F to the RFP and the ESSA, permitting, financing, construction of the Project and all

Seller-owned Interconnection Facilities, and the operations and maintenance ("O&M") of the Project.

1.2.11 The selected Proposer will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the ESSA, as described in Attachment G, Section 7 of the ESSA.

1.2.12 To the extent that any federal or state tax credits exist, the selected Proposer shall pursue all such tax credits (including, without limitation, all available applicable tax credits from the federal Inflation Reduction Act). Proposal pricing must be set to incorporate the benefit of any such federal or state tax credits. In the event additional federal tax credits become available through new tax legislation after Proposals are submitted but before Proposals are selected to the Final Award Group, the Company may require applicable Proposals propose an additional downward only price adjustment to allow the benefits of those additional tax credits to be passed along to the Company's customers.

However, to mitigate the risk on Proposers due solely to potential changes to Hawai'i 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 ESSA 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 ESSA. The ESSA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue such maximum available state tax credit.

1.2.13 The selected Proposer will submit a project schedule as required per Attachment S of the ESSA, including creating its schedule using Microsoft Project and submitted in .mpp file format.

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: **Bates White, LLC**.

The Independent Observer Email Address is: vincent.musco@bateswhite.com.

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 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.

To ensure the Independent Observer can monitor communication, questions regarding the RFP or a proposed Project submitted to the RFP Email Address should include the Independent Observer Email Address found in Section 1.4.3. 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 (see RFP Schedule in Section 3.1, Table 1). 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 North Kohala Mutual Confidentiality and Non-Disclosure Agreement[3] ("NDA"). See Appendix E.

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

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Christin Chang
Energy Contract Manager
Hawaiian Electric Company, Inc.

RFP Email Address: renewableacquisition@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 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.

[3] See Section 3.12.1 of this RFP.

Such legal counsel will also be required to submit a similar certification at the conclusion of contract 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 1. 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 Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that all Proposals were submitted by the Proposal Due Dates shown in Section 3.1, Table 1. The Electronic Procurement Platform automatically closes to further submissions after the IPP and Affiliate Proposal Due Date in Section 3.1, Table 1.

1.8 Proposal Fee

1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of $5,000 for each Proposal submitted.

1.8.2 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Hawai'i Electric Light Company, Inc." and must be delivered and received by the Company by 2:00 pm HST on the Proposal Due Date shown in the RFP Schedule in Section 3.1, Table 1. The cashier's check should include a reference to the Proposal 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:

Christin Chang
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:

Hawaiian Electric Company, Inc
Ward Receiving
Attention: Christin Chang, Energy Contract Manager
Mail Code AL12-IU
799 S. King St.
Honolulu, Hawai'i 96813

Due to coronavirus prevention measures, Proposal Fees cannot be delivered in person.

1.9 Procedures for any Hawaiian Electric or Affiliate Proposals

1.9.1 The Competitive Bidding Framework allows the Company the option to offer a Self-Build Proposal in response to this RFP ("Hawaiian Electric Proposal"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the Hawaiian Electric Proposal or members, agents, or consultants of the Company formulating the Hawaiian Electric Proposal; and (2) preferential access to proprietary information by the Hawaiian Electric Development Team. These requirements are specified in the Code of Conduct ("North Kohala Code of Conduct") required under the Framework and implemented by certain rules and procedures found in the Procedures Manual attached as Appendix C. The North Kohala Code of Conduct will apply regardless of whether the Company will submit a Hawaiian Electric Proposal.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals[4] to RFPs issued by the Company. All Hawaiian Electric and Affiliate Proposals are subject to the Company's Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP Proposal and must be submitted electronically through the Electronic Procurement Platform by the IPP and Affiliate Proposal Due Date in RFP Section 3.1, Table 1.

1.9.2 The Company will require that the Hawaiian Electric and Affiliate Proposal(s) be submitted electronically through the Electronic Procurement Platform. Hawaiian Electric Proposals will be due a minimum of one (1) Day before other Proposals are due.

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

Hawaiian Electric Proposals will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Hawaiian Electric Proposals are timestamped by the Hawaiian Electric Proposal Due Date shown in RFP Section 3.1, Table 1.

1.9.3 Detailed requirements for a Hawaiian Electric Proposal can be found in Appendix G. These requirements are intended to provide a level playing field between Hawaiian Electric Proposals and third-party Proposals. Except where specifically noted, a Hawaiian Electric Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers, as well as certain ESSA requirements, such as milestones and liquidated damages, as described in Appendix G. The non-negotiability of the Performance Standards shall apply to any Hawaiian Electric Proposal to the same extent it would for any other Proposal. Notwithstanding the fact that it will not be required to enter into an ESSA with the Company, a Hawaiian Electric Proposal will be required to note its exceptions, if any, to the ESSA in the same manner required of other Proposers, and will be held to such modified parameters if selected. In addition to its Proposal, the Hawaiian Electric Development Team will be required to submit Appendix G Attachment 1, Hawaiian Electric Development Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Hawaiian Electric Proposal Team over other Proposers responding to this RFP, as well as adherence to ESSA terms and milestones required of all Proposers and the Hawaiian Electric Proposal's proposed cost protection measures.

The cost recovery methods between a regulated utility Proposal and IPP Proposals are fundamentally different due to the business environments they operate in. As a result, the Company has instituted a process to compare the two types of Proposals for the evaluation of the price related criteria on a 'like' basis through comparative analysis.

At the core of a Hawaiian Electric Proposal are its total project capital cost and any associated annual O&M costs. During the RFP's pricing evaluation step, these capital costs[5] and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the Project. The Hawaiian Electric Proposal revenue requirements are then used in a levelized benefit calculation to determine a Levelized Benefit ("LB") ($/MWh) which will then be used for comparison to IPP and any Affiliate Proposals.

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the Hawaiian Electric Proposal to ensure an appropriate level of customer cost protection measures are included in such Proposal.

[5] Hawaiian Electric Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction, interconnection, overhead, and Allowance for Funds Used During Construction.

The Hawaiian Electric Proposal will be permitted to submit a shared savings mechanism with its Proposal to share in any cost savings between the amount of cost bid in the Hawaiian Electric Proposal and the actual cost to construct the Project. If the Hawaiian Electric Proposal is selected to the Final Award Group, the proposed shared savings mechanism will need to be approved by the PUC. Submission of a shared savings mechanism is not required and will not be considered in the evaluation of the Hawaiian Electric Proposal.

1.10 Dispute Resolution Process

1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.

1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer ("Initial Meeting"). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.

1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential mediation in Honolulu, Hawai'i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. ("DPR") (or its successor) or, in its absence, the American Arbitration Association then in effect ("Mediation"). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorneys' 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.

[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.

1.10.6 By submitting a Proposal in response to this RFP, each Proposer expressly agrees that if it initiates a dispute resolution process for any dispute or claim submitted in violation of or arising under or relating to this RFP (e.g., a court proceeding, arbitration, etc.), other than as permitted by the Framework and Section 1.10 of this RFP, such dispute shall be dismissed with prejudice and the Proposer filing such dispute or claim 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, non-award or disqualification of a Project made by the Company or any decision by the Commission made pursuant to Section 1.10.5.

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

1.12 Modification or Cancellation of the Solicitation Process

1.12.1 Unless otherwise expressly prohibited, the Company may, at any time up to the final execution of an ESSA, 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.

1.13 Community Outreach

The North Kohala community has played an important role in shaping this project. The Company took a collaborative approach in developing plans to improve resilience and reliability in the North Kohala area. The Company shared information and requested feedback through focus groups, conducted roundtables with key community members, provided regular briefings to Hawai‘i Island government leaders, and provided updates at town halls hosted by elected officials. The Company also formed partnerships with organizations that work to keep the North Kohala community safe, healthy and connected. Through these partnerships, the Company hosted or participated in several events including the North Kohala Resilience and Sustainability Forum and various community fairs and festivals. As a result of the feedback and input provided by community members, the Company was able to develop the proposed microgrid project and the requirements of this RFP.

Chapter 2: Resource Needs and Requirements

2.1 Performance Levels and Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the ESSA. This RFP and the ESSA 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 Interconnection Requirement Study ("IRS"). The Company has not yet fully adopted IEEE 2800-2022 as it was recently published. However, the inverters being procured in this RFP may need to conform to certain functions of IEEE 2800-2022 as identified in studied completed within this RFP, or in the future operations of the project. The interconnection study will incorporate IEEE 2800 to the extent applicable to our island systems.

The ESSA should be referenced for the complete list of Performance Levels and Performance Standards and details of each; but the following Performance Levels and Performance Standards are considered of utmost importance to ensure acceptable performance of the proposed resource and are reproduced here for reference:

"Back-up Power" means the capability to supply power to maintain service continuity and grid resilience in the event of an outage, at the direction of the Company.

""Performance Level Rated Energy Capacity" means the amount of energy that the Project is capable of discharging in megawatt-hours (MWh), measured between the maximum and minimum allowable states of charge and available to the Company. To avoid the imposition of liquidated damages ("LDs"), the Performance Level Rated Energy Capacity shall not be less than the Contract Capacity (30 MWh).

"Frequency Regulation" means the capability to consume or deliver active power, for the purpose of retaining a target frequency under changing load and generation conditions.

"Rated Active Power Capacity" means the total possible instantaneous discharge capability in megawatts (MW) of the Project, or the maximum rate of discharge that the Project can achieve, starting from a fully charged state, and available to the Company.

"Voltage Regulation" means the ability to compensate for anomalies or disturbances (e.g., voltage magnitude, harmonics, etc.) to achieve a target voltage at the Point of Interconnection by manipulating the reactive energy component of the Project.

"Black-Start" means the capability of the Project to self-start, and also energize the islanded transformers and loads, as defined in the RFP, in a single breaker closure without outside assistance. Further, inverter-based resources shall ensure they have sufficient energy storage to maintain power injection to the grid during system restoration (i.e., have power available when and if called upon). The capability of the Project to energize transformers and loads is only required within the limits of the Rated Active Power Capacity, Rated Energy Capacity, and Short-term Overcurrent Capability. The Seller is responsible for establishing the required minimum capacities and appropriate controls of the Facility to facilitate black start energization within the Rated Active

Power Capacity, Rated Energy Capacity, and Short-term Overcurrent Capability limits of the Project determined by the Company.

"Performance Level RTE" means the sound trip efficiency rate, or RTE Ratio of not less than 85%, which is required to be maintained to avoid the imposition of LDs.. This represents the lowest acceptable efficiency of the Facility for a full charge and discharge cycle with all energy to achieve the full cycle being taken from and delivered to the Point of Interconnection.

"Performance Level Availability" means the Measured Availability of 98% or greater, which is required to be achieved to avoid the imposition of LDs.

The Project must also meet all other Performance Standards described in Section 3 of Attachment B of the ESSA; including but not limited to reactive capability, ride-through, and the ability to operate in grid-forming ("GFM") mode as further described in the ESSA.

The functionality and characteristics of the storage must be maintained throughout the term of the ESSA. To be clear, Proposers may not propose any energy storage degradation below the Performance Levels for either capacity or efficiency in their Proposals. Ensuring that there is no degradation in storage capacity or efficiency over the term of the ~~PPA~~ESSA can be accomplished in a number of ways, including overbuilding or pricing in replacement components. The particular manner in which this requirement is achieved is ultimately up to the Proposer to include in its Proposal.

2.2 Transmission-Level System Information

The Company has performed a preliminary evaluation of the Transmission System which indicates a BESS of the requested size is able to interconnect and support the North Kohala area. The Company will provide line data and load transformer datasheets to Proposers to simulate a black start of the microgrid system in an electromagnetic transient ("EMT") environment system if requested via the communication methods identified in Section 1.5 and upon the execution of an NDA as specified in Section 3.12.1. Proposals are required to provide EMT simulation results demonstrating acceptable black start performance of the microgrid using the proposed resource. Further, as part of this RFP, fault current levels at select busses are provided and Proposals are expected to verify their proposed resource can achieve these fault current levels in modeling. A detailed IRS will be required to ensure the Project BESS size, proposed inverter equipment, and controller settings are providing acceptable performance when grid connected, islanding, and during Black Start. Additional system mitigation measures in the form of additional equipment is not expected to be required to integrate any specific Project selected through this RFP and if any is identified the addition will be at the cost of the Company. Per Section 3.11 and Appendix F, Projects must interconnect to the Company's System at 34.5 kV level at the existing Hawi Substation located on the island of Hawai'i. The estimated configuration of the interconnection is provided in Appendix H. Any questions regarding the interconnection

may be directed to the RFP Email Address in Section 1.6 after the execution of the NDA as specified in Section 3.12.1.

2.3 Interconnection to the Company System

2.3.1 The Proposer must provide all information pertaining to the design, development, and construction of the Seller-Owned Interconnection Facilities as specified in Appendix B.

2.3.2 All Proposers must provide a completed Project Interconnection Requirement Study Data Request worksheet, which can be found in Appendix B, Attachment 2, with the Proposal submission. All project diagram(s), models for equipment and controls (see Appendix B, Attachments 3 and 4), list(s) identifying components and respective files (for inverters and power plant controller), and complete documentation with instructions must also be submitted with the Proposal submission. The proposed Interconnection Facilities must be compatible with the Company System and in coordination with Company-Owned Interconnection Facilities. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System. Please see Appendix B for reference.

2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point of Interconnection with the Company System, and scheme of interconnection, must meet Company standards as applicable.

2.3.2.2 Interconnection Facilities must be designed such that it meets or exceeds the applicable single line diagram in Appendix H, Attachment 1.

2.3.3 RESERVED

2.3.4 The selected Proposer shall be responsible for building all Seller-Owned Interconnection Facilities and for all costs for Seller-Owned Interconnection Facilities needed to interconnect a Project to the Company System. The Company will be responsible for building all Company-Owned Interconnection Facilities and for all costs for Company-Owned Interconnection Facilities needed to interconnect a Project to the Company system.

2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and distribution equipment expected to be required between their Project and the Point of Interconnection. The selected Proposer shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities (see Appendix H), whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.

2.3.6 RESERVED

2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. The selected Proposal will be subject to further study in the form of an

IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed ESSA.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the "RFP Schedule"). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via email to the Proposers and posted on the RFP Website.

Table 1
RFP Schedule

Milestone	Schedule Dates
(1) Distribute RFP for Stakeholder input	September 23, 2021
(2) Technical Status Conference	September 30, 2021
(3) Parties and Participants file comments by	October 7, 2021
(4) Draft RFP filed	October 29, 2021
(5) Order 38195 issued	January 25, 2022
(6) Public comments filed by	February 25, 2022
(7) Order 38699 issued	November 10, 2022
(8) Restudy results filed	December 30, 2022
(9) Revised RFP filed by	January 13, 2023
(10) ~~PUC to provide comments by~~Order 38855 issued	February 14, 2023[7]
(11) Proposed Final RFP filed	February 28, 2023
(12) Final RFP is Issued	March ~~28~~24, 2023[8]
(13) Hawaiian Electric Proposal Due Date	May 30 2023 at 2:00 pm HST
(14) IPP and Affiliate Proposal Due Date	May 31, 2023 at 2:00 pm HST
(15) Selection of Final Award Group	August 29, 2023
(16) Contract Negotiations Start	September 6, 2023

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/NorthKohalaEnergyStorageRFP

[7] ~~This date and all subsequent dates in the RFP Schedule (Table 1) are dependent on any further guidance to be set by the PUC.~~
[8] This date and all subsequent dates in the RFP Schedule (Table 1) are dependent on any further guidance to be set by the PUC.

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[9] 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.

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 Company held a stakeholder outreach meeting on September 2, 2021 to discuss the needs set forth in this RFP and gain stakeholder input. A recording of the September 2, 2021 stakeholder outreach meeting can be found on the Company's RFP website.

The Company also conducted a Technical Status Conference on September 30, 2021 to discuss this draft RFP. Parties and Participants had the opportunity to submit comments on the draft RFP. A recording of the Technical Status Conference can be found on the RFP website. The Company has reviewed and answered questions sent in by stakeholders which can be found on the RFP website and submitted a draft RFP for PUC review and approval on October 29, 2021. The Company has also responded to 45 information requests from the Commission and filed the results of the BESS sizing restudy and updated pricing for the Microgrid + BESS Project on December 30, 2022, as directed by the Commission in Order No. 38699.

Additionally, the Company will hold a prerecorded webinar 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 RFP 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.

[9] PowerAdvocate became part of Wood Mackenzie in 2021, but web addresses and support email addresses still reference to PowerAdvocate.

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 ESSA. 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 has no obligation to inform the Proposer of any error, and the Company will not accept any assertion 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 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.

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[10] of the Proposer.

3.5 Organization of the Proposal

3.5.1 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.

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

3.6 Proposal Limitations

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

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

- The Company reserves the right, in consultation with the Independent Observer, to request additional information from any or all Proposers relating to their Proposals or to request that Proposers clarify the contents of their Proposals. Proposers who are not responsive to such information requests may be eliminated from further consideration upon consultation with the Independent Observer.

- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.

- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the NDA.

Proposers understand and agree that if its Proposal is selected by the Company for the Final Award Group, such selection shall in no way constitute the Company's confirmation that a Proposer's Project will meet the requirements under this RFP, e.g., that the Project's proposed interconnection is feasible and will meet the Company's requirements. The Proposer is ultimately responsible for ensuring that its Project meets the technical requirements specified in this RFP, and if the parties reach agreement on the ESSA, the requirements specified in the ESSA.

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 Energy Storage Services Agreement

3.8.1 The agreement for the Proposal selected under this RFP will be in the form of the ESSA, attached as Appendix L.

3.8.2 If selected, any Affiliate Proposer will be required to enter into the ESSA with the Company.

3.8.3 If selected, the Hawaiian Electric Development Team will not be required to enter into an ESSA with the Company. However, the Hawaiian Electric Development Team will be held to the proposed modifications to the ESSA, if any, it submits as part of the Hawaiian Electric Proposal in accordance with Section 3.8.6. Moreover, the Hawaiian Electric Proposal will be held to the same performance levels and milestones set forth in the ESSA to the same extent as all Proposers, as attested to in the Hawaiian Electric Proposal's Appendix G, Attachment 1, "Hawaiian Electric Development Team Certification" submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility of a Company-owned facility, the Hawaiian Electric Proposal will be permitted to adjust operational requirements and performance levels with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to an ESSA with PUC approval.

3.8.4 In general, under the ESSA, payment to the Seller consists of a Lump Sum Payment component to cover the costs of the Project. In return, the ESSA gives the Company exclusive rights to schedule and control the energy storage facility. The monthly Lum Sum Payment is subject to adjustment based on the availability and performance of the Project.

3.8.5 The Performance Standards identified in Section 2.1 of this RFP and Attachment B, Section 3 of the ESSA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Project'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 included in the ESSA are non-negotiable. Additionally, as stated in Section 3.13.2 below, Proposers shall not propose an amount lower than that set forth in the ESSA for Development Period Security and Operating Period Security. Proposers may propose modifications to other sections of the ESSA 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 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 ESSA will be evaluated as a non-price evaluation criterion as further described in Section 4.4.2. In order to facilitate this process, the Company will make available an electronic version of the model agreement on the RFP website and through the Electronic Procurement Platform for the RFP. Any proposed modifications to the ESSA 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~~agreement. 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.

3.8.6 Proposals that do not include specific proposed modifications to the attached ESSA will be deemed to have accepted the ESSA in its entirety.

3.9 Pricing Requirements

3.9.1 Proposers are responsible for understanding the terms of the ESSA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy, assuming that all applicable federal tax credits are received, assuming that the Company will accept any proposed change to the ESSA).

3.9.2 Escalation in pricing over the term of the ESSA is prohibited.

3.9.3 Pricing information must only be identified within specified sections of the Proposal instructed by this RFP's Appendix B Proposer's Response Package (i.e., Proposal pricing information must be contained within defined Proposal sections of the Proposal submission). Pricing information contained anywhere else in a Proposal will not be considered during the evaluation process.

3.9.4 The Proposer's Response Package must include the following prices for each Proposal:

For IPP or Affiliate Proposals:

- **Lump Sum Payment ($/year):** Payment amount for exclusive rights to schedule and control the Project. Payment will be made in monthly increments.

For the Hawaiian Electric Proposal:

- **Total Project Capital Costs ($/year):** Total capital costs for the Project (identified by year).

- **Annual O&M Costs ($/year):** Initial year operations and maintenance costs, annual escalation rate.

- **Annual Revenue Requirement ($/year):** Annual revenue requirements (ARR) calculated for each year.

Additional description and detail on the Total Project Capital Costs, Annual O&M Costs, and ARR for the Hawaiian Electric Proposal is located in Appendix G.

3.10 Project Description

3.10.1 RESERVED

3.10.2 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 ESSA approval process. If requested, such information would be provided to the PUC, Consumer Advocate, and Company pursuant to a protective order in the docket.

3.10.3 The Proposer agrees that no material changes or additions to the Project 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 that any Proposal information 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 Project Site

All Proposals must be sited on a pre-determined Company-controlled Project Site, referred to as the Akoni Pule Site. The available area is approximately 1.207 acres located along Akoni Pule Highway in Hawi Village, North Kohala, and is further

described in Appendix F. Additional details regarding the specific interconnection requirements for a Project sited at the Akoni Pule Site are described in Appendix H.

The selected Proposer will be required to agree to specific terms and conditions for such use as provided for in Attachment X of the ESSA. Provisions providing for access to the site during construction and thereafter, during commercial operations, will be subject to current Company safety and security policies and procedures, including any additional restrictions due to COVID-19. Physical, communication, and internet security will be required consistent with Company policy. Additional measures may be required to limit or eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures, and requirements may change as necessary during the term of the ESSA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules, or regulations. Additional information regarding the site can also be found in Appendix F.

The Company will endeavor to provide as much information as possible to interested potential Proposers, and if conditions related to the ongoing health pandemic do not allow for an in-person visit early in the bid submittal period, the Company will provide additional information which may include photographs and/or video. Information on a potential in-person site visit or any additional information will be posted on the Company's RFP website.

3.12 Confidentiality

3.12.1 Each prospective Proposer must submit an executed NDA in the form attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1, Table 1. The form of the NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed NDA will be considered. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should 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 NDA, the Company reserves the right to share any information, even if marked confidential, with 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 to Company in response to this RFP, certify that such Proposer has not shared its Proposal, or any part thereof, with any other Proposer of a Proposal responsive to this RFP. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Notwithstanding such certification, if the Company observes or receives evidence from a Proposer that appears to place one or more Proposers in violation of this RFP Section 3.12.2, e.g., a representative from one Proposer uses the same information in multiple Proposals submitted by different Proposers (e.g., individual Proposers with different names, joint ventures, etc.), Company

will seek additional information and clarification from such Proposer(s) to determine whether such a violation does in fact exist (and, if so, in consultation with the Independent Observer, whether disqualification of one or more Proposals is appropriate).

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

3.13 Credit Requirements Under the ESSA

3.13.1 The Proposer with whom the Company enters into an ESSA must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's as required and set forth in Article 14 of the ESSA. Cash, a parent guaranty, or other form 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 ESSA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the ESSA.

3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's to guarantee Proposer's payment of interconnection costs for all relocation costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the ESSA.

3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank doing business in the United States and subject to United States state or federal regulation, with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the ESSA.

Chapter 4: Evaluation Process and Evaluation Criteria

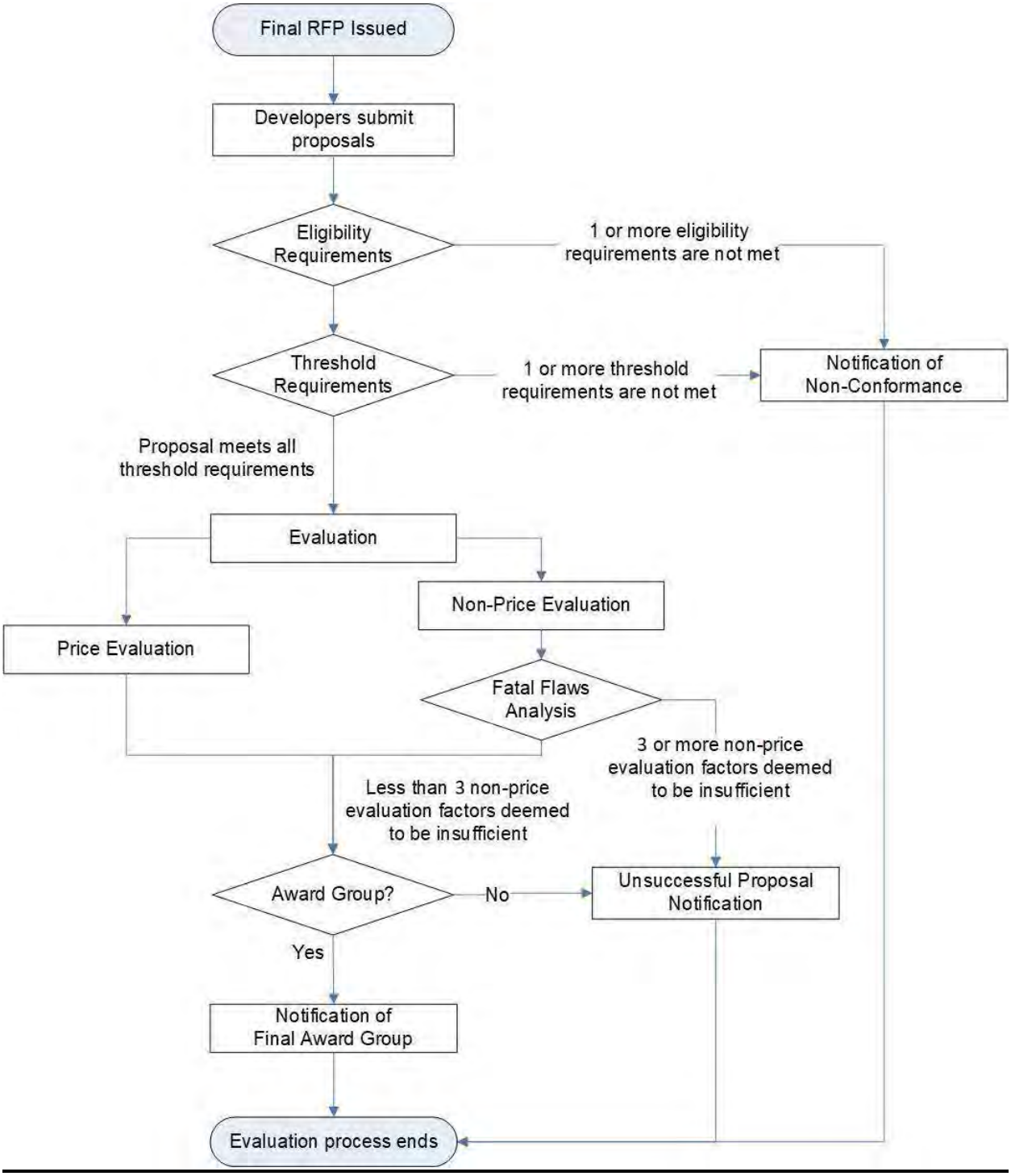
4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will 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 will be eliminated based on failure to meet either Eligibility or Threshold Requirements.[11] 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.[12] Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a price and non-price evaluation process, ultimately ending in a single Proposal being selected to the Final Award Group.

[11] 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 Eligibility Requirements.
[12] The initial request will be offered 3 business days to cure. Succeeding inquiries on the deficiencies will be offered cure periods deemed sufficient by the Company and Independent Observer.

Figure 1 – Evaluation Workflow



4.2 Eligibility Requirements Assessment

Upon receipt of the Proposals, each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements.

- The Proposal, including required uploaded files, must be received on time via the Electronic Procurement Platform.
- The Proposal Fee must be received on time on or before the Proposal Due Date.[13]
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized agent of the Proposer.
- The Proposers must fully execute the NDA and any other documents required pursuant to this RFP.
- The Proposer must provide a Certificate of Vendor Compliance from the Hawai‘i Compliance Express that is current (dated and issued no earlier than 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 Proposal must be sited on the Project Site.
- The Proposal must be for a BESS connecting to the prescribed 34kV Point of Interconnection.
- The BESS must be able to be charged from the grid at the direction of the Company as described in Section 1.2.1.
- Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.
- Proposals must specify a GCOD no later than September 19, 2025.
- Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- The Proposal must include a written attestation that states the Proposer will fulfill all requirements set forth in Section 5.3.1.
- The aggregated cost of the bid price of the Proposal and estimated cost of the Company’s microgrid project must not exceed the estimated value of a traditional second wires path solution as described in Section 1.

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

[13] Proposal Fees will not be required for Hawaiian Electric 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. **Performance Standards:** The proposed Project must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in Section 2.1 of this RFP and Attachment B, Section 3 of the ESSA. Proposals should include sufficient documentation to support the stated claim that the Project 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. **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is a viable technology for an energy storage project for the purposes of a microgrid of a similar MW scale for large commercial operations (ex. military bases, educational institutions, business facilities, utility plants) 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~~ESSA) 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.

3. **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) energy storage project for the purposes of a microgrid of a similar MW scale for large commercial operations (e.g., military bases, educational institutions, business facilities, utility plants), 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.

4. **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~~ESSA 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 ESSA negotiations. The Company has determined that for purposes of FASB ASC 842, the energy storage facility will be treated as a lease. The Company would evaluate the amount of the lease that would be recorded based on the proposal submitted.

5. **Technical Model:** Developing an accurate and functional facility technical model is imperative to commencing the Interconnection Requirement Study phase of the process. This criterion is to check whether Proposers have provided the required models per Appendix B, Attachment 4, as well as documentation that Proposers have tested their models under all scenarios prescribed in Appendix B, Attachment 3. Additionally, as required by Section 4.2, Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.

4.4 Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Non-price criteria will account for ~~s~~fi~~x~~fty percent (~~60~~50%) of the total score and price-related criteria will account for f~~or~~ifty percent (~~40~~50%) 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 Evaluation of the Price Related Criteria

For the price analysis, a total of 45~~0~~0 points will be awarded. The eligible Proposal with the lowest bid price will receive 45~~0~~0 points. All other eligible Proposals will receive points based on a proportionate reduction using the percentage by which the eligible Proposal's Lump Sum Payment exceeds the lowest Lump Sum Payment. For example, if a Proposal's value is ten (10%) higher than the lowest Lump Sum Payment, the Proposal will be awarded ~~360~~450 points (that is, 45~~0~~0 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal.

4.4.2 Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated on each of the eight (8) non-price criteria categories set forth below to assess their merit in the general areas of Project development feasibility and operational viability. The non-price score accumulated after evaluation of such criteria is subject to reduction based on a Previous Performance evaluation described in Section 4.4.2.2 below.

4.4.2.1 Non-Price Criteria and Scoring

The non-price criteria are as follows and further described below:

1. State of Project Development and Schedule
2. Performance Standards
3. Environmental Compliance and Permitting Plan
4. Experience and Qualifications
5. Financial Strength and Financing Plan
6. ESSA Contract Proposed Modifications
7. Carbon Emissions
8. Technical Model

Each of the first two criteria – State of Project Development and Schedule and Performance Standards – will be weighted twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable). A score of 3 means that a Proposal meets the minimum standard for that criterion.

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. **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 tax-related safe harbor (if applicable) and reach their GCOD specified, including identification of risks and schedule assumptions. Schedules must be created in Microsoft Project and submitted in .mpp file format and 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 tax-related 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 each 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. Proposals that do not appear to include all applicable items from Appendix H that are reasonable for a project of the size proposed may result in a lower ranking for this criterion as it may reflect risk that the Project cannot 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. The Company may require an attestation from the Proposer that they understand their proposed interconnection costs do not appear accurate to the Company and should the Proposer continue and is selected that the Proposer shall be responsible for the final determination of interconnection costs whether or not it is higher than what the Proposer has included in its Proposal.

2. **Performance Standards:** The proposed Project must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the ESSA. 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 ESSA 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 Project 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 Project. Preference will also be provided on facilities that offer additional capabilities.

3. **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.

The Proposal's non-price score for this requirement will reflect the lower of either the Environmental Compliance sub-score or the Permitting Plan sub-score.[14]

4. **Experience and Qualifications –** Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining (including all components of the project) energy storage projects for the purposes of a microgrid of a similar MW scale for large

[14] Two different teams will assess the Proposals for this non-price criteria – one focusing on the environmental impacts of the Proposal and the other on the permitting plans and activities of the Proposer. Each team will contribute a sub-score, and the overall score for this criterion will be based on the lower of the two sub-scores.

commercial operations (ex. military bases, educational institutions, business facilities, utility plants) of a 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 energy storage project for the purposes of a microgrid with grid-forming capabilities of a similar MW scale for large commercial operations 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.

5. **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.

6. **ESSA Contract Proposed Modifications –** Proposers are encouraged to accept the contract terms identified in the model ESSA in its entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model ESSA without edits, 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.

7. **Carbon Emissions** – Proposals should provide responses to the Carbon Criteria Questions provided in Section 2.15 of Appendix B, which will be used to score each Project depending on Project-specific design, siting, procurement, construction and

O&M information likely to impact the Project's lifecycle GHG emissions. In line with carbon neutral goals set forth by Hawaiian Electric[15] and the State of Hawai'i,[16] preference will be given to Proposers expected to have lower lifecycle GHG emissions based on the responses to the Carbon Criteria Questions.

8. **Technical Model** – Developing an accurate and functional facility technical model is imperative to the successful completion of the IRS, the accuracy of study results, and, by extension, the reliability of the System. Models must be accurate representations of the Facility and its operation. The Company validates the quality of the models and acceptability for the IRS though a model checkout process. Proposers should have developed, executed, tested, and documented results of their models prior to submitting a proposal. This criterion is to evaluate the extent to which Proposers have met the requirements in Appendix B, Attachment 3. Scoring will be based on the Proposer's documentation, which are the result of self-testing and benchmarking documentation, demonstrating the model's ability to meet the requirements of Appendix B, Attachment 3. Preference will be given to Proposals for which the accompanying documentation show they are able to meet the requirements and achieve the expected results for all scenarios proposed in Appendix B, Attachment 3.

4.4.2.2 Previous Performance Evaluation

~~A~~An overall Previous Performance scoring criterion will be employed in this RFP. Based on any underperformance experienced within the past five (5) years from any Proposer, its parent company, or an affiliate of such Proposer, the Company will deduct points from the Proposer's total non-price score based on the infraction. Unlike the 8 non-price criteria above that generally score each project on a scale of 1 to 5, the Previous Performance scoring criteria will deduct points from the total non-price score. The total deductions could range from 0 to 20 points. If a Proposer has not been awarded a project by the Company or does not have an existing or past contract with the Company within the past five years, no points will be deducted.

The Company will evaluate Proposers (which for purposes of the Previous Performance criterion, includes the Proposer, its parent company, or any affiliate) for any past underperforming infractions listed below. For each of the following infractions identified for any of the Proposer's existing or past projects, points will be deducted, up to a maximum of ten (10) points, from the Proposer's total non-price score in this RFP. Any infraction caused by force majeure will not be counted into the deductions.

1. Proposer declined a Priority List or Final Award Group invitation. [1 point deduction]
2. Proposer withdrew from an awarded project after accepting a Final Award Group invitation. [2 point deduction]
3. Proposer terminated an executed contract, except for a termination due to a Company-event of default, including declaring the contract null and void, except

[15] See https://www.hawaiianelectric.com/about-us/our-vision-and-commitment/climate-change-action.
[16] See HRS § 225P-5.

for a null and void declaration due to an unfavorable PUC order, which was not reinstated or otherwise superseded by a subsequent contract. [2 point deduction]

4. Termination of an executed contract by Company due to a Proposer-, parent company-, or affiliate-event of default, unless such default was cured by the contracting Proposer, parent company, or affiliate in an expeditious manner to the satisfaction of the Company. [2 point deduction]
5. Proposer missed the Guaranteed Commercial Operations Date under an existing or past ~~PPA~~contract. [1 point deduction for missing GCOD by more than 10 days up to 3 months, 2 point deduction for missing GCOD more than 3 months up to 6 months, and 3 point deduction for missing GCOD by more than 6 months.]
6. Proposer missed one or more ~~PPA~~contract Milestones or Seller's Conditions Precedents, other than GCOD, by more than 10 days. [1 point deduction]
7. Proposer paid liquidated damages during the development phase of the project. [0.5 point deduction]
8. Proposer breached its representations and warranties under the ~~PPA~~contract. [0.5 point deduction]
9. Proposer failed to remedy one or more violations of the Company's performance standards during operations within 6 months. [0.5 point deduction]
10. During the operating term of the ~~PPA~~contract, Proposer paid liquidated damages or failed to meet one or more performance metrics, warranties or guarantees (NEP, EAF, EFOR, MPR, Unit Trips, etc.) for more than one reporting period. [0.5 point deduction]

In addition to the above-referenced infractions, ten (10) points shall be deducted from any Proposal's non-price score in the event the Proposer, its parent company, or an affiliate of the Proposer is involved in any pending litigation in which the Proposer, parent company, or affiliate has made claims against the Company or in which the Company has made claims against the Proposer, parent company, or affiliate, which is not subject of a settlement agreement that is currently in effect. This ten-point deduction for involvement in pending litigation is not subject to the maximum of ten (10) points that may be deducted for the other Previous Performance criterion delineated above. As such, a total of up to twenty (20) points may be deducted from a Proposal's non-price score for infractions of Previous Performance criterion.

During the non-price criteria evaluation, should the Company identify any Previous Performance infractions, including the identification of pending litigation, the Company will notify Proposers of any potential deductions and provide them with the opportunity to respond with a written explanation within five (5) business days. The Company, in consultation with the Independent Observer, will review the explanations and determine whether there were instances outside of the Proposer's control or otherwise excusable. The Company will finalize deductions with the objective of determining the risk of future under/non-performance based on past experiences.

4.4.2.3 Non-Price Scoring

The resulting non-price score will be the sum of the scores for each of the individual non-price criteria minus any points deducted for underperformance infractions based on the

Previous Performance scoring criterion. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each evaluation category with the highest total non-price score will receive ~~6~~5500 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by ~~6~~5500.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level for three (3) or more 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.

4.5 Selection of the Final Award Group

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Eligible Proposal using the ~~40~~50% price-related criteria / ~~60~~50% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both price and non-price scores described above, will result in a ranking of Proposals.

Based on the results of this Evaluation and review with the Independent Observer, the Company will select a single Proposal to the Final Award Group from which to begin contract negotiations. All Proposers will be notified at this stage of the evaluation process whether their Proposal has been awarded.

Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of an ESSA.

Up to the selection announcement of the Final Award Group, should any new legislation for renewable energy be enacted that would offer developers further tax credits, the Company reserves the right to require Proposers to provide a downward pricing adjustment reflective of such savings for the benefit of the Company's customers.

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Final Award Group, the Company reserves the right, at any time prior to submission of the ESSA 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 ESSA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a Proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a Proposal, including failure to reach agreement on the ESSA, 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 determine if another Proposal should be selected.

Chapter 5: Post Evaluation Process

5.1 Project Interconnection Process

At Proposal Submission

Development of accurate and functional facility technical model is imperative to the successful completion of the IRS, the accuracy of study results, and, by extension, the reliability of the System. Models must be accurate representations of the Facility and its operation. The Company validates the quality of the models and acceptability for the IRS though a model checkout process. Proposers should have developed, executed, tested, and documented results of their models prior to submitting a proposal.

A complete package of Project Interconnection Requirement Data Request worksheets, Project single line and three line diagrams, models (see Appendix B, Attachment 3), and documentation prescribed in Appendix B, Attachment 4, including a report, with plots, documenting that Proposers have tested their models under all scenarios, is required upon Proposal submission. See Section 2.11 of Appendix B. Proposals must provide grid-forming and black start capabilities as described in Section 2.1. Proposals are to provide simulated proof, using EMT software, of such performance (i.e., frequency control, voltage control, black start) using the Company provided datasheets for the microgrid elements.

The models required are set forth in Appendix B, Attachment 4. PSSE User Defined models and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the ESSA's performance requirements. These must be checked for functionality by the Proposer or its vendors and consultants prior to submission to the Company (see Appendix B, Attachment 3). Similar and fully accurate PSCAD models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company.

Post Selection to Final Award Group

Within 30 days after selection of the Final Award Group, final submissions, to incorporate any updates, shall be made for the Project data and modelling submittals described above.

The Company will inspect the data packages for general completeness. For any incomplete submission, a list of missing or non-functional items will be provided. The Proposer will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove the Proposal from being selected to the Final Award Group or may terminate ESSA negotiations or executed ESSA, if their submission requirements are deemed incomplete for the lack of requested model. The Proposal must be complete to begin the IRS process. A formal,

technical model checkout will be deferred until a later date when IRS Agreements and deposits are in place, so that the expert subject matter work can be provided by the Company's IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for the selected Project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for the Project and (b) any considerations that are specific to the Project and location.

The technical model checkouts will be conducted first. Upon identification of any functional problems or deficiencies, corrective action shall be taken immediately and on an interactive basis so that the problems or deficiencies can be resolved within 15 Days, including re-submission of data and updated models, or the Project shall be deemed withdrawn. At the discretion of the Company and provided that there is a demonstration of good faith action to minimize delay that would affect the schedule for IRS analyses, a second round of model checkout and problem solving may proceed. Thereafter any notice that the Project is deemed withdrawn for lack of completeness shall be final. Subject to consultation with the Independent Observer, failure to provide all requested material within the time(s) specified, or changes to the data provided after the due date(s), shall result in elimination from the Final Award Group.

The Proposer shall be responsible for the cost of the IRS, under separate agreement. The overall IRS will provide information including, but not limited to, required Interconnection Facilities for a particular Project and any required mitigation measures. The Proposer will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities. Upon reviewing the results of the IRS, the Proposer will have the opportunity to not move forward with the Project and therefore not complete execution of the ESSA in the event that the interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal (see Section 2.3 of the ESSA).

Proposers should assume, at a minimum, a 12-month process for the completion of the IRS, and the execution and filing of the ESSA for approval. Such assumption is dependent on, among other factors, working and finalized models being timely provided for study by Proposers in accordance with the requirements of this Section 5.1.

5.2 Contract Negotiation Process

Within five (5) business days of being notified by the Company of its intent to enter into contract negotiations, the Proposer selected to the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether it intends to proceed with its Proposal. The awarded Proposer will be required to keep its Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. The Company intends to execute and file the ESSA with the PUC for approval upon completion of the Contract Negotiation Process.

5.3 Final Award Group Commitments

5.3.1 Community Outreach and Engagement / Cultural Resource Impacts

The requirements described in this Section and Section 27.17 of the ESSA (Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by the Proposer. Community outreach for the overall microgrid project will be managed by the Company. The selected Proposer will be required to fully cooperate with and assist the Company with community outreach efforts. This includes participating in all public meetings in which the Company requests selected Proposer's attendance, such as large community meetings, roundtables, 1:1 meetings, etc. The selected Proposer will also be required to promptly address any community concerns or issues regarding the Project BESS. The selected Proposer is expected to not only listen to community concerns, but thoughtfully consider any actions (ex. developing a list of pros and cons) and mitigate issues when necessary.

The Company will develop a cultural resource impact plan for this microgrid project. The Company has retained ASM Affiliates as a consultant to conduct a Field Inspection and Cultural Impact Assessment. The selected Proposer will be required to comply with any requirements set forth in the cultural resource impact plan or by the Company with regard to the Project BESS. The selected Proposer will be responsible for obtaining any necessary permits required in the cultural resource plan as instructed by the Company. Additionally, the selected Proposer will be required to fully cooperate with the Company and assist with any cultural resource outreach efforts.

The Company will publicly announce the Final Award Group no more than ~~5~~7 business days after the notification is given to the Proposer who is selected to the Final Award Group. The selected Proposer shall not disclose its selection to the public before the Company publicly announces the Final Award Group selection.

~~On the next~~Within 5 business ~~day after the Company notifies the Proposer they were selected~~days of selection to the Final Award Group, the Proposer shall provide the Company with ~~links to their Project website, which~~the information identified in Appendix B. The Company will post this information on the North Kohala Microgrid page on the Company's website. ~~The Proposer will launch a Project website that will go-live on the day the Company publicly announces the Final Award Group selection. Information on what should be included on the Project website is identified in Appendix B.~~

5.4 Greenhouse Gas Emissions Analysis

The Proposer whose Proposal is selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or Company's consultant(s) upon request, all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support of a PUC application for approval of the ESSA 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 ESSA 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 energy storage services as applicable under the ESSA is reasonable in light of the potential for GHG emissions, and whether the terms of the ESSA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval of ESSA

Any signed ESSA resulting from this RFP is subject to PUC approval as described in the ESSA, including Article 24 thereof.

5.6 Project In-Service

In order to facilitate the timely commissioning of the Project 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 Project, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire Project must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the Proposer and ready for operation prior to Company testing.

If approved drawings are not available, or if the Project is otherwise not test ready as scheduled, the Company will attempt to accommodate adjustments to the schedule taking into account available personnel and other project obligations. The Proposer will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to ESSA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the ESSA.

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix A – Definitions

Hawai‘i Electric Light

"Affiliate" means 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.

"Allowed Capacity" has the meaning set forth in the ESSA.

"Back-up Power" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Battery Energy Storage System" or "BESS" has the meaning set forth in the ESSA.

"BESS Contract Capacity" has the meaning set forth in the ESSA.

"Black-start" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 Hawaiian Electric Proposal Option.

"Code of Conduct Procedures Manual" or "Procedures Manual" means the manual being submitted to 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 Hawaii Electric Light RFP process. The Procedures Manual is attached as Appendix C to this RFP.

"Commercial Operations" has the meaning set forth in the ESSA.

"Community Outreach Plan" is a community outreach and communication plan described in Section 4.3 of the RFP and Section 27.17 of the ESSA.

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

"Company-Owned Interconnection Facilities" has the meaning set forth in Section 1.a of Attachment G of the ESSA.

"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 in Docket No. 03-0372, 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.

"Development Period Security" has the meaning set forth in Section 14.2 of the ESSA.

"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 this RFP.

"Energy Storage Services Agreement" or "ESSA" means the Model Energy Storage Services Agreement attached as Appendix L to this RFP.

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

"Facility" has the meaning set forth in the ESSA.

"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 Proposer selected by the Company which the Company will begin contract negotiations with, based on the results of the Company's evaluation.

"Frequency Regulation" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 on which a Facility first achieves Commercial Operations.

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

"Hawai‘i Electric Light System" or "System" means the electric system owned and operated by Hawai‘i Electric Light on the island of Hawai‘i (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.

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

"Hawaiian Electric Proposal" 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.

"Hawaiian Electric Development Team" means agents of the Company who develop Self-Build proposals.

"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.

"Levelized Benefit" or "LB" means a calculation ($/MWh) used for comparison of Proposals based on information provided in the Proposal submission in this RFP.

"Lump Sum Payment" has the meaning set forth in the ESSA. It may also be referred to as a monthly Lump Sum Payment to reflect the portion of the payment made each month.

"Maximum Rated Output" has the meaning set forth in the ESSA.

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

"MW" means megawatt.

"MWh" means megawatt hour.

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

"NEP" means Net Energy Potential.

"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 ESSA.

"Performance Standards" means the various performance requirements and attributes for the operation of the Facility to the Company as set forth in Section 2.10 of Appendix B, as such standards may be revised from time to time pursuant to Article 22 of the ESSA, and as described in Chapter 2 of this RFP.

"Point of Interconnection" or "POI" has the meaning set forth in the ESSA.

"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.

"Project" means a Facility proposed to Hawai'i Electric Light by a Proposer pursuant to this RFP.

"Proposal" means a proposal submitted to Hawai'i Electric Light by a Proposer pursuant to this RFP.

"Proposal Due Date" means the date stated in RFP Schedule, Table 1, Section 3.1 for the Hawaiian Electric Proposal and the 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 Hawai'i Electric Light 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.

"Rated Active Power Capacity" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Rated Energy Capacity" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"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 1, Section 3.1 of this RFP.

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

"Seller" means the entity that the Company is contracting with, as set forth in the ESSA.

"Seller-Owned Interconnection Facilities" has the meaning set forth in the ESSA.

"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.

"System Impact Study" means a study analyzing the steady-state and dynamic impacts on system power flow, voltage, frequency and transient stability. The analyses includes compatibility of design, construction and operation of the Project with Company engineering standards and operating practices.

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

"Voltage Regulation" has the meaning set forth in Section 2.1 of the RFP and the ESSA.

"Updated Framework" means the updated Framework for Competitive Bidding which was drafted to be more inclusive of various technologies, and filed on February 12, 2021 in Docket No. 2018-0165.

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

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

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

Hawai‘i Electric Light

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, 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 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

To access the RFP event, the Proposer must register as a "Supplier"[1] on Sourcing Intelligence (Electronic Procurement Platform). One Proposal may be submitted with each Supplier registration.

If a Proposer is already registered on Sourcing Intelligence, the Proposer may use their current login information to submit their Proposal. Proposers are asked to refer to their chosen unique company name throughout when referring to it in text responses.

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

[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).

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. 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.

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 User Information (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 the 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 their respective Proposal Due Date (RFP Section 3.1, Table 1).

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.pdf. (example: AceEnergy.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 AceEnergy_2.5_SiteMap.kmz"). Such additional files must follow the naming convention below:
    a. File names must include, in order, Company Name, Appendix B section number, and a file descriptor, as shown in the example file name below:
    AceEnergy_2.5_SiteMap.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).

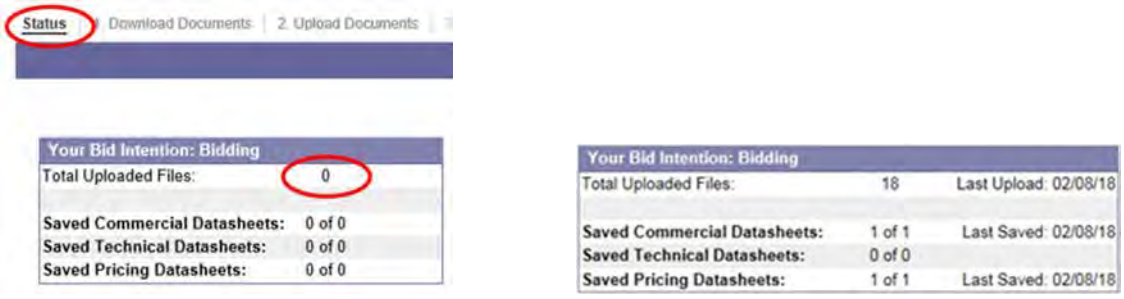
6. Proposers are strongly encouraged to start early and avoid waiting until the last minute to submit the required information. Proposers are allowed to add, modify, and/or delete documents that have been previously submitted any time prior to the event close deadline. For clarity, it is the Proposer's 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 event. 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 SUMMARY TABLE

To be filled out completely by IPP or Affiliate Proposers:

1	**Proposer Name (Company Name)**	
2	**Parent Company/Owner/Sponsor/Business Affiliation/etc.**	
3	**Project Name**	
4	**Lump Sum Payment** ($/Year)	
5	**Energy Storage Capability for the Facility** (MW and MWh)	
6	**The Proposal hereby certifies that Proposer will fulfill all Community Outreach and Engagement / Cultural Resource Impacts requirements identified in Section 5.3.1 of the RFP?** (Yes/No)	
7	**Proposal Guaranteed Commercial Operations Date** (MM/DD/YYYY)	
8	**The Proposer hereby certifies that the Project meets all performance attributes identified in this Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA?** (Yes/No)	
9	**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)	
10	**The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the ESSA.** (Yes/No)	
11	**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)	
12	**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)	
13	**Does the Proposer accept the contract terms identified in the ESSA in its entirety?** (Yes/No)	
13a	If the response to item 13 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.	

To be filled out completely by Hawaiian Electric Proposers:

1	**Proposer Name (Company Name)**	
2	**Parent Company/Owner/Sponsor/Business Affiliation/etc.**	
3	**Project Name**	
4	**Energy Storage Capability for the Facility** (MW and MWh)	
5	**The Proposal hereby certifies that Proposer will fulfill all Community Outreach and Engagement / Cultural Resource Impacts requirements identified in Section 5.3.1 of the RFP?** (Yes/No)	
6	**Proposal Guaranteed Commercial Operations Date** (MM/DD/YYYY)	
7	**The Proposer hereby certifies that the Project meets all performance attributes identified in Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA?** (Yes/No)	
8	**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)	
9	**The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the ESSA.** (Yes/No)	
10	**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)	

11	**Year (YYYY)**	**Project Capital Cost ($)**
12	**Year (YYYY)**	**O&M Cost ($)**
13	**Year (YYYY)**	**Annual Revenue Requirement ($)**

Extend the table for questions 11, 12, and 13 for as many years as needed up to the 10-year ESSA term.

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:

- Document signed by a representative for the Proposer **authorizing the submission** of the Proposal
- Fully executed **Mutual Confidentiality and Non-Disclosure Agreement ("NDA")** (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 applicable **Project Interconnection Data Request worksheet** for the proposed technology and **project single line 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 shall be submitted within the respective timeframes specified in Section 5.1 of the RFP.[2] (See Section 2.11.1 below)
- [For Hawaiian Electric Proposals Only] **Hawaiian Electric Proposal Team Certification Form**. See Appendix G Attachment 1.
- [For Hawaiian Electric Proposals Only] **Revenue Requirements Worksheets** that support the annual revenue requirements estimates shall be submitted. A starter revenue requirements template file can be requested by the Hawaiian Electric Proposal Team via email to the RFP Email Address or through the PowerAdvocate Messaging function once the RFP event opens. The revenue requirements worksheets submitted will be modified to reflect the details of the Project's Proposal. All assumptions used will be reflected in an assumptions input tab.

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.

[2] If the Models, lists, respective files and complete documentation are not submitted with the Proposal upload, they shall be submitted via PowerAdvocate's Messaging as attachments within the respective timeframes specified in Section 5.1 of the RFP.

2.2.3 **Pricing information.** Pricing information must be filled out in the Section 2.0 Proposal Summary Table above. Provide any 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:

- Technology Type (i.e. lithium ion battery)
- Maximum Rated Output, as defined in the applicable contract (MW)
- Discharge Duration at Maximum Rated Output (hours)
- Storage Energy Capacity (MWh) available at the point of interconnection (i.e. BESS Contract Capacity as defined in the appliable contract)
- Operational Limitations, such as, but not limited to: energy throughput limits (daily, monthly, annually), State of Charge restrictions (min/max SOC while at rest (not charging/discharging)), etc. Proposed Operational Limits cannot be in conflict with the energy discharge requirement in Section 1.2.7 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 ESSA. 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 [For IPP and Affiliate Proposals] Identify all **estimated development and capital costs** for, at a minimum:

- Equipment
  - Identify the manufacturer and model number for all major equipment
- Construction
  - Identify and breakdown what is included in this category and any assumptions made
- Engineering
- Seller-Owned Interconnection Facilities
  - Identify and breakdown what is included in this category and any assumptions made
- Land
- Annual O&M
- 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 ESSA, as those provisions reflect the benefit the Company seeks from the Project's storage functionality.

[For Hawaiian Electric Proposals Only] Identify all **estimated development and capital costs** for, at a minimum:

- Facility (including any generation and storage components)
- Outside Services
- Interconnection
- Overhead Costs
- Allowance for Funds Used During Construction
- Annual O&M
- 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 ESSA, 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 Energy Storage Services Agreement or any other applicable project agreements and State of Hawai'i Public Utilities Commission approval of the Energy Storage Services 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 AND FINANCIAL COMPLIANCE

2.4.1 If Proposers elect to propose modifications to the ESSA, **provide a Microsoft Word red-line version of the ESSA** 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 ESSA with their Proposal submission will be deemed to have accepted the ESSA in its entirety. If no modifications are proposed, please state in this section "no modifications to the ESSA".

As set forth in RFP Section 3.8.5.1, proposed modifications to the ESSA 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.

2.5 AKONI PULE SITE INFORMATION

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

- Proposed location of all equipment
- Proposed location of all facilities on the Akoni Pule Site, including any proposed line extensions
- Site boundaries (if the proposed Project does not cover the entire Akoni Pule Site)

2.5.2 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)
- Description of the rationale for the interconnection route

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
- 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
  - Noise
  - Roadways and Road and Air Traffic
  - Utilities
- Socio-Economic Characteristics
- Aesthetic/Visual Resources and Impact
- 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 RESERVED

2.8 WEBSITE INFORMATION

2.8.1 Proposer selected to the Final Award Group must ~~display~~provide the below table of information ~~on their Project website~~to the Company as described in Section 5.3 of the RFP to provide communities Project information that is of interest to them in a standard format.

PROJECT SUMMARY

*	Proposer Name (Company name)	
*	Parent Company/Owner/Sponsor/Business Affiliate/etc.	
*	Project Name	
*	Net AC Capacity of the Facility (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)

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 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. See Article 5 of the ESSA.

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.

2.10.2 Capability of **Meeting Performance Standards**. The proposed Facility must meet the performance attributes identified in Section 2.1 of the RFP and Attachment B, Section 3 of the ESSA. 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 energy storage inverters 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 ESSA.

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 **Short-Term Over-Current**: Provide the facility's short-term over-current capability to supply inrush currents during energizing of transformers and distribution feeders and starting auxiliary motors of conventional power plants.

2.10.9 **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.

2.10.10 **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. 11 **Frequency Response:** Provide the facility's frequency response characteristics as required by the ESSA, including time of response, tunable parameters, alternate frequency response modes, and means of implementing such features.

2.10.12 **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

2.10.13 **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.

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

2.10.15 **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.

2.10.16 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.

2.10.17 **Energy Storage performance standards:** 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

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 4 from the "1. Download Documents" tab.

2.11.2 Provide the completed **Project Interconnection Requirement Study Data Request worksheet** with the Proposal submission. 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 (storage) MSExcel files. Also provide all **project diagram(s)** with the Proposal submission. **Models for equipment and controls, list(s)** identifying components and **respective files** (for inverters and power plant controller), and **complete documentation with instructions** shall be submitted within the timeframes specified in Section 2.3.2 of the RFP.[2] 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 this 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 energy storage projects for the purposes of a microgrid of a similar MW scale for large commercial operations (ex. military bases, educational institutions, business facilities, utility plants)** 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)**	**Storage Technology**	**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)
  - Cultural Resource implications and mitigation activities
  - Community outreach and engagement activities

  - Energy resource assessment
  - Financing
  - Engineering
  - Procurement
  - Facility construction including construction management events
  - Applicable reporting milestone events specified in the ESSA
  - Testing
  - Interconnection (including engineering, procurement, and construction)
  - Commercial Operations Date
  - All other important elements outside of the direct construction of the Project
- The project schedule must be created in Microsoft Project and submitted in a .mpp file format.
- 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 ESSA and/or other agreements.

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

- Identification of contracting/subcontracting plans
- Modular construction
- Safety plans[3]
- 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.

2.15 CARBON EMISSION QUESTIONNAIRE

2.15.1 Answer the following Carbon Criteria questions. To mitigate the possibility of providing responses to questions that are optimistic or would result in a better score for the Carbon Criteria questions, please provide conservative answers where answers are unknown or uncertain. Guidance for providing conservative answers has been provided for each question. If a question or Category's questions are not applicable to the Project, please leave blank. For instance, if the Project generation technology does not include solar, leave questions in Category "3e. Procurement – Solar" blank.

[3] 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.

Category	#	Question	*Answer Choices*
1. Siting	1	Please provide the Project's expected annual production capacity per developed Site area in units of MWh/yr/m^2. *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected annual production capacity per developed Site area in units of MWh/yr/m^2.*	*Numerical write in*
	2	What is the expected distance from the Project's generation/storage location to the point of interconnection? *If the answer to this question is unknown or if there are multiple possibilities, please conservatively provide the furthest expected distance from the Project's generation/storage location to the point of interconnection*	*Numerical write in*
	3	What fraction of the Project's Site is a "greenfield", e.g. has not been previously developed? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected "greenfield" fraction.*	*Numerical write in*
	4	What fraction of the Project's Site requires grading? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction.*	*Numerical write in*
	5	What is the expected fraction (in terms of CAPEX) of infrastructure being reused (includes roads, buildings, trenches, pads) for the Project? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
2. Procurement	6	What fraction of concrete, fencing, gravel and other roadway materials used for the Project will be locally sourced on island? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	7	If available, please provide manufacturer-specific carbon footprint for major components and feedstock, along with supporting documentation. For power generating components, such as solar panels/wind turbines/biomass combustor, please provide the carbon footprint in units of kg CO_2e/kWh. For carbon feedstock, please provide in units of kg CO_2e/MMBtu energy content. *If this information is unavailable, please answer "Not available at this time".*	*Numerical write-in and supporting documentation*
	8	What fraction of roadway materials and gravel used for the Project will be made from recycled materials?	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.	
3a. Procurement – Biofuels ***please answer only if the project includes biofuels-based generation***	9	What fraction of the biofuel feedstock used for the Project is also a food or animal feedstock? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction.*	*Numerical write in*
	10	What fraction of the biofuel feedstock used for the Project is a waste product? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	11	What fraction of the harvested biofuel feedstock used for the Project will be replaced and regrown within one year of harvesting? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction.*	*Numerical write in*
	12	How much hydrogen will be used in the biofuel production process for hydroprocessing (kg hydrogen/kg biofuel produced)? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected amount in units of kg hydrogen/kg biofuel produced.*	*Numerical write in*
	13	How much fossil fuel energy will be consumed per electricity generated by the Project (kg fossil fuel/kWh)? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected amount in units of kg fossil fuel/kWh.*	*Numerical write in*
3b. Procurement – Biomass ***please answer only if the project includes biomass-based generation***	14	What is the expected overall efficiency of the Project's biomass conversion to electricity (electricity generated by the Project divided by the energy in the biomass combusted)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected overall efficiency.*	*Numerical write in*
	15	What is the expected biomass combustion efficiency of the biomass used for the Project (actual heat produced by combustion divided by the total heat potential of the biomass combusted)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected biomass combustion efficiency.*	*Numerical write in*
	16	What fraction of the harvested biomass feedstock used for the Project will be replaced and regrown within one year of harvesting?	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction.	
3c. Procurement – Energy Storage ***please answer only if the project includes energy storage***	17	What is the expected return efficiency of the Project's energy storage system (MWh returned to the grid/MWh stored)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected return efficiency.*	*Numerical write in*
	18	How many cycles will the batteries used for the Project's energy storage system undergo annually? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected number of cycles.*	*Numerical write in*
	19	What is the expected battery lifetime before degradation of the Project's energy storage efficiency below 80%? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected lifetime.*	*Numerical write in*
3d. Procurement – Geothermal ***please answer only if the project includes geothermal generation***	20	Will the Project's geothermal process be an enhanced geothermal system (EGS), flash/dry steam, or binary steam power plant? *If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".*	*Text write in*
	21	Will the Project's geothermal process be closed loop? *If the answer to this question is unknown or uncertain, please conservatively answer "No".*	*Yes / No*
	22	What percentage of mass of fluid will be cascaded compared to total extracted fluid mass? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected percentage.*	*Numerical write in*
	23	Will new geothermal wells need to be drilled for the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "Yes".*	*Yes / No*
3e. Procurement – Solar ***please answer only if the project includes solar generation***	24	What is the expected solar irradiance for the Project (kW/m^2)? *If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".*	*Numerical write in*
	25	Which type of solar panels will be installed for the Project? a. Cadmium Telluride b. Single Crystalline Silicon c. Multicrystalline Silicon d. Other, if yes, please provide details regarding solar panel technology type.	*Yes/No* *If "Other", include write-in*

		If the answer to this question is unknown or uncertain, please conservatively answer "Not known at this time".	
	26	What is the solar conversion efficiency of the solar panels (solar kW/m^2 / kW/m^2 produced) used for the Project? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum solar conversion efficiency.*	*Numerical write in*
3f. Procurement – Waste-to-Energy ***please answer only if the project includes Waste-to-Energy generation***	27	What fraction of the waste feedstock used for the Project will be organic waste (food, waste paper, green (i.e. compostable) waste, etc.)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	28	What fraction of the fleet used to transport the waste feedstock to the Facility will consume renewable diesel or be electric? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	29	If the Waste-to-Energy process used for the Project will emit greenhouse gases, what fraction of the greenhouse gases will be captured? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Yes / No* *If "Yes", include numerical write in*
	30	What is the expected overall electrical efficiency of the Project process (electricity produced divided by the energy utilized for the waste-to-energy process) (kWh produced/kWh utilized for processing)? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum overall electrical efficiency expected.*	*Numerical write in*
3g. Procurement – Wind ***please answer only if the project includes wind generation***	31	What fraction of the rotors used for the Project will be made from recycled materials? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	32	Please provide the expected wind energy availability for the Project's location as it is related to the available wind speed (MW). *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected wind energy availability.*	*Numerical write in*
	33	Please provide the expected power generation ratio of the Project.	*Numerical write in*

		If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected power generation ratio.	
	34	Please provide the expected power coefficient of the Project. *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected power coefficient of the Project.*	*Numerical write in*
	35	What percentage by weight of the turbine tower will be steel? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected percentage.*	*Numerical write in*
4. Construction	36	What fraction of the equipment used during the construction phase of the Project will consume renewable fuel? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
	37	Will the Site have an anti-idle policy for the equipment used during the construction phase of the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "No".*	*Yes / No*
	38	How many hours of helicopter use will be required for construction phase of the Project? *If the answer to this question is unknown or uncertain, please conservatively answer "Yes".*	*Numerical write in*
	39	What fraction of construction workers traveling to the Site during the construction phase of the Project will be local to Hawai'i? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum fraction of construction workers traveling to the Site during the construction phase of the Project may be local to Hawai'i.*	*Numerical write in*
5. Operations & Maintenance	40	What fraction of Project equipment and materials will need to be replaced during the Project's proposed Contract Term (e.g., Project lifetime) as a percentage of capital cost? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected fraction of Project equipment and materials may need to be replaced during the Project's proposed Contract Term by using an above-average scenario for number of equipment failures and wear-and-tear on project materials.*	*Numerical write in*
	41	Will any equipment containing high global warming potential gases (such as sulfur hexafluoride (SF_6) or hydrofluorocarbons (HFCs)) be installed or used during operation? If yes, please	*Yes / No If "Yes", include*

		provide the type of equipment and high global warming potential greenhouse gas and approximate quantity (kg) leaked per year. *If the answer to this question is unknown or uncertain, please conservatively assume "Yes" and provide a maximum expected quantity(kg) leaked per year.*	*numerical write in*
	42	What is the expected electricity load from the grid over the Project's proposed Contract Term as a percentage of the Project's total electricity production? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum electricity load from the grid as a percentage of the Project's total electricity production.*	*Numerical write in*
	43	What is the expected onsite electricity use over the Project's proposed Contract Term as a percentage of the Project's total electricity production? *If the answer to this question is unknown or uncertain, please conservatively provide the maximum expected onsite electricity use over the Project's proposed Contract Term as a percentage of the Project's total electricity production.*	*Numerical write in*
	44	What fraction of the equipment used for the Operations & Maintenance of the Project will consume renewable fuel or be electric? *If the answer to this question is unknown or uncertain, please conservatively provide the minimum expected fraction.*	*Numerical write in*
6. General	45	Please provide any additional information available likely to impact the Project's lifecycle (i.e., including raw materials and extraction, transportation, construction, operations & maintenance, and decommissioning & disposal) greenhouse gas emissions.	*Text write in*
	46	Please describe any additional actions that will be taken to reduce the Project's lifecycle greenhouse gas emissions, if not already captured in above responses. If no actions are intended at this time, please state that.	*Text write in*

Certification of Counsel for Proposer
Hawai'i Electric Light Company, Inc.

Pursuant to Section 1.7.4 of Hawai'i Electric Light Company, Inc.("Company) Request For Proposals for Energy Storage, North Kohala, Island of Hawai'i ("RFP"), the Company 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 unaffiliated 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: _____ ;

(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 such proposer (by contract or organizational structure), including other proposers responding to the RFP;

(3) the Company 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 certificate 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 such 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, 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. Such legal counsel will also be required to submit a similar certification at the conclusion of contract 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 STORAGE
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 STORAGE
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
4)	**For the Inverter Based Generating Facility, please provide the following data:**	
	a. Inverter manufacturer, Type, Size, Impedances. Attach copy of inverter data sheet.	
	b. Power Factor Range Capability	
	c. Inverter Reactive Power Capability Curve	
	d. Auxiliary 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)	**Energy Storage System**	
	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	

6)	**For the 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 STORAGE
PROJECT: _____
DATE: _____
(Nonexclusive Preliminary List)
*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
7)	**Please provide the following software models that accurately represent the Facility:** (For model requirements, refer to the HECO Facility Technical Model Requirements and Review Process and PSCAD Model Requirements Rev.9)	
	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 representation 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 compatibility 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)	
8)	**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.	
9)	**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).	

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

		Response
10)	**For the power fuses, please provide:**	
	a. The manufacturer, type, size, and interrupting capability.	
	b. The minimum melt and total clearing curves.	
11)	**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]

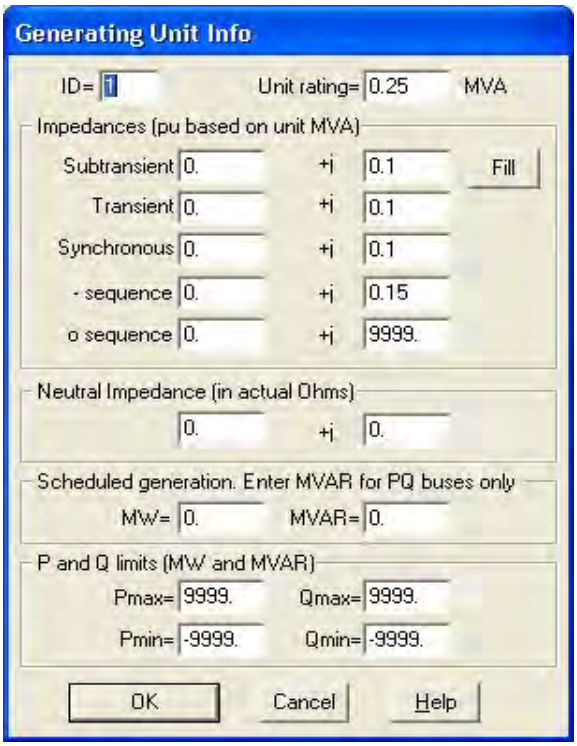
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

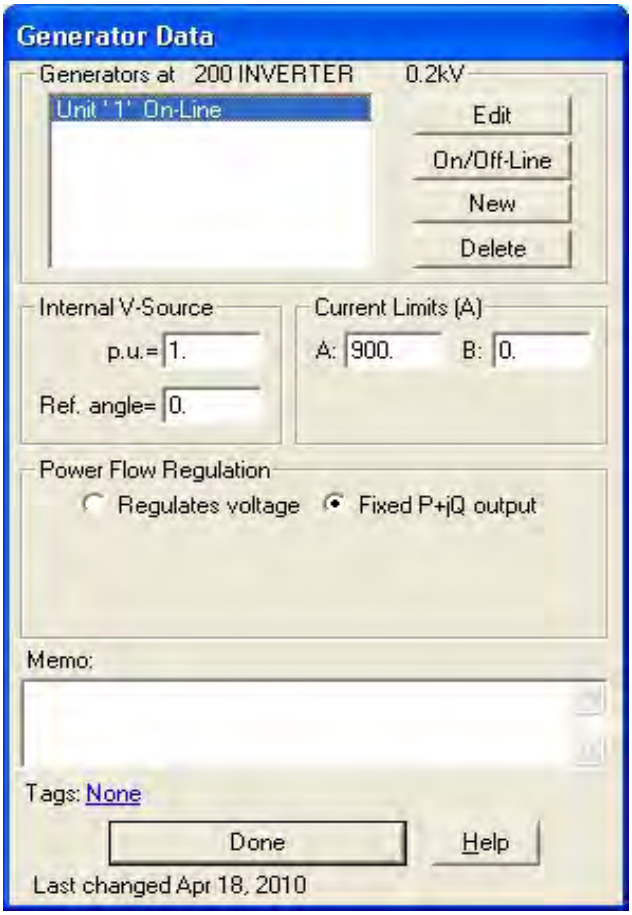
[1] Internal open circuit voltage

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:

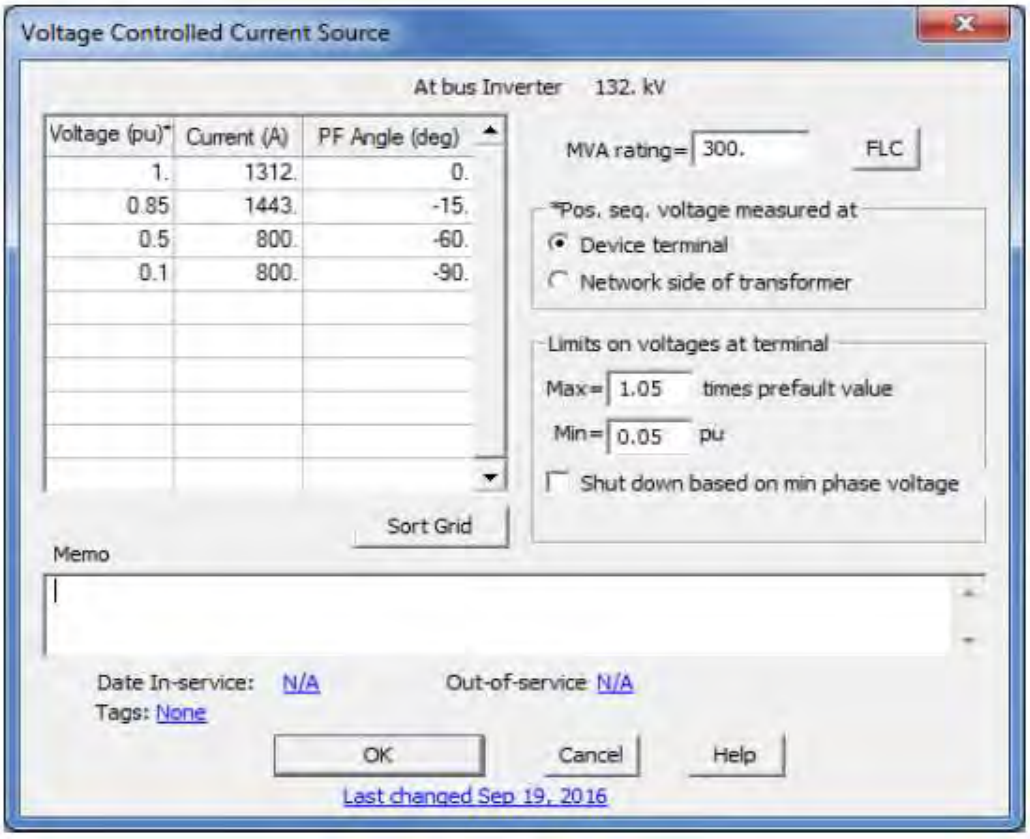
Voltage PU	Current (A)	PF Angle (deg)

[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

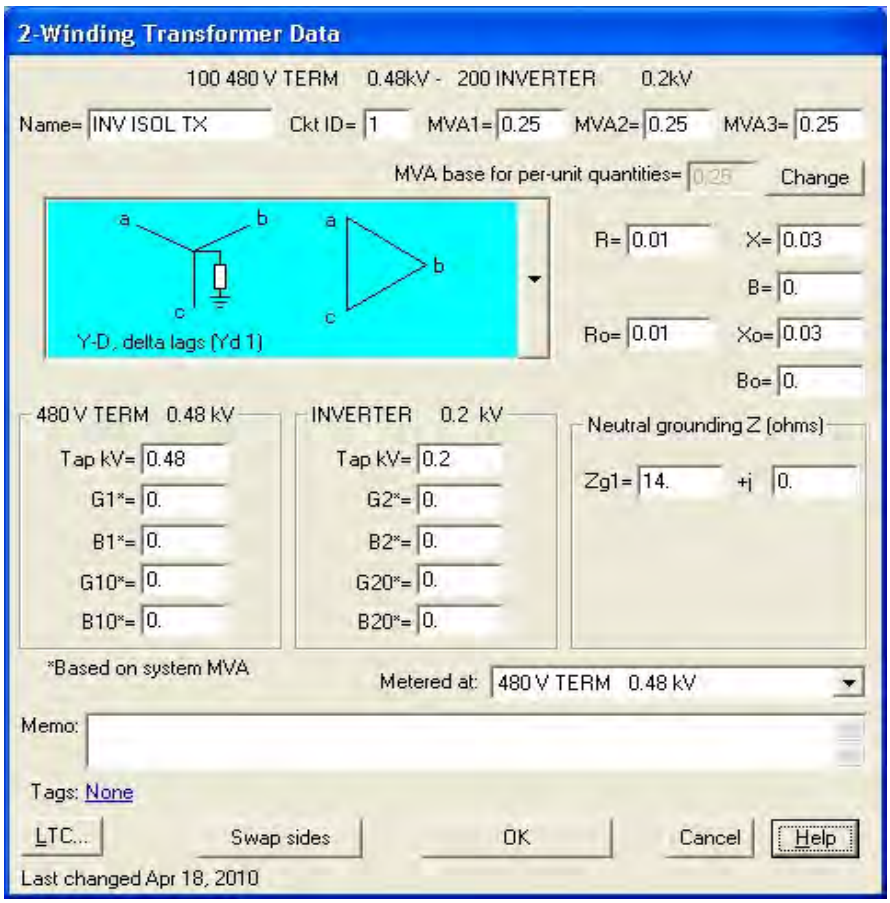
[2] Impedances in **Per Unit** based on kVA

	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

Table of Contents

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.

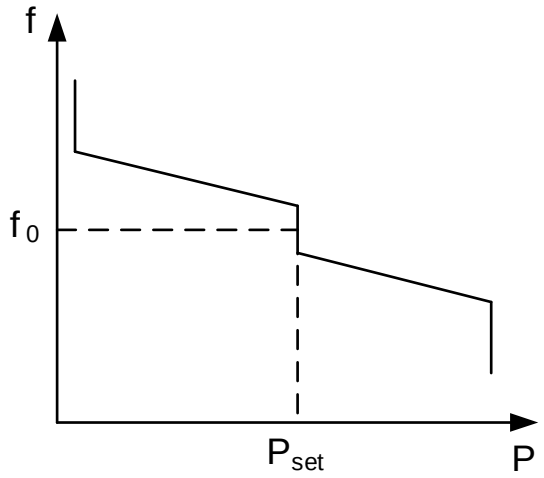


Figure 1 – Frequency Droop Control Characteristic with Deadband

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

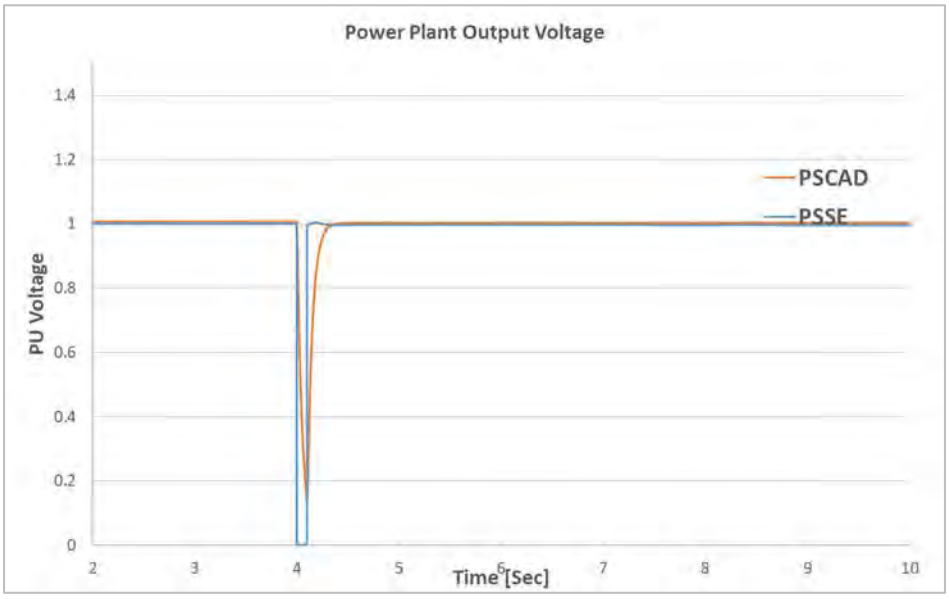


Figure 1: Overlaid plot for power plant voltage

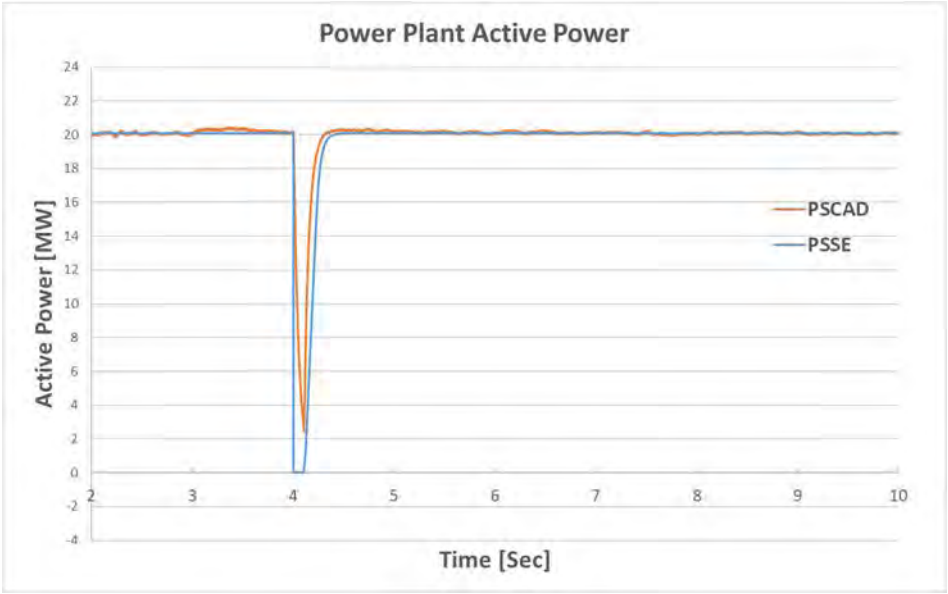


Figure 2: Overlaid plot for power plant active power generation

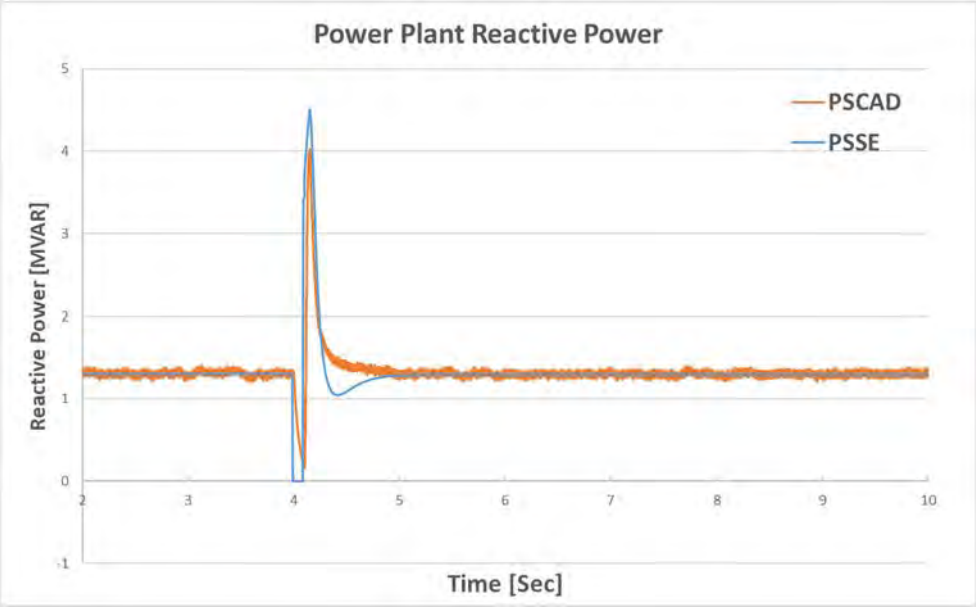


Figure 3: Overlaid plot for power plant reactive power generation

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.

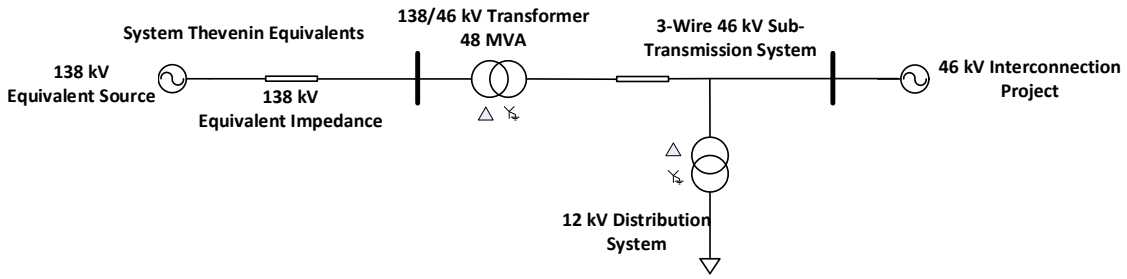


Figure 4: Testing circuit single line diagram for 46 kV project

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.

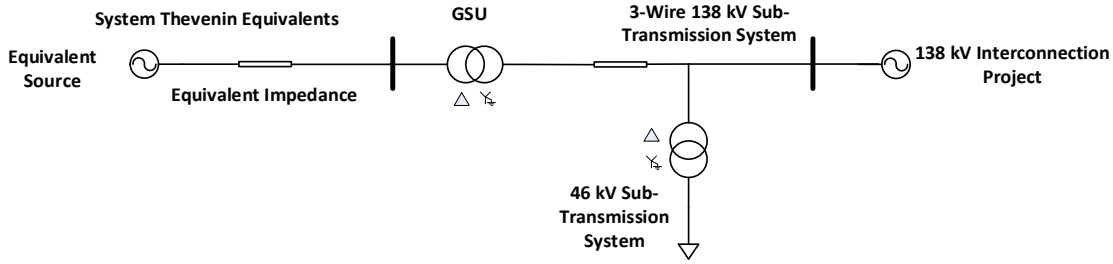


Figure 5: Testing circuit single line diagram for 138 kV project

North Kohala Model and Interconnection Requirements Study (IRS) Scope

<table>
<tr><td>Island</td><td>Hawai‘i</td></tr>
<tr><td>Size</td><td>Connecting to Hawi Substation
Single Project</td></tr>
<tr><td>Models</td><td>Grid Forming PSS®E User Defined, Grid Forming PSCAD, and Grid Forming ASPEN.

Note:
Grid Following PSS®E User Defined, Grid Following PSS®E Generic, Grid Following PSCAD, and Grid Following ASPEN may potentially be required if issues with Grid Forming performance are identified.</td></tr>
<tr><td>System Impact Study Scope</td><td>
<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
☐ Harmonics Monitoring Assessment</td></tr>
</table>
</td></tr>
<tr><td>Reference Single Line Diagram
(See Appendix H)</td><td>See Single Line Diagram for the site</td></tr>
</table>

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI'I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix C – Code of Conduct Procedures Manual

Hawai'i Electric Light

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 a system resource proposal pursuant 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 North Kohala Energy Storage RFP* (the "Code of Conduct") requires the Company 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 Company's competitive bidding process for system resources. This Procedures Manual has been developed for the Company's North Kohala Energy Storage RFP 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 Hawaiian Electric Proposal 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 North Kohala Energy Storage 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 Company's 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 North Kohala Energy Storage RFP* developed by Hawaii Electric Light Company, Inc. ("Company") 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 Hawaiian Electric Proposal Team with Shared Resources or Unassigned Company Resources, accessed via the RFP Communication Tool Kit SharePoint Site.
- Company Executive in Charge – The Company executive responsible for ensuring compliance with this Code of Conduct and serving as the point of contact for the Independent Observer for reporting any violations by the Company of the Code of Conduct. The Company Corporate Compliance Officer shall remain responsible for the Company's independent corporate code of conduct and may support compliance matters and questions arising with employees, agents and other representatives of the Company, e.g., conflicts of interest, with respect to this Code of Conduct.
- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company's RFP conducted under the Framework and the evaluation of bids submitted in response to this RFP. Subject to the transfer rules specified herein, the Company RFP Team will have fixed team members who will not have any involvement with the Hawaiian Electric Proposal Team for this RFP.
- Hawaiian Electric Proposal Team – The Company personnel and outside consultants responsible for the development of the Hawaiian Electric Proposal Team responses to the RFP. Subject to the transfer rules specified herein, the Hawaiian Electric Proposal Team will have fixed team members who will not have any involvement with the Company RFP Team for this 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. The Energy Contract Manager shall be a member of the Company RFP Team.
- 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 system 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 the RFP. Non- Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal price related criteria set forth in the RFP. 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 Hawaiian Electric Proposal Team participating in the RFP and submitting a proposal shall be considered a Proposer.
- RFP – A written request for proposals issued by the Company 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, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources located in the RFP Communication Tool Kit SharePoint Site. Names and roles of Company employee and consultants 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team (but not any Affiliate Team) to assist in meeting unforeseen tasks for the RFP or the Hawaiian Electric Proposal Team 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

The Code of Conduct and this Procedures Manual address (1) communication requirements and procedures associated with the relationship between utility employees

(Company RFP Team, Hawaiian Electric Proposal Team, Shared Resources and Unassigned Company Resources); (2) communication requirements and procedures associated with the relationship between the Company RFP Team, the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team for the purposes of completing their efforts to effectively evaluate the RFP or to submit a bid in response to the RFP. The small size of the Company 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 Company for this specific purpose.

IV. ORGANIZATION AND COMMUNICATION RESPONSIBILITIES

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

A. Organization

The Company shall identify and maintain two separate teams to facilitate the independence and objectivity of the Company resources working on the RFP and ensure an arms-length relationship with the resources working on the Hawaiian Electric project to avoid any real or perceived inequity in the RFP process. The two essential teams shall be the "Company RFP Team" and the "Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team. Shared Resource employees are allowed to carry on with both their RFP (for either the Company RFP Team and/or the Hawaiian Electric 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 Hawaiian Electric Proposal Team. Shared Resource employees, however, will not participate in the evaluation and selection process of proposals submitted in response to the RFP. Rules for communications between Shared Resources and the essential teams are specified below.

Company employees unassigned to the RFP may be called upon by the Company RFP Team, Hawaiian Electric Proposal 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 be led by a Director/Manager level employee and consist primarily of 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 Hawaiian Electric Proposal Team. The Hawaiian Electric Proposal Team, tasked with preparing any Company proposal to be submitted by the Company in response to the 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 the 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 the 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 the 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal) 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 the RFP (or stage or phase of the RFP). After completion of the RFP (or stage or phase of the 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: (a) participate or be involved in establishing the evaluation criteria and the evaluation of any subsequent stage(s) or phase(s) of the RFP which such employee participated in with his/her former team; or (b) participate or be involved in the formulation and/or origination of a proposal for any subsequent stage(s) or phase(s) of the 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 Hawaiian Electric Proposal 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 Company 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 Hawaiian Electric proposals and/or Affiliate proposals do not have any unfair competitive advantage over third-party bids, the Company 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, Hawaiian Electric 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team. Specific rules to log communications with the Company RFP Team or the Hawaiian Electric Proposal 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 Hawaiian Electric proposal 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 Hawaiian Electric Proposal Team members."

2. Communications Between the Company RFP Team and Proposers, including the Hawaiian Electric Proposal 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 via the communication means specified in the RFP (e.g. specified website link provided by the Company (the "Company RFP website"), specified RFP electronic procurement platform, and/or specified RFP electronic mail address ("email")). The IO will monitor all communications through any communication means specified in the RFP. To ensure fair and equal access to information, any Hawaiian Electric Proposal Team and/or Affiliate Team shall be considered a Proposer for communication purposes and any request for information from the Hawaiian Electric Proposal Team or Affiliate Team to the Company RFP Team shall be through the communication means specified in the Company RFP.

Subject to confidentiality obligations, it is the objective of the Code of

Conduct that all Proposers, including the Hawaiian Electric Proposal 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 via the communications means specified in the RFP.

b. Questions will be reviewed and responses will be coordinated with the appropriate functional area within the Company for a response. Every reasonable effort will be made to provide responses in a timely manner.

c. All responses, including the classification of such response, i.e., whether non-confidential or confidential as described below, will be made available to the IO for monitoring purposes. The IO may choose to comment on any response at its discretion.

d. Depending on the questions received, responses may involve Confidential Information of the Company and/or Proposers. Release of any Company Confidential Information must be approved in advance by the Company executive authorized to release the Confidential Information. Any release of Company Confidential Information shall be accompanied by appropriate confidentiality and non-disclosure agreements, protective orders or other means required to maintain the confidentiality of the Company Confidential Information while still permitting its disclosure under circumstances deemed appropriate by the responsible Company executive. Other non-Company Confidential

Information will not be shared without the prior written consent of the owner of such Confidential Information and the execution of appropriate confidentiality and non-disclosure agreements by all recipients of such Confidential Information. Responses will be categorized as follows:

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

e. Prior to and during the RFP, 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 communication means specified in the. 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 communication means specified in the RFP. 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 Company and the Commission.

The Company's Regulatory Affairs staff will be responsible for initiating communication with the Commission regarding the RFP or the Company's 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 Hawaiian Electric Proposal Team or any Affiliate Team.

Any communication between the Company RFP Team and the Hawaiian Electric Proposal Team or any Affiliate Team with respect to the RFP shall be handled no differently than with Proposers and other outside parties. Accordingly, the Hawaiian Electric Proposal Team or any Affiliate Team will be required to submit any questions or information requests to the Company RFP Team via the communication method specified in the RFP 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 Hawaiian Electric proposal 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 Hawaiian Electric Proposal or Affiliate Teams except in accordance with the procedures in the Code of Conduct, this Manual or the RFP.

Company RFP Team members and Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team and Shared Resources.

Shared Resources may provide services to the Company RFP Team and the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team or any information developed on behalf of the Hawaiian Electric Proposal Team with the Company RFP Team, except through the formal communication process outlined above, i.e., through the communication means specified in the RFP.

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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team and any Unassigned Company Resource or consultant that is not a Shared Resource.

There may be times where a Company RFP or Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal Team shall consult with the Company executive for resolution.

8. Communications between the Company RFP Team, the Hawaiian Electric Proposal Team and Company Management.

The Company RFP Team and the Hawaiian Electric Proposal Team will necessarily require management approval of the RFP and the Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 the RFP, the Code of Conduct for the RFP will be activated. However, if the Hawaiian Electric Proposal Team determines at any time that it will not pursue a Hawaiian Electric option for the 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 Hawaiian Electric Proposal Team must then conduct activities on the RFP or Hawaiian Electric proposal 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 Hawaiian Electric Proposal Team option except through the formal communication processes outlined above.

C. Immediately upon assignment to a Company team (RFP or Hawaiian

Electric Proposal), 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 Hawaiian Electric Proposal), he or she will not be able to transfer to the other Company team during the pendency of any particular stage or phase of a particular RFP. Transfers of members of any particular team to another team after the RFP, or a particular stage or phase of the RFP, is completed shall be governed by the transfer rules specified herein. 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 RFP, or the particular stage or phase of the RFP, has been completed.

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 the RFP, a Roster listing employees and consultants in their role; Company RFP Team, Hawaiian Electric Proposal Team, Shared Resource or Unassigned Company Resource, will be generated. 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 Hawaiian Electric Proposal 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 Hawaiian Electric Proposal 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 the RFP will terminate after the following two conditions are met when:

- the final contract(s) for the RFP conducted under the Framework with the successful proposer(s) is/are executed, or when written notice of termination of the RFP 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

- a certification of Code of Conduct compliance by all employees participating in the 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 Company's 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 Company's 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.

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REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix D – PowerAdvocate User Information

Hawai‘i Electric Light

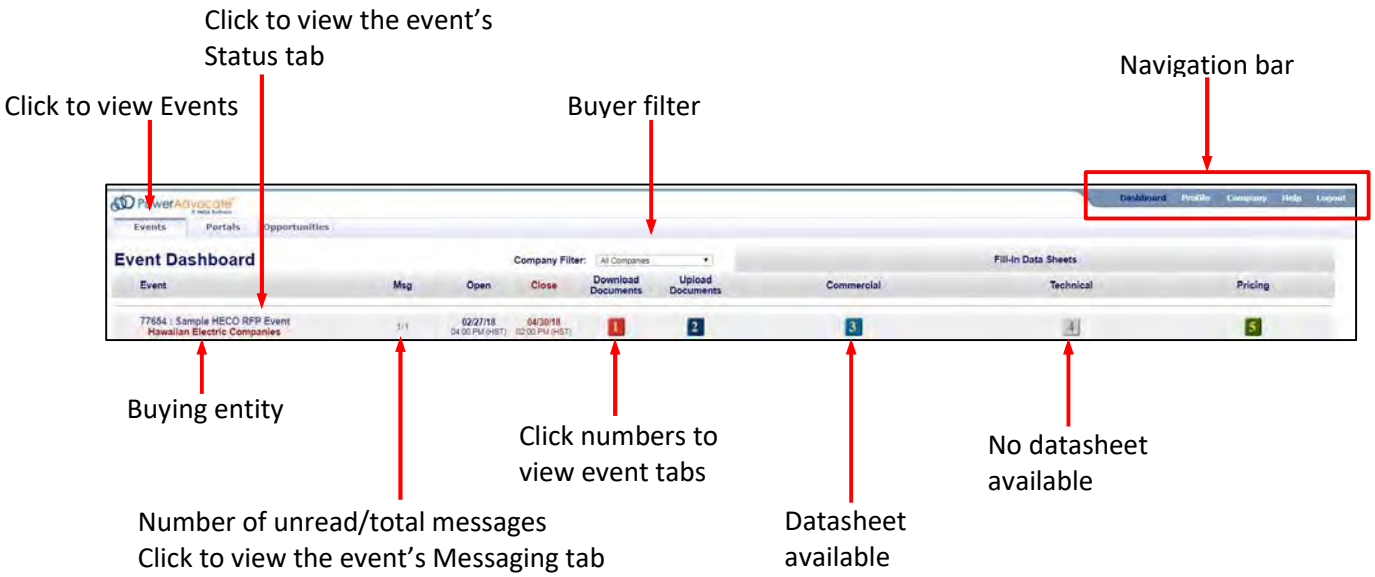
Sourcing Intelligence Quick Start for Suppliers

Logging In

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

Dashboard

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



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

Downloading Bid Packages

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

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

Uploading Documents

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

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

Datasheets

Datasheets (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 this RFP, 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.
- PowerAdvocate is now part of Wood Mackenzie.

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REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix E – Mutual Confidentiality and Non-Disclosure Agreement

Hawai‘i Electric Light

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. 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 renewable energy generation and/or storage 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 Hawai'i, 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 energy storage service agreement, the terms of which must be agreed upon by the parties ("ESSA Negotiations"). For purposes of this Agreement the term "Project" refers to the RFP, Proposal, potential IRS and ESSA 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, contractors, financing parties and investors (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', contractors', suppliers', financing parties', investors' and other third parties' past, present and future business affairs including, without limitation, finances, customer information, supplier

information, pricing and cost information, products, services, designs, processes, organizational structure and internal practices, forecasts, sales and other financial results, records and budgets, business, marketing, development, sales, other commercial information and strategies, and negotiating positions and drafts made or exchanged between IPP and the Companies during negotiations or other discussions prior to such negotiated documents or agreements becoming public;

(b) all "Personally Identifiable Information," which shall include all information belonging to an individual that may be used to track, locate, or identify such individual, or which is otherwise protected by privacy laws, including but not limited to IP address, residential address, personal telephone number, social security number, date of birth, government-issued identification number, financial account number, personal email address, and username or password, all of which shall always be considered and deemed to be Confidential Information whether marked as "confidential" or not;

(c) all "Critical Infrastructure Confidential Information" concerning the Companies' generation, transmission, and distribution systems or its information technology or security systems, including but not limited to all designs, specifications, 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, all of which shall always be considered and deemed to be Confidential Information whether marked as "confidential" or not;

(d) 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;

(e) all previously disclosed information designated as or deemed to be "Confidential Information" under previous nondisclosure and confidentiality agreements executed between the parties, whether expired or still in effect, it being the understanding of the parties that any/all such agreement(s) be deemed superseded by this Agreement and that all Confidential Information exchanged between the parties to date shall be henceforth governed by this Agreement;

(f) any third-party confidential information included with, or incorporated in, any information provided by the Provider to the Recipient or its Representatives, including source code of any of Provider's vendors or suppliers; and

(g) 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.

IPP and the Companies understand that in the course of obtaining approval of the Project, any documents filed with the State of Hawai'i Public Utilities Commission ("Commission") may be considered government records subject to the Uniform Information Practices Act ("UIPA"), Hawai'i Revised Statutes ("HRS") Chapter 92F.

All written Confidential Information provided to the Companies by IPP and marked as "confidential" in response to a request by the Companies for purposes of filing such information with the Commission shall be accompanied in writing by (1) a clear statement of the basis for its confidential status, including the applicability of any UIPA exceptions under HRS § 92-13, (2) a description, with particularity, of the cognizable harm to IPP if such information were to be disclosed publicly, and (3) if applicable, any additional justification or harm to IPP were the Confidential Information to be disclosed to other parties or participants in the subject Commission proceeding (collectively, the "Justification"). IPP expressly allows the Companies to disclose or otherwise use the Justification in order to justify withholding the Confidential Information from public disclosure in accordance with this Agreement, including without limitation, filing of the information in a Commission proceeding pursuant to Section 4(e) below and, to the extent necessary, any required disclosure pursuant to Section 5 (Required Disclosure and Notice) below. The IPP will provide the Companies with such Justification within three (3) business days of the Companies' written request for such Justification, provided that if the Companies are given less than five (5) business days by the Commission to produce the Justification, then the IPP will provide the Companies with the Justification not less than 24 hours before the Companies' due date for such Justification, provided that (1) the Companies provides the IPP with the request as soon as reasonably practicable and (2) to the extent possible, IPP shall be given at least one full business day to provide the Justification.

A Provider shall be permitted to designate as "confidential" information previously provided to Recipient at which point such information shall become and be deemed to be Confidential Information under this Agreement, provided that such information is not specifically excluded under Section 3 (Exclusions from Confidential Information) below. Notwithstanding anything to the contrary stated herein, any "Confidential Information" previously provided by IPP under any previously executed nondisclosure and confidentiality agreement shall not require a Justification unless such is requested by the Companies in connection with a required or anticipated disclosure described herein.

3. Exclusions from Confidential Information

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

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

(b) at the time of disclosure is, or thereafter becomes, available to the Recipient on a non-confidential basis from a third-party source, provided that such third party is not and was not

prohibited from disclosing such Confidential Information to the Recipient by a contractual or other obligation to the Provider;

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

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

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

PROVIDED, however, that under no circumstance shall Critical Infrastructure Confidential Information ever be deemed to be excluded from being considered or deemed 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 or advising on the evaluation, consummation, approval, development, investment, financing, construction or operation of the Project, and where the Companies are the Recipient, Companies' operation as an electric utility (the "Acceptable Purposes"), or those Representatives who otherwise need to know the Confidential Information for such Acceptable Purposes.

(b) not to use Confidential Information for any purpose other than in connection with the Acceptable Purposes.

(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 Acceptable Purposes or those Representatives who otherwise need to know such Confidential Information for such Acceptable Purposes) 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 Critical Infrastructure Confidential Information has been made available to the Recipient or its Representatives.

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

(e) Any provision herein to the contrary notwithstanding, the Companies and IPP may disclose Confidential Information to (i) the Commission's independent observer, provided that such disclosure is made pursuant to a non-disclosure agreement with the independent observer; and (ii) the 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. If IPP is a party or participant in the docket or proceeding under which disclosure of IPP's Confidential Information is being sought, IPP shall be solely responsible for providing the Justification associated with such Confidential Information.

5. Required Disclosure and Notice

If the parties or any of their Representatives become legally compelled (by deposition, interrogatory, request for documents, information request, subpoena, civil investigative demand, court order, or similar process) to disclose any of the Confidential Information (other than a situation covered by Section 4(e) above), 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, such methods shall be consistent with HRS 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 Company

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.

(c) Recipient shall indemnify, defend and hold harmless Provider and Provider's officers, directors and employees (and each of their heirs, successors and assigns) (the "Indemnified Parties") from and against all losses, damages, claims and actions, including, without

limitation, reasonable attorneys' fees and costs, and all expenses incidental to such losses, damages, claims or actions ("Losses"), based upon or arising out of, or to the extent caused or contributed to by the breach of Recipient's confidentiality obligations with respect to Critical Infrastructure Confidential Information or Personally Identifiable Information; such rights to indemnification shall apply regardless of whether any act, omission, misconduct, negligence or default on the part of the Indemnified Parties contributed to the Losses, unless such act, omission, misconduct, negligence or default by an Indemnified Party was the sole or primary cause of the Losses.

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.
Ward Receiving
Mail Code AL12-IU
799 S. King Street
Honolulu, Hawaii 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, Hawai‘i 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 Hawai‘i. Any action brought with respect to the matters contained in this Agreement shall be brought in the federal or state courts located in the State of Hawai‘i. Each party agrees and irrevocably consents to the exercise of personal jurisdiction over each of the parties by such courts and waives any right to plead, claim or allege that the State of Hawai‘i is an inconvenient forum or improper venue.

17. Attorneys’ Fees and Costs

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

18. Assignment Prohibited

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

19. No Third Party Beneficiaries

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

20. Entire Agreement

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

21. Term and Survival

This Agreement shall remain in full force and effect for a period of five (5) years from the Effective Date. All confidentiality obligations of this Agreement with respect to Confidential Information provided to Recipient during the term of this Agreement shall survive following expiration or termination of this Agreement until such Confidential Information is returned to Provider or destroyed in accordance with Section 6 hereinabove.

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: _____

HAWAII ELECTRIC LIGHT COMPANY, INC,

By: _____
Print Name: _____
Its: _____

"Companies"

[Insert Name of IPP]
_____

By: _____
Print Name: _____
Its: _____

"IPP"

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix F – Description of the Site

Hawai‘i Electric Light

HAWAIIAN ELECTRIC COMPANIES
NORTH KOHALA ENERGY STORAGE
DESCRIPTION OF THE SITE

Akoni Pule Site

All proposals submitted in response to this RFP must be sited at the Akoni Pule Site. It is a Company Controlled Site consisting of 1.207 acres located along Akoni Pule Highway in Hawi Village, North Kohala (a portion of TMK (3)5-5-002: 023). See Exhibit A to this Appendix F. The site is zoned Agricultural.

The Company Controlled Site is currently vacant land that is privately owned. The Company has a perpetual Grant of Easement from the private landowner for the Akoni Pule Site. The Akoni Pule Site adjoins the existing Company-owned Hawi Substation (TMK (3)5-5-015: 033). The Akoni Pule Site, which is approximately 1.207 acres, has been allocated for this project, with the boundaries for the site being approximately 182.65 ft at its widest (on the front running parallel to Akoni Pule Highway), and approximately 274.84 feet deep (toward the interior of the property, away from Akoni Pule Highway). Proposer shall only be permitted to lease as much acreage as is necessary for its project. Additional acreage shall not be available and Proposers may only use the available land for its project and for no other uses. The current plan anticipates that the Akoni Pule Site will be purchased by the Company then will be consolidated with the adjoining Company-owned Hawi Substation. Any Proposer proposing to use the Akoni Pule Site shall be required to execute a ground lease for the site coterminous with the term of the ESSA. Proposer shall be responsible, at its sole cost and expense, for all other site improvements, utilities, permits and other required infrastructure and regulatory requirements necessary for use of the Akoni Pule Site for Proposer's Project.

Any drawings, reports or any other information or data relating to the Akoni Pule Site ("Site Information") are being furnished for the Proposer's convenience only and the Company assumes no responsibility whatsoever in respect to the sufficiency or accuracy of such Site Information or of the interpretation thereof, and there is no guaranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the Akoni Pule Site. In addition, no assurance is given that conditions found at the time of any surface or subsurface explorations will be the conditions that prevail at the time of construction at the Akoni Pule Site. The Proposer shall be solely responsible for all assumptions, deductions, or conclusions the Proposer may make or derive from the information furnished. Making such information available to the Proposer is not to be construed in any way as a waiver of the Proposer's responsibility to examine the Request for Proposals and the Akoni Pule Site. Proposer must satisfy itself through its own investigation as to conditions to be encountered at the Akoni Pule Site.

All underground water, gas, oil, telephone, electric, storm drain, sewer, and other pipes or conduits that may be shown on the Site Information are only approximate in their locations. The Proposer shall make a personal investigation and inspection of the records and drawings possessed by owners of the utilities. The Proposer shall make satisfactory arrangements with the owners of the utilities for the relocation, maintenance and protection of existing utilities, if any.

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.

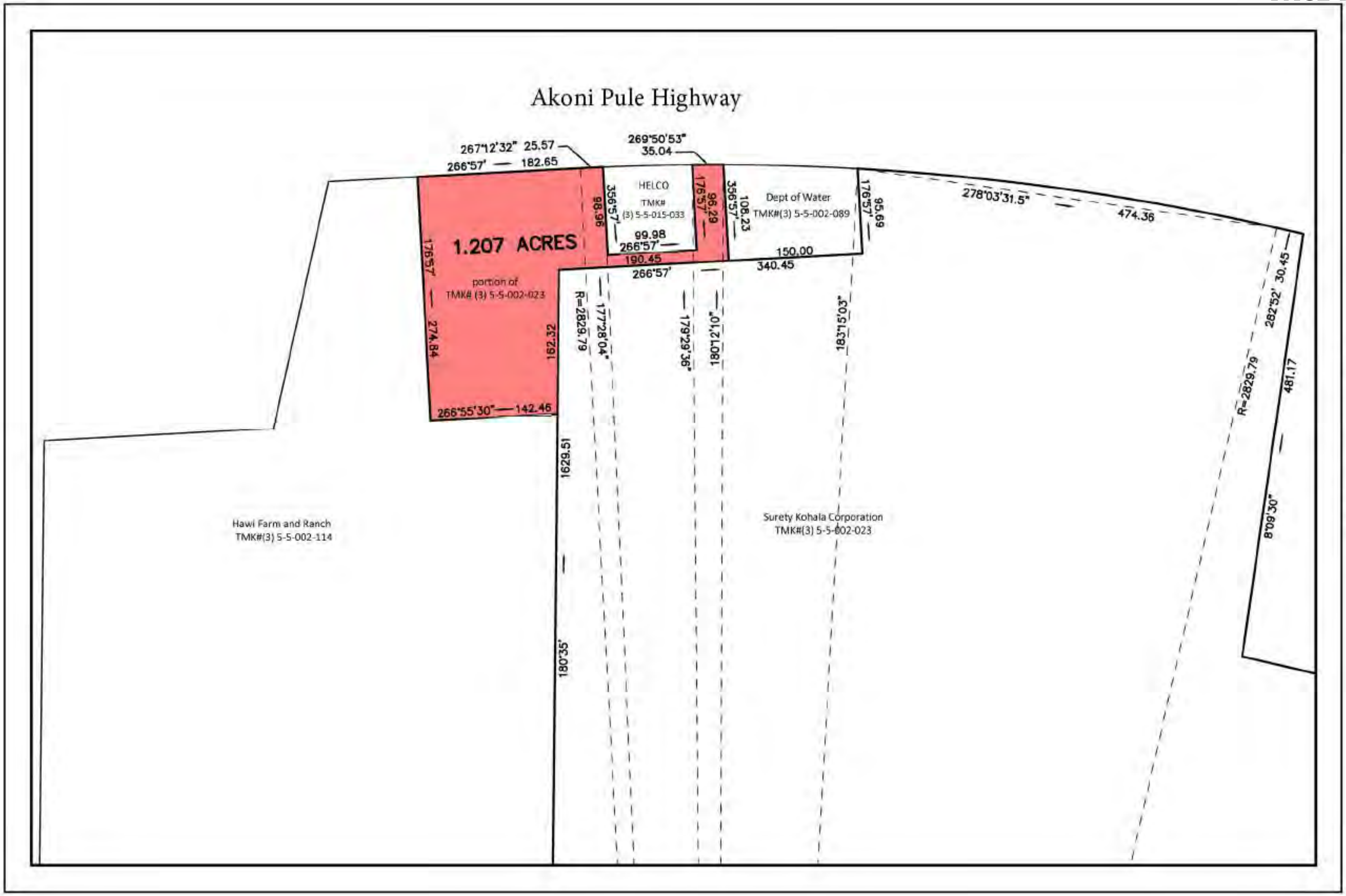
Akoni Pule Highway
267°12'32" 25.57
266°57' 182.65
269°50'53"
35.04
1.207 ACRES
portion of
TMK# (3) 5-5-002-023
HELCO
TMK#
(3) 5-5-015-033
99.98
266°57'
190.45
Dept of Water
TMK#(3) 5-5-002-089
150.00
340.45
266°57'
278°03'31.5"
474.36
176°57'
274.84
162.32
266°55'30" 142.46
98.96
356°57'
96.29
176°57'
356°57'
108.23
176°57'
95.69
R=2829.79
177°28'04"
179°29'36"
180°12'10"
183°15'03"
1629.51
180°35'
Hawi Farm and Ranch
TMK#(3) 5-5-002-114
Surety Kohala Corporation
TMK#(3) 5-5-002-023
282°52' 30.45
481.17
R=2829.79
8°09'30"

EXHIBIT A

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI'I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix G – Hawaiian Electric Development Team Certification Form

Hawai'i Electric Light

Overview

To the extent that there are Hawaiian Electric Proposals to the RFP, the Company will endeavor to evaluate these Hawaiian Electric Proposals on a fair basis compared to third party Proposals. As described in Section 1.9.1 of the RFP, "[t]he Competitive Bidding Framework allows the Company the option to offer a Self-Build Proposal in response to this RFP ("Hawaiian Electric Proposal"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the Hawaiian Electric Proposal or members, agents or consultants of the Company formulating the Hawaiian Electric Development Team; and (2) preferential access to proprietary information to the Hawaiian Electric Development Team." A Hawaiian Electric Proposal will be required to comply with the provisions in the Framework for Competitive Bidding ("Framework") as well as this RFP.

In addition to its Proposal, the Hawaiian Electric Development Team will be required to submit Attachment 1 to this Appendix G, Hawaiian Electric Development Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Hawaiian Electric Development Team over other proposers responding to this RFP, as well as adherence to ESSA terms and milestones required of all proposers and the Hawaiian Electric Proposal's proposed cost protection measures.

Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Hawaiian Electric Proposal be submitted electronically through the Electronic Procurement Platform a minimum of one (1) Day before other Proposals are due.

Except where specifically noted, a Hawaiian Electric Proposal must adhere to the same price and non-price Proposal requirements as required of all Proposers.

As described in Section 3.8.4 of the RFP, if selected, a Hawaiian Electric Proposer will not be required to enter into an ESSA with the Company. However, the Hawaiian Electric Proposer will be held to the proposed modifications to the ESSA, if any, it submits as part of the Hawaiian Electric Proposal in accordance with Section 3.8.7 of the RFP. Moreover, the Hawaiian Electric Proposal will be held to the same performance metrics and milestones set forth in the ESSA to the same extent as all Proposers, as attested to in the Hawaiian Electric Development Team Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause , or other appropriate rate adjustment mechanisms.

In lieu of price components, the Hawaiian Electric Proposal will need to provide its total project capital costs, any associated annual O&M costs, as well as annual revenue requirements by year (see Appendix B Section 2.0). The Hawaiian Electric Proposal shall submit revenue requirement

worksheets with their Proposal that support their annual revenue requirements estimates (see Appendix B, Section 2.1.) . A starter revenue requirements template example can be requested by the Hawaiian Electric Development Team via email to the RFP Email Address or through the PowerAdvocate Messaging function once the RFP event opens. The revenue requirements worksheets submitted will be customized by the Hawaiian Electric Development Team to reflect the details of the Project's Proposal. All assumptions used will be reflected in an assumptions input tab.

Hawaiian Electric Proposal Total Project Capital Cost

The following is a high-level breakdown followed by a narrative explanation of the total capital cost estimate for a potential Hawaiian Electric Proposal. The total project capital cost (and annual O&M costs) will be used to calculate the Revenue Requirement, which will then be used to calculate a LB for Proposal comparison purposes. The categories of costs include:

- Facility
  - EPC Contract
  - Allowance for Change Orders
  - Equipment
  - Owner's Cost
- Outside Services
- Interconnection
- Overheads
- AFUDC

These costs will be identified in Section 2.3.2.2 of the Hawaiian Electric Proposal (see Appendix B Section 2.3.2.2).

- Facility (including any generation and storage components) - This line item, to the extent applicable, should include costs such as:

  Engineering, Procurement, and Construction ("EPC") Contract
  The total cost estimate of the facility is the projected EPC contract cost including the design of the facility up to the high-voltage terminals of the step-up transformers, procurement of all the equipment, and services necessary to build the facility and construction and commissioning of the facility.

  Allowance for Change Orders
  This allocation accounts for items such as additional requirements resulting from unforeseen conditions, unexpected permitting requirements, force majeure events, unanticipated interferences, different interpretations of design requirements, material unavailability, and longer than normal delivery times.

  Equipment
  This cost includes the generator and the facility equipment that support the operation of the generator and the distribution of electrical power around the station, as applicable. Engineering and testing services required to ensure that the equipment is properly functioning at the site, training and documentation necessary

to operate and maintain the equipment, and performance guarantees may also be included here.

Owner's Cost
Owner's costs for the facility are all the costs necessary for the design, permitting, procurement, construction, and commissioning of the facility and for the preparation of the Proposal that are not included in the major contracts (i.e. EPC). The Companies' Labor includes Project Management, Station Operator training and commissioning, Environmental, Safety, Legal, Corporate Communications, Community and Government Relations, Engineering, and Regulatory Affairs. Company Labor for the preparation of the Proposal is also included here. For purposes of recovery, only the incremental costs of Labor will be subject to separate recovery.

- Outside Services - This line item, to the extent applicable, should include costs such as:
    - Construction Management to oversee the EPC contractor
    - Legal for the preparation of the Environmental Impact Statement and PUC process
    - Engineering for development and evaluation of the project technical specifications, Interconnection Requirements Study (IRS), and emissions testing
    - Environmental to conduct the Environmental Impact Statement (EIS) and Air Permit consulting
    - General Services such as surveys, land appraisals, Environmental Condition Reports, public relations, office trailer rental, archeological services, landscaping, miscellaneous permits, builder's risk insurance, switchgear testing, hazard analysis, painting, monitoring services, and moving costs.
    - Material costs including spare parts, furnishings, IT equipment, appliances, generator system initial fills (fuels, oils, water), and telecommunications equipment for the station.
    - Travel costs required to inspect other similar facilities, observe final acceptance testing of critical equipment, and station operators' factory training

- Interconnection – This line item covers all interconnection costs that a similarly situated IPP would be responsible for as described in RFP Section 2.3.5, and to the extent applicable, should include costs such as:

    Distribution Line
    The cost estimate includes the design, procurement, and construction of any new distribution infrastructure needed to interconnect with the designated substation.

Switchyard
Work at the switchyard will include design, procurement, and construction of the switchyard and the interfaces between the high voltage terminals of the generator step-up transformers and the circuit to which it will be connected. Site preparation of the switchyard and the design, procurement, and installation of the step-up transformers located in the switchyard, are typically included in the EPC contract.

Substation
Work at the designated substation that will include the design, procurement, and construction of the interfaces between the new distribution line and the substation buswork to which it will be connected.

Telecom
Accounts for direct labor, materials, and outside services to install telecommunication requirements for the project.

Project Management
Cost estimate of the project management design, procurement, contracting, and scheduling efforts for the interconnection only. Project management costs for the facility are included in the Owner's Cost estimate above.

- Overhead Costs

Overhead costs for the proposed facility will be estimated by the Company's budgeting software (UI Planner) and represent an allocation for those Company costs that are not attributable to any particular project or operation, but are essential nonetheless. Overheads are comprised of non-productive wages (such as holiday, sick, and vacation pay), employee benefits, payroll taxes, corporate administrative costs, and clearing costs.

- Allowance for Funds Used During Construction ("AFUDC")

The AFUDC will be calculated using the Company's budgeting software (UI Planner) and represents the cost of capital funding for the Project. The Company strives to minimize the cost of the AFUDC by ensuring that Project elements that are used or useful are placed in service as soon as possible, as well as minimizing the amount of time that AFUDC can accumulate, by minimizing the amount of time between expenditures on Project elements and their placement in service.

The Hawaiian Electric Proposal will include a Revenue Requirement for each year, which is calculated from the total project capital cost to determine the revenues needed to recover the cost of the project. The value of the Revenue Requirement Calculation for the Total Hawaiian Electric Proposal Project Capital Cost will be included in the Levelized Benefit calculation described below.

Annual O&M

The cost for ongoing O&M (fixed and variable) will be a component of the Revenue Requirement. All O&M should be included in this category, unless captured elsewhere in the Revenue Requirement Calculation, including but not limited to annual O&M expense to maintain facility; property taxes (if applicable), and insurance. As described in RFP Appendix G, a Hawaiian Electric Proposal will be required to cap its O&M costs at the amount included in the Proposal. Only actual costs will be recovered if such actual costs are lower than the maximum amounts in the Proposal.

Annual Revenue Requirement

The Hawaiian Electric Proposal will include a Revenue Requirement for each year, which is calculated from the total project capital cost to determine the revenues needed to recover the cost of the project. The value of the Revenue Requirement Calculation for the Total Hawaiian Electric Project Capital Cost will be included in the Levelized Benefit calculation.

The following is a narrative description of the proposed revenue requirement calculation and significant assumptions that the Hawaiian Electric Proposal should account for. The objective of a revenue requirement analysis is to illustrate the annual revenue requirements (ARR) for a Hawaiian Electric Proposal.

Revenue Requirement is defined as a calculated value which represents the estimated revenues needed from ratepayers which would allow the Company to recover its capital investment and expenses, honor its debt obligations, pay its revenue and income tax liabilities, and pay its preferred shareholders while providing a fair return to its common shareholders for their investment. Specific factors or assumptions related to that particular project will be included in the analysis.

The purpose of a revenue requirement calculation is to determine the annual and total revenue requirements of a capital investment and annual O&M expense needed from customers. The ratemaking formula for revenue requirements is shown below.

$$RR = O + T + D + r(RB)$$

Where:
RR = Revenue Requirements
O = Operating and Maintenance Expense
T = Tax Expense (Income and Revenue)
D = Depreciation Expense
r = Rate of Return on Rate Base
RB = Rate Base

The Company, in conjunction with the Independent Observer, may also conduct a risk assessment of the Hawaiian Electric Proposal to ensure an appropriate level of customer cost protection measures are included in such proposal.

APPENDIX G ATTACHMENT 1 - HAWAIIAN ELECTRIC PROPOSAL TEAM CERTIFICATION

Name of Hawaiian Electrc Proposal Team Contact: _____

Unique Name of Facility: _____

This Hawaiian Electric Development Team Cerfitication forHawai'i Electric Light Company, Inc.'s ("Company") Proposal in response to the Company's Request for Proposals for Energy Storage ("RFP") is made as of the date stated below.

A. COMPLIANCE WITH THE RFP AND CODE OF CONDUCT

The Hawaiian Electric Development Team certifies and acknowledges that it will/has:

1. Adhered to the terms of the RFP applicable to the Hawaiian Electric Development Team, including but not limited to: Section 1.7.1 (proposal submittal requirements), Section 1.7.4 (certification of non-collusion), Section 1.9 (Procedures for any Hawaiian Electric or Affiliate Proposals), and Section 3.4.4 (authorized signatory);

2. Adhered to the technical requirements of the RFP, excluding however those requirements inapplicable to the Hawaiian Electric Development Team such as execution of the Model ESSA, pricing formula requirements for independent power producer proposals, submission of a Proposal Fee, dispute resolution, credit requirements, selection of a priority list, and submission of a best and final offer;

3. Complied with the Company's Code of Conduct Procedures Manual, attached as Appendix C to this RFP, with particular attention to the Communications Protocols described in Section C therein with respect to communication with the Company RFP Team.

B. INDEPENDENT INVESTIGATION

The Hawaiian Electric Development Team further certifies and acknowledges that it will/has:

1. Submitted the Hawaiian Electric Proposal based on its own investigations, examinations, and determinations, including assessments of any risks that could have an effect on its obligations under the Hawaiian Electric Proposal.

2. Carefully examined the RFP documents and its appendices and has a clear and comprehensive knowledge of what is required of a Proposer under the RFP, and correspondingly, what is required of the Hawaiian Electric Development Team.

3. Examined and understands the technical requirements, schedule, and evaluation process as it is laid out in the RFP.

C. COST PROPOSAL ACKNOWLEDGEMENTS

The Hawaiian Electric Development Team acknowledges and agrees that:

1. Recovery for Project capital costs and O&M costs will be capped at the amount included in the Hawaiian Electric Development Team's Proposal.

2. Only actual capital costs and O&M costs will be recovered even if such actual costs are lower than the Hawaiian Electric Development Team's proposed maximum amounts.

3. Costs of developing the proposal must be included in the Hawaiian Electric Proposal for evaluation purposes only. Only the incremental costs of developing the Hawaiian Electric Development Team's proposal will be charged to the project and passed through to customers. Incremental costs for the Hawaiian Electric Proposal not serving as the Parallel Plan and which are not selected to the Final Award Group will not be recoverable from the Companies' customers.

D. ADHERENCE TO ESSA REQUIREMENTS AND MILESTONES

The Hawaiian Electric Development Team acknowledges and agrees that:

1. The Hawaiian Electric Proposal will be consistent with the scope of work and responsibilities of the "Seller" under the terms of the Model ESSA excluding inapplicable terms related to commercial and legal interactions between the Seller and the Company.

2. The Hawaiian Electric Proposal Facility will be designed and constructed to:

   a. Achieve the Performance Standards identified in Section 3 - Performance Standards, in Attachment B of the Model ESSA as modified by the IRS (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such performance standards that would be completed with an independent power producer under similar circumstances);

   b. Meet the following performance metrics as specified in Article 4 of the Model ESSA: (i) Performance Level Rated Energy Capacity, (ii) Performance Level Availability, and (iii) Performance Level Round Trip Efficiency;

   c. Pass the Acceptance Test specified in Attachment N – Acceptance Test General Criteria of the Model ESSA.

   d. Pass the Control System Performance Test specified in Attachment O – Control System Acceptance Test Criteria of the Model ESSA;

   e. Meet the project milestones identified in the Hawaiian Electric Proposal no later than the dates specified therein, which shall be consistent with the guaranteed project

milestones required in Attachment K – Guaranteed Project Milestones of the Model ESSA (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such milestones that would be completed with an independent power producer under similar circumstances). Notice of completion of milestones and any delay will be provided to PUC and Consumer Advocate.

f. Achieve the reporting milestones identified in the Hawaiian Electric Proposal no later than the dates specified therein, which shall be consistent with the reporting milestones required in Attachment L – Reporting Milestones of the Model ESSA (subject to reasonable adjustment agreeable to the Company consistent with the Company's negotiation of such milestones that would be completed with an independent power producer under similar circumstances). Notice of completion of milestones and any delay will be provided to PUC and Consumer Advocate.

g. Will be subject to the applicable liquidated damages for the Model ESSA provisions above. These liquidated damages would be paid from shareholder funds and would be passed through to customers through the Companies' Power Purchase Adjustment Clause. Notice of any liquidated damages assessed and amounts of such liquidated damages will be provided to PUC and Consumer Advocate.

h. Will reconfirm requirements in GO7 application and any resulting approval order for such application.

i. Will provide annual report to PUC and Consumer Advocate on performance metrics.

E. DECLARATION AND SIGNATURE

1. The individual(s) that has (have) signed this Hawaiian Electric Development Team Certification is (are) duly authorized by the Hawaiian Electric Development Team to execute such on behalf of the Hawaiian Electric Development Team; and

2. All statements, specifications, data, confirmations, and other information set out in this Hawaiian Electric Development Team Certification are complete and accurate in all material respects.

IN WITNESS WHEREOF, the HAWAIIAN ELECTRIC DEVELOPMENT TEAM hereby makes the certifications, acknowledgements, and agreements stated herein as of the date stated under the signature of its authorized representative:

Dated at _____, _____ this _____ day of _____ 20_____.

_____
Signature of Hawaiian Electric Development Team Representative

_____
Name of Hawaiian Electric Development Team Representative (please print)

_____
Title of Hawaiian Electric Development Team

Representative (please print)

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix H – Interconnection Facilities Cost and Schedule Information

Hawai‘i Electric Light

TABLE OF CONTENTS

Hawaiian Electric Company
Company-Owned Interconnection Facilities Cost and Schedule Information

The information provided in this document can be used to assist Proposers in estimating costs and schedule of potential projects.

SECTION 1 – COST RESPONSIBILITIES

For the purposes of this RFP, the Company will be responsible for the costs of Company-Owned Interconnection Facilities (COIF), subject to any limitations, as described in Section 1. The Company will not be responsible for 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 –Hawai‘i Electric Light.
3. Company-Owned Interconnection Facilities – The equipment and devices owned by Company that are required to permit an energy storage 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~~Energy Storage Services 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 an energy storage project in response to a Company RFP.

1.2 – ABBREVIATIONS

1. ADSS – All Dielectric Self-Supporting
2. BESS – Battery Energy Storage System
3. COIF – Company-Owned Interconnection Facilities
4. CSAT – Control System Acceptance Test
5. CT – Current Transformer
6. DFR – Digital Fault Recorder
7. DTT – Direct Transfer Trip
8. FS – Facility Study
9. GCP – Grid Connection Point
10. HVAC – Heating, Ventilation, and Air Conditioning
11. IRS – Interconnection Requirements Study (includes both SIS and FS)

12. NDA – Non-Disclosure Agreement
13. OPGW- Optical Ground Wire
14. POI – Point of Interconnection
15. PT – Potential Transformer
16. RTU – Remote Terminal Unit
17. SCADA – Supervisory Control and Data Acquisition
18. SIS – System Impact Study
19. UFLS – Under-Frequency Load Shed

1.3 – FACILITIES AT PROPOSER SITE

1. Proposer shall be responsible for obtaining all permitting and any land rights required that are not provided by Company.
2. Except for costs agreed to be paid by Company under Item 3 below, Proposer shall be responsible for the design, procurement, and construction of all facilities at the BESS 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 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.)

1.4 – [NOT USED]

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. 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.

SECTION 2 – INTERCONNECTION REQUIREMENTS

Section 2 will provide information on the interconnection requirements and responsibilities.

2.1 – COIF REQUIREMENTS

Please see Attachment 1 for single-line diagram showing the interconnection requirements. Proposers should do their own due diligence for costs to meet the technical requirements and bring the project to commercial operations. Company costs will be the same for all proposed projects.

Company will build COIF up to the switch on the Seller side of the demarcation shown on Attachment 1. Proposer to build facilities to meet at that point.

2.2 – TELECOMMUNICATIONS REQUIREMENTS

Please refer to the RFP for functional requirements for the project. Company will install a fiber-optic cable between Hawi Substation and the project site. Proposer will need to provide/install a patch panel in a communications cabinet at the project site for Company to terminate the fiber cables.

2.3 – TYPICAL SECURITY REQUIREMENTS

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.

SECTION 3 – TYPICAL COMPANY DURATIONS FOR INTERCONNECTION PROJECTS

The tables below in Section 3 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 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.

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
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	12-18 months	Procurement of materials typically happens at 60% design completion
Construction Phase		
Construction	10-12 months	Based on scope/complexity of work
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.
Notes		
For Company-Build projects, the Engineering Phase includes Company design & review of Company-Owned Interconnection Facilities (COIF) & reviews of Proposer-Owned Interconnection Facilities (SOIF) supporting/impacting COIF.		

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Additional notes to be added to the North Kohala Microgrid BESS Project Single Line Diagram

PROPOSED PROJECT NAME:	North Kohala Microgrid BESS
PROPOSED PROJECT SIZE:	5 MW, 30 MWh BESS (Minimum)
CUSTOMER SLD REVISION NUMBER AND DATE:	
HELCO SLD REVISION NUMBER AND DATE:	Revision 0, 09-09-2021
HELCO SUBSTATION:	Hawi
HELCO 34KV CIRCUIT:	3300 Line
HELCO 34KV CIRCUIT BREAKER #:	TBD

Transmission Planning Notes

1. Customer to ensure manual closing of Project breaker XX-1[TBD] shall be allowed for the following conditions under coordination with the Company system operator:
    a. 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°
    b. Dead-line (company-side) and hot bus (project-side) for black start capabilities
    c. Hot line (company-side) and dead bus (project-side)
2. There shall be no auto-reclosing on Project breaker XX-1[TBD].

Protection Notes

3. The 34 kV bus at [Name TBD] shall have dual differential bus protection relays which will trip and block close HELCO breakers 52-1 and 52-2, and Project breaker XX-1 via manual lockout relays.
4. All 34 kV lines at [Name TBD] HELCO side shall have dual redundant, high-speed line protection relays with separate and diverse communication channels. The remote ends at the Maliu Ridge, Halaula, and Hawi substations shall have the same.
5. Breaker failure of HELCO 34 kV breaker 52-1 or 52-2 at [Name TBD] HELCO side shall trip and block close Project breaker XX-1[TBD] via separate dedicated lockout relay.
6. Breaker failure of HELCO 34 kV breaker 52-1 (or 52-2, whichever is connected to HRD and Waimea) at [TBD] HELCO side shall trip and block close the Waimea and HRD breakers via a separate dedicated lockout relay.
7. Breaker failure of Project breaker XX-1[TBD] shall trip developer-owned dedicated lockout relay which will trip dedicated lockout relay in HELCO side. Dedicated lockout relay in HELCO side will trip and block close HELCO 34 kV breakers 52-1 and 52-2.

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Design Notes

8. All 34 kV CT's are to be xxxx/5 MRCT's with relaying accuracy class C400 unless noted otherwise. MRCT's are to have full distributed windings on all taps and a minimum thermal rating factor of 2.0.
9. HELCO to provide two bi-directional A and B meters that records both import and export power and revenue metering CTs and PTs.
10. The Project will submit design drawings to HELCO for review and comment.
11. The communications for the primary and secondary pilot protection relays and breaker failure communication for the Developer tie line must be on diverse communication routes.
12. For Telecom requirements (such as communications, etc.), refer to the Telecom SLD.
13. For the microgrid control system design and operation philosophy, refer to the Appendix O of the RFP.

System Operations Notes

14. Upon simultaneous communication channels failure longer than 6 seconds for the following channels:
    a. (only applicable if HELCO applies Line Diff Protection) Protection Channels X & Y (as applicable) HELCO-owned protection relay to initiate a "loss of protection communication" alarm to HELCO dispatch.
        i. After 30 seconds of simultaneous failure the HELCO-owned relays are to provide signal to Project to initiate Project perform a controlled ramp of the plant output to 0 MW net. At zero (0) MW, Project to trip Project breaker XX-1[TBD]
    b. Telemetry and Control Channels A & B HELCO-owned RTU to initiate a "loss of communication" alarm to HELCO dispatch.
15. The following Developer's inputs shall be provided and direct hard wired to HELCO's recorder:
    a. Status of all Developer's 35kV breaker
    b. Status of all lockouts for Developer's breaker
    c. 34kV voltage (3-ph) at point of interconnection
    d. 34kV current (3-ph) at point of interconnection
16. HELCO load dispatcher shall be enabled to issue the following to the Facility via SCADA interface:
    a. Active power set point control signal (analog MW); and
    b. Voltage (analog kV) set point control signal.
    c. Frequency Response mode (droop, isochronous, disabled)
    d. Grid Forming Control (enable/disable)

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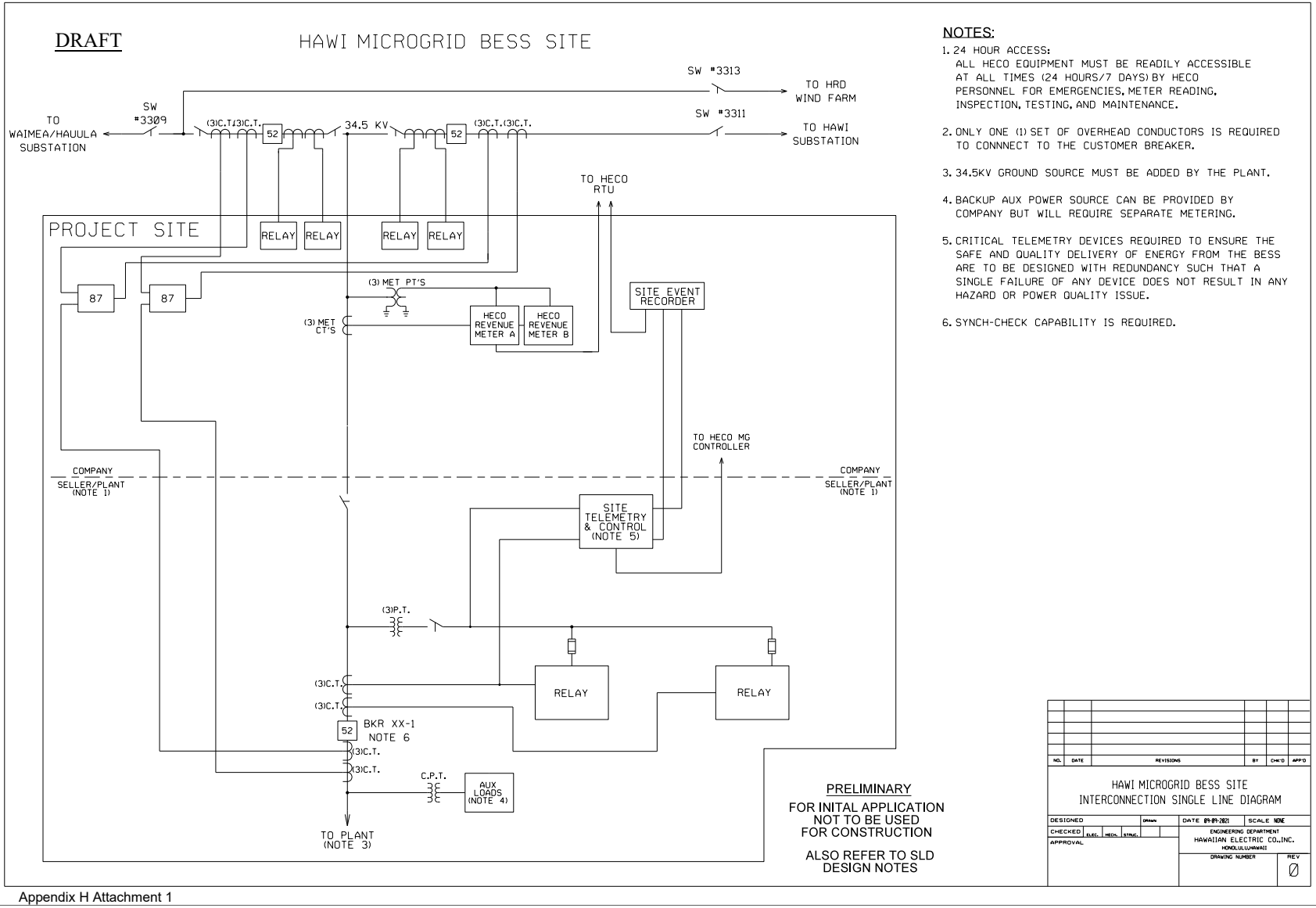
e. Transition to islanding Mode (enable/ disable)

f. 34kV Project breaker (trip/close)

17. 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.

18. The Project will provide the following signals for telemetering to the HELCO RTU:
    a. 34kV line amps (3 phase), watts, vars, and voltage (3 phase)
    b. Status of the Project breaker XX-1[TBD]]
    c. Status of all lockouts
    d. Active Power Control Interface Status indicating Local vs. HELCO
    e. Latest received active power set point
    f. Automatic Voltage Regulator Status – Normal or Alarm (regulator On or Off)
    g. Grid Forming Status (Enabled/Disabled)
    h. Frequency Response mode (droop, isochronous, disabled)
    i. Latest received voltage setpoint (kV)
    j. Status for each inverter
    k. MW output for each inverter
    l. MW set point for each inverter
    m. BESS State of Charge (%)
    n. Available Maximum Ramp Rate (MW/min)
    o. Power Production of Facility (MW)
    p. Number of Inverters Available
    q. Facility Inverter Availability (%)
    r. Frequency Droop percent and deadband settings (% & Hz)

19. Each of the following initiates a separate alarm to HELCO load dispatcher:
    a. Protection and RTU Loss of Communication



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. ONLY ONE (1) SET OF OVERHEAD CONDUCTORS IS REQUIRED TO CONNNECT TO THE CUSTOMER BREAKER.
3. 34.5KV GROUND SOURCE MUST BE ADDED BY THE PLANT.
4. BACKUP AUX POWER SOURCE CAN BE PROVIDED BY COMPANY BUT WILL REQUIRE SEPARATE METERING.
5. CRITICAL TELEMETRY DEVICES REQUIRED TO ENSURE THE SAFE AND QUALITY DELIVERY OF ENERGY FROM THE BESS ARE TO BE DESIGNED WITH REDUNDANCY SUCH THAT A SINGLE FAILURE OF ANY DEVICE DOES NOT RESULT IN ANY HAZARD OR POWER QUALITY ISSUE.
6. SYNCH-CHECK CAPABILITY IS REQUIRED.

PRELIMINARY

FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION

ALSO REFER TO SLD
DESIGN NOTES

NO.	DATE	REVISIONS	BY	CHK'D	APP'D

HAWI MICROGRID BESS SITE
INTERCONNECTION SINGLE LINE DIAGRAM

DESIGNED	DRAWN	DATE 09-09-2021	SCALE NONE
CHECKED ELEC. MECH. STRUC.		ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO.,INC. HONOLULU,HAWAII	
APPROVAL		DRAWING NUMBER	REV Ø

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix I – RESERVED

Hawai‘i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix J – RESERVED

Hawai‘i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix K – Community Comments

Hawai‘i Electric Light

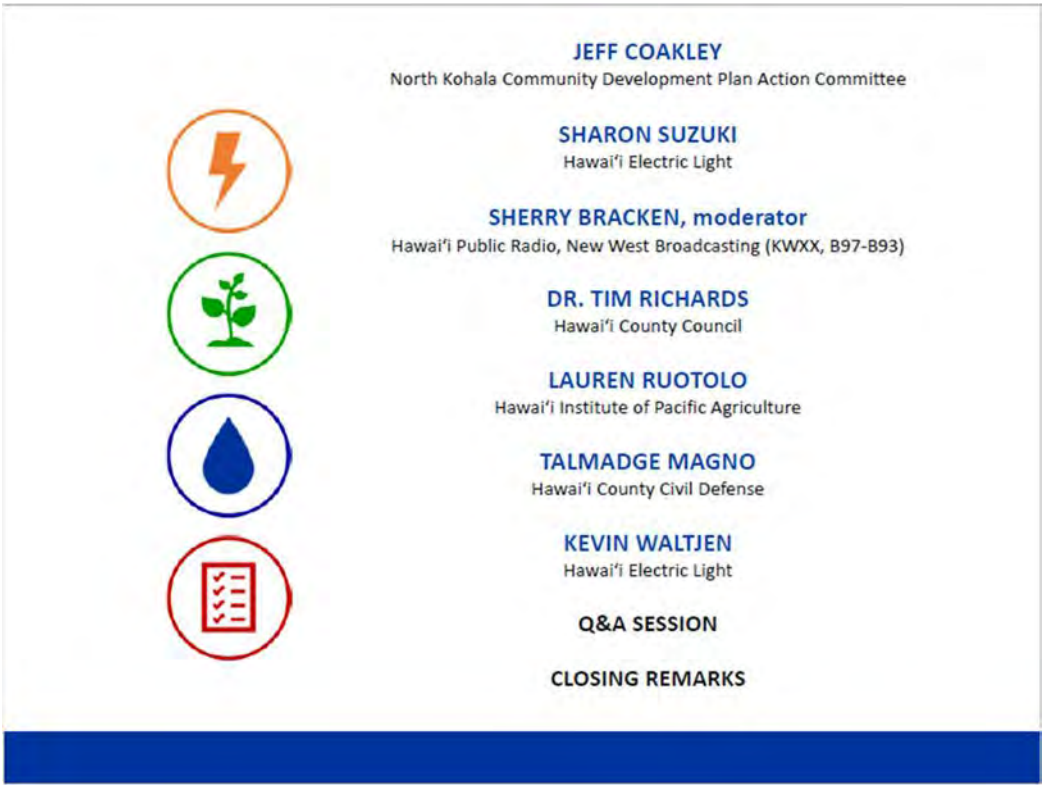
North Kohala Community Meeting Feedback

(written comments received by Hawai'i Electric Light Co., Ltd.)

The Company held two community meetings, a Resilience and Sustainability Forum on November 7, 2019 and Building Resilience in North Kohala meeting on August 6, 2019. Provided below are the presentations used by the Company at the meetings, as well as question cards received from the community from the November 7, 2019 meeting.

November 7, 2019 - Resilience and Sustainability Forum Presentation


RESILIENCE AND SUSTAINABILITY FORUM
A community discussion on energy, agriculture, water, and emergency preparedness
November 7, 2019
Kohala High School
Hawai'i Electric Light
North Kohala Community Development Plan Action Committee


JEFF COAKLEY
North Kohala Community Development Plan Action Committee
SHARON SUZUKI
Hawai'i Electric Light
SHERRY BRACKEN, moderator
Hawai'i Public Radio, New West Broadcasting (KWXX, B97-B93)
DR. TIM RICHARDS
Hawai'i County Council
LAUREN RUOTOLO
Hawai'i Institute of Pacific Agriculture
TALMADGE MAGNO
Hawai'i County Civil Defense
KEVIN WALTJEN
Hawai'i Electric Light
Q&A SESSION
CLOSING REMARKS

Welcome and Introductions

Moderator Sherry Bracken
Hawai'i Public Radio, New West Broadcasting (KWXX, B97-B93)

Dr. Tim Richards

Hawai'i County Council
Chair of the Committee on Agriculture, Water, Energy and Environmental Management
Vice Chair of the Committee on Finance

Hawai‘i Institute of Pacific Agriculture

Lauren Ruotolo
Director of Development

Hawaii Institute of Pacific Agriculture's role in the Food System

Farmers

Educators

HIP agriculture

Aggregators

FARM

YOUTH EDUCATION

- Farm Field Trips
- In-School Workshops

YOUTH EDUCATION

- Mahi'ai Mentorship & Internship Program

Garden to Cafeteria & Farm to School

Post-Secondary Education

- Farmer Apprenticeship

Food Aggregation

- The Kohala Food Hub

The Kohala Food Hub

Looking Ahead

More info:
www.hipagriculture.org
institute@hipagriculture.org

Hawai‘i County Civil Defense

Talmadge Magno
Administrator

Aloha!

- Mission
- All Hazards
- Coordination of Communications and Education
- Coordination of Government, Public and Private Partners

Mission:

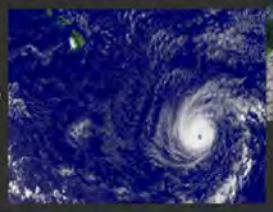
- Prepare for and Respond to Emergencies and Disasters
  - Establish Resilient Communities
- Provide Emergency Communications and Public Information
  - Establish Redundant Systems
- Direct and Coordinate Planning, Response and Recovery actions
  - Establish Comprehensive Plans

Export P

Responds to all hazards and associated risks...

- Earthquake
- Tsunami
- Tropical Cyclone
- Wild Fire
- Flash Flood
- Lava Flow
- Vector-borne Disease
- Dam Failure
- HAZMAT






Critical Functions of Civil Defense

- Mass Notification
  - IPAWS
  - EAS
  - Everbridge
  - FaceBook
  - Twitter
  - Na Leo TV and Online
  - Website
  - Outreach and Education

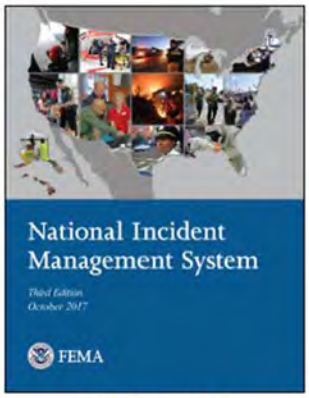



Hawai'i Electric Light

Kevin Waltjen
Director – Hawai'i Island

3 Pillars of Resilience

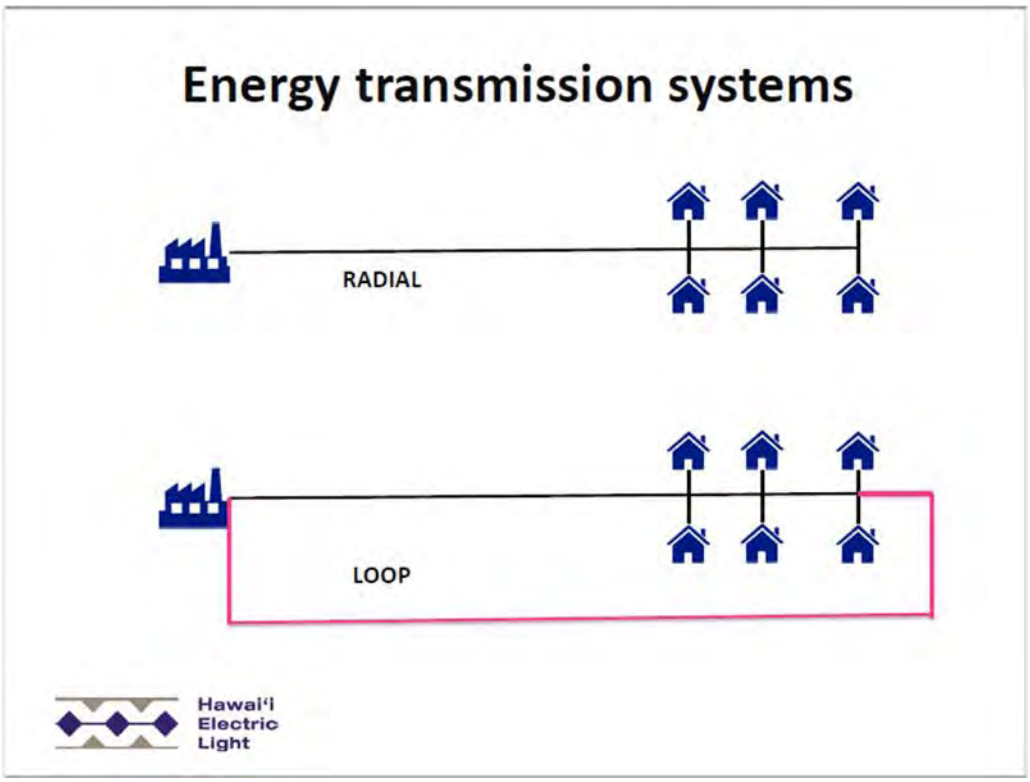
COMMUNITY PREPAREDNESS

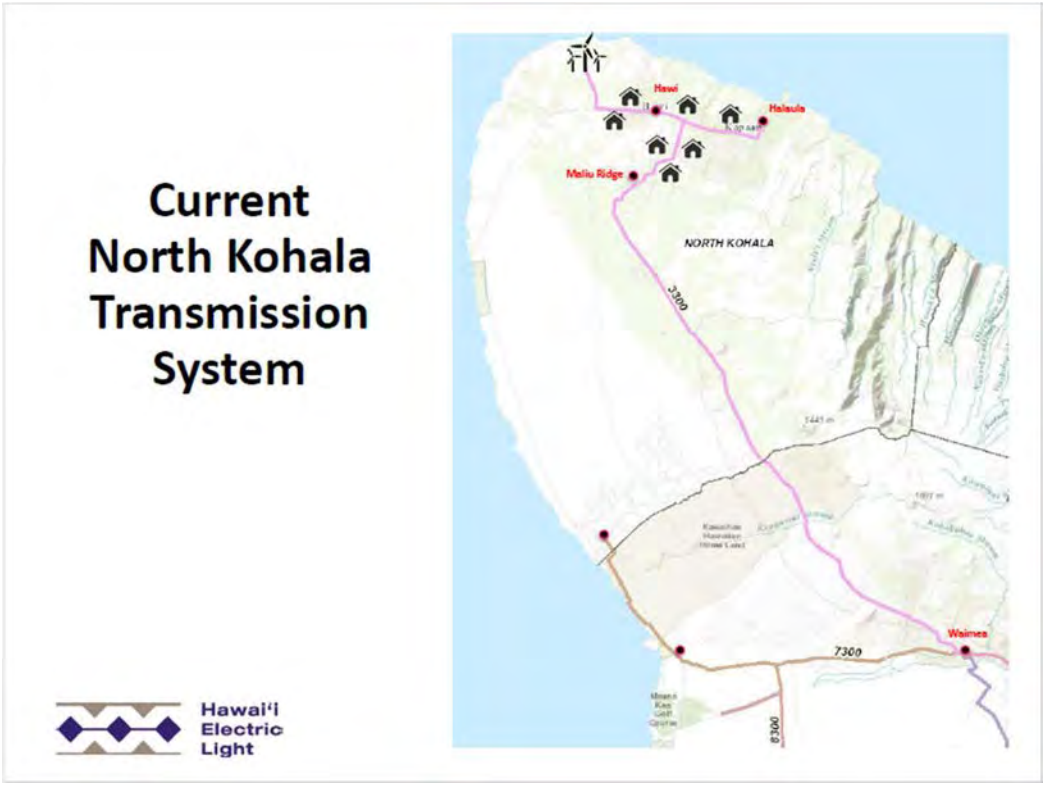


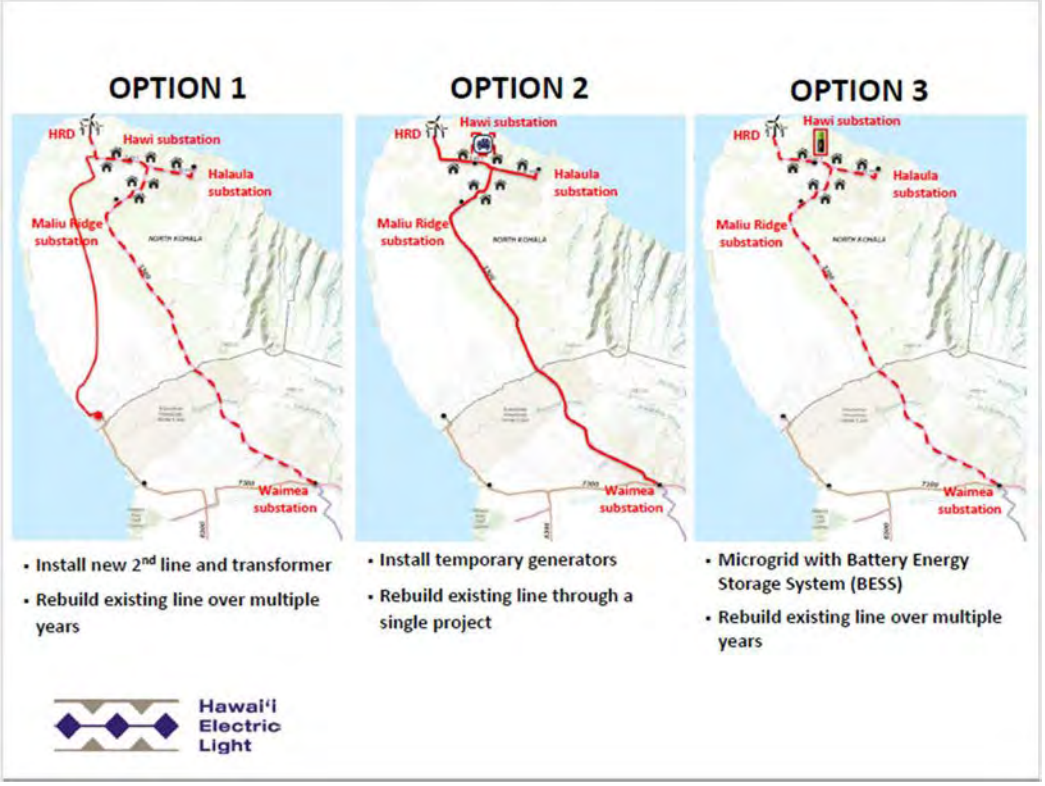
GOVERNMENT PREPAREDNESS

RISK REDUCTION

Hawai'i Electric Light


Energy transmission systems
RADIAL
LOOP
Hawai'i Electric Light


Current North Kohala Transmission System
Hawi
Halaula
Maliu Ridge
NORTH KOHALA
3300
7300
8300
Waimea
Hawai'i Electric Light


OPTION 1
HRD
Hawi substation
Halaula substation
Maliu Ridge substation
Waimea substation
• Install new 2nd line and transformer
• Rebuild existing line over multiple years
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• Microgrid with Battery Energy Storage System (BESS)
• Rebuild existing line over multiple years
Hawai'i Electric Light


Next Steps
2018
Refine
Options
2019 (late)
Select Option
PUC Application
2007
Planning
2019
Engage with
Community Partners
2020
Finalize
Design
Hawai'i Electric Light

Q&A Session

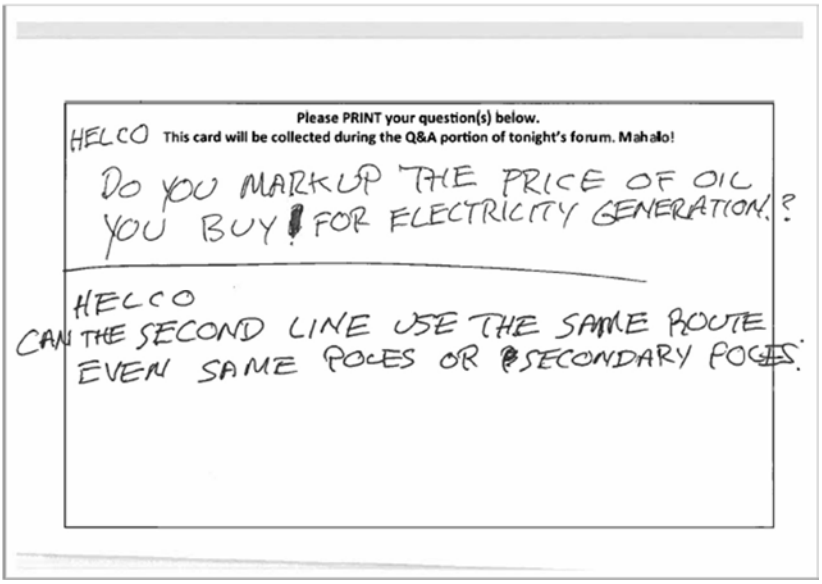
Please write your question on the card provided and hand it to one of the event staff. Questions will be read by our moderator.

Mahalo!

Hawai'i Electric Light

North Kohala Community
Development Plan Action Committee

November 7, 2019 - Resilience and Sustainability Forum Question Cards
*Names have been redacted.



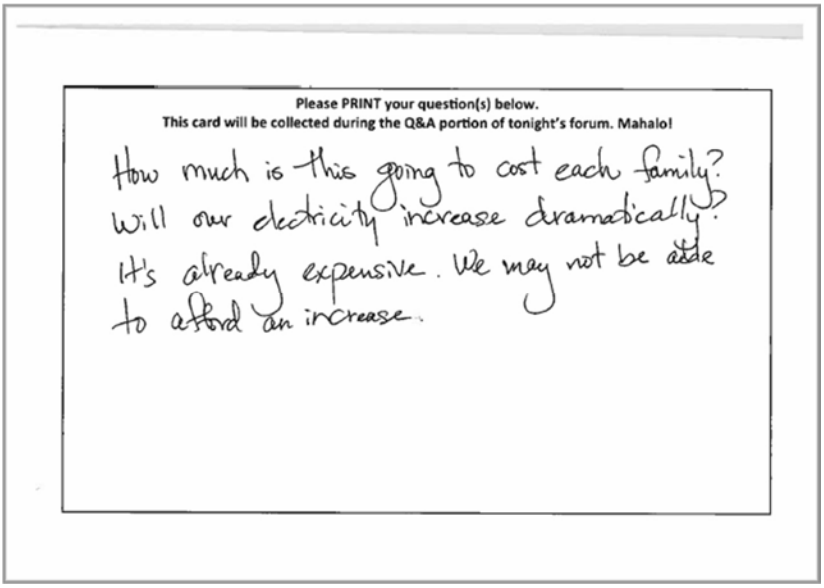
Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!

HELCO

DO YOU MARK UP THE PRICE OF OIL YOU BUY FOR ELECTRICITY GENERATION?

HELCO

CAN THE SECOND LINE USE THE SAME ROUTE EVEN SAME POLES OR SECONDARY POLES.



Please PRINT your question(s) below.
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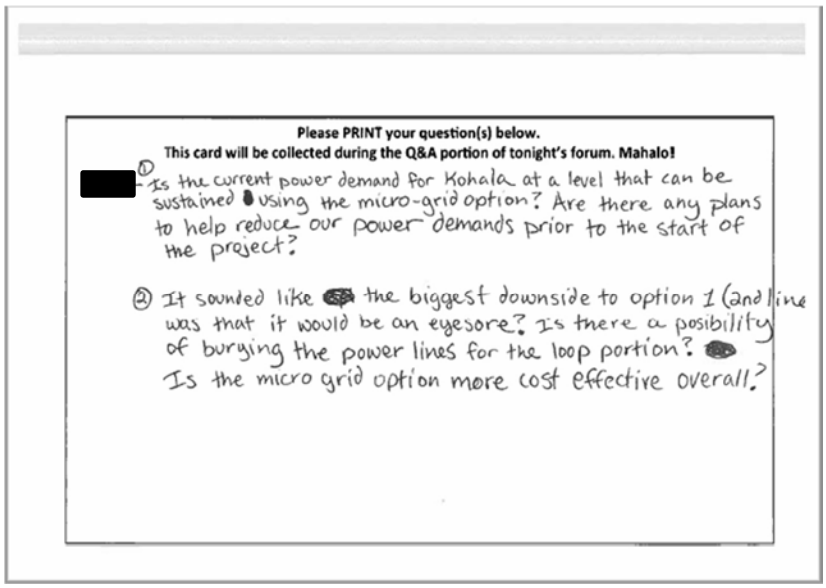
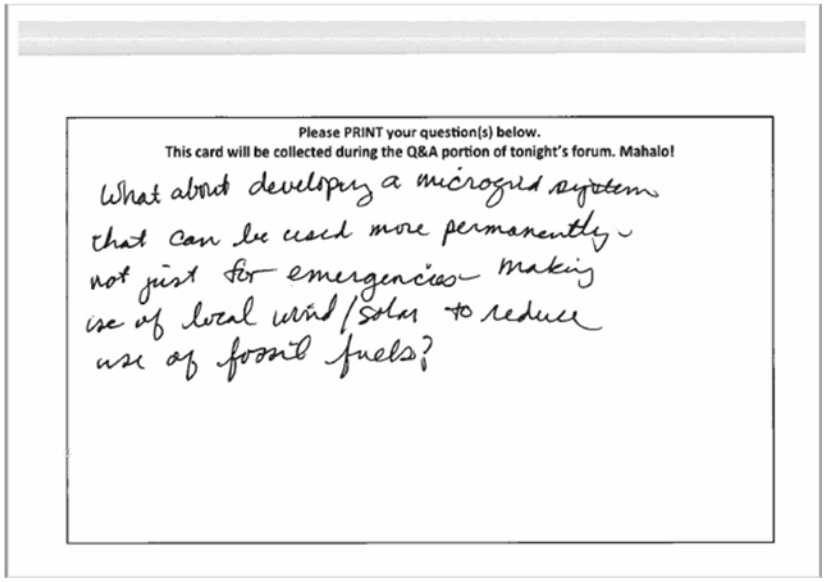
How much is this going to cost each family? Will our electricity increase dramatically? It's already expensive. We may not be able to afford an increase.



Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!

[redacted] ① Is the current power demand for Kohala at a level that can be sustained using the micro-grid option? Are there any plans to help reduce our power demands prior to the start of the project?

② It sounded like [redacted] the biggest downside to option 1 (and line was that it would be an eyesore? Is there a posibility of burying the power lines for the loop portion? [redacted] Is the micro grid option more cost effective overall?



Please PRINT your question(s) below.
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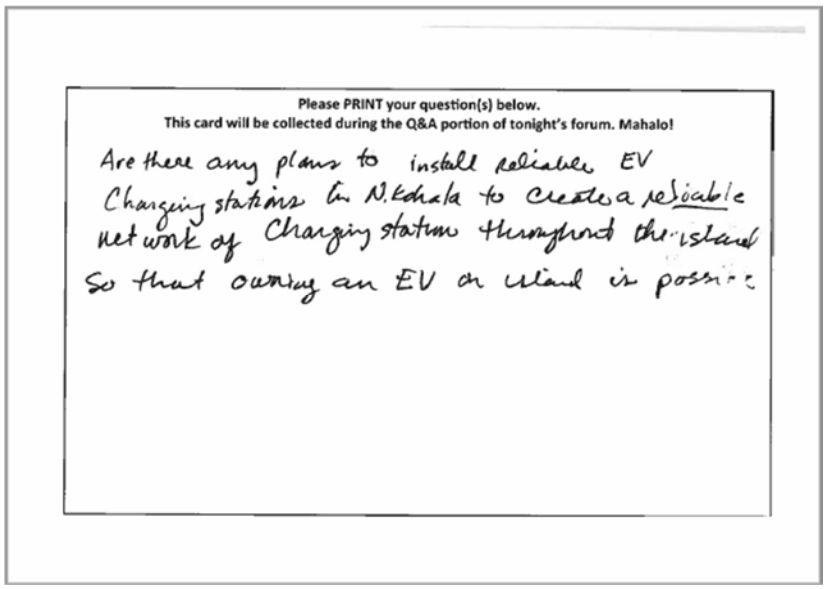
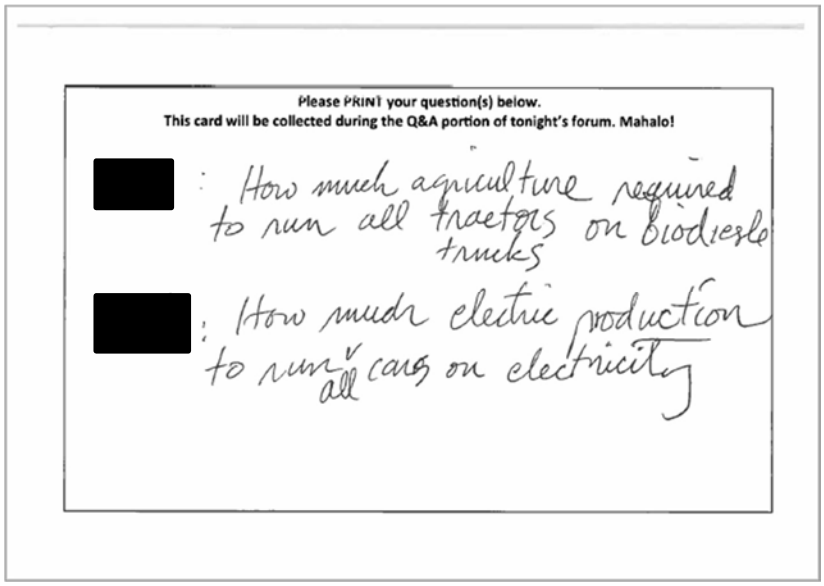
What about developing a microgrid system that can be used more permanently - not just for emergencies - making use of local wind/solar to reduce use of fossil fuels?



Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!

Are there any plans to install reliable EV Charging stations in N. Kohala to create a reliable network of Charging stations throughout the island so that owning an EV on island is possible



Please PRINT your question(s) below.
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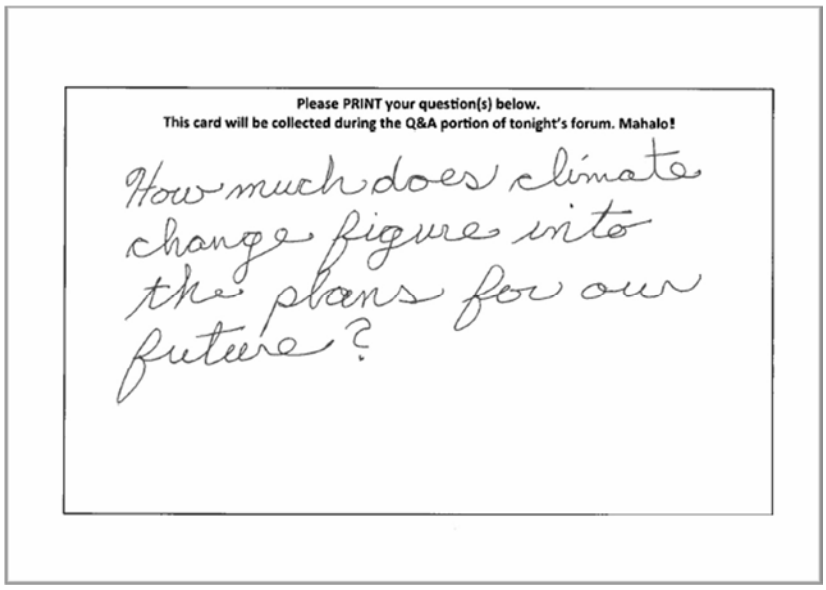
[redacted]: How much agriculture required to run all tractors on biodiesel trucks

[redacted]: How much electric production to run all cars on electricity



Please PRINT your question(s) below.
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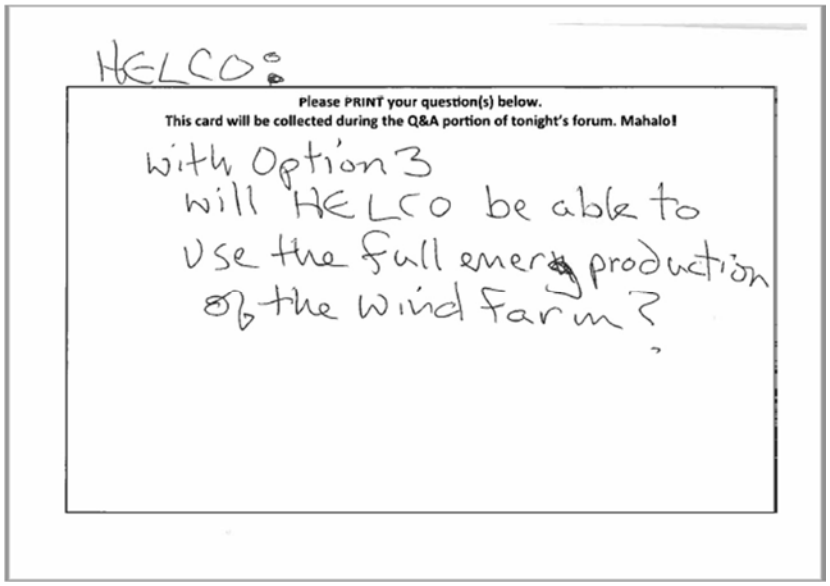
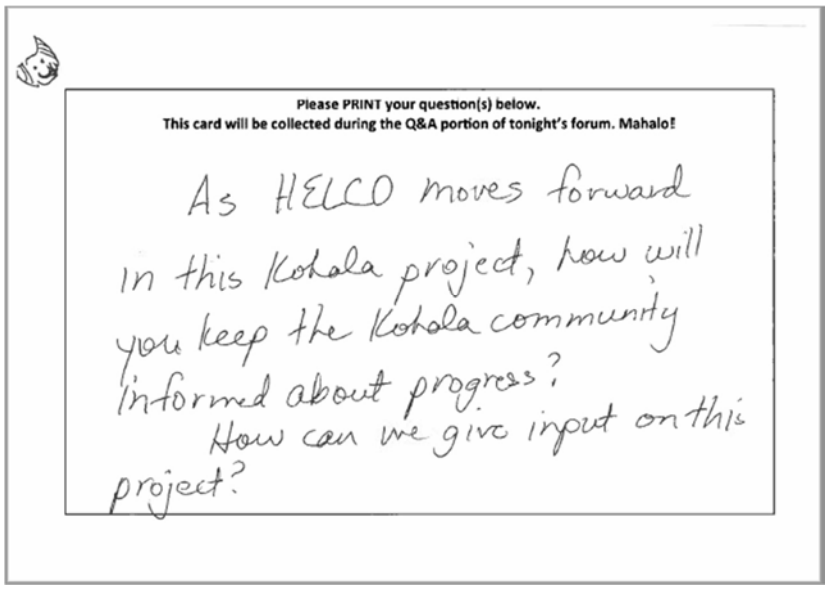
How much does climate change figures into the plans for our future?



HELCO:

Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!

With Option 3 will HELCO be able to use the full energy production of the wind farm?



Please PRINT your question(s) below.
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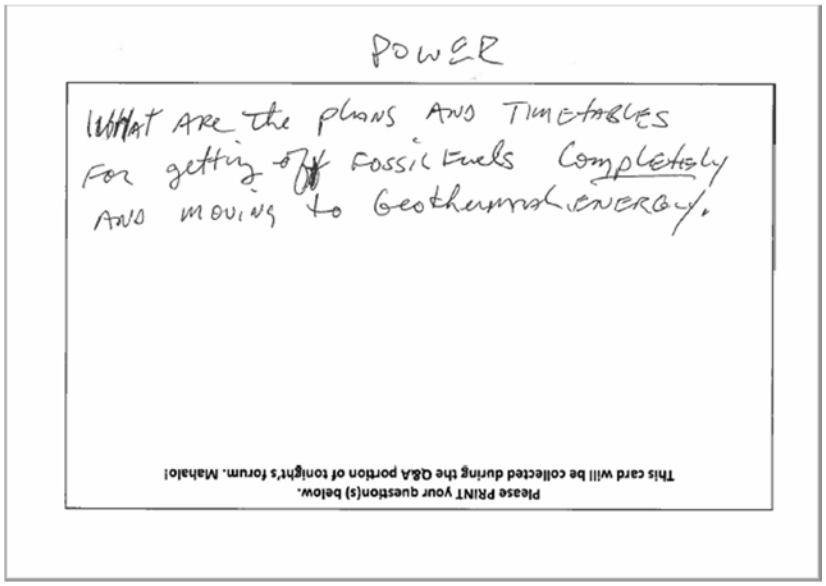
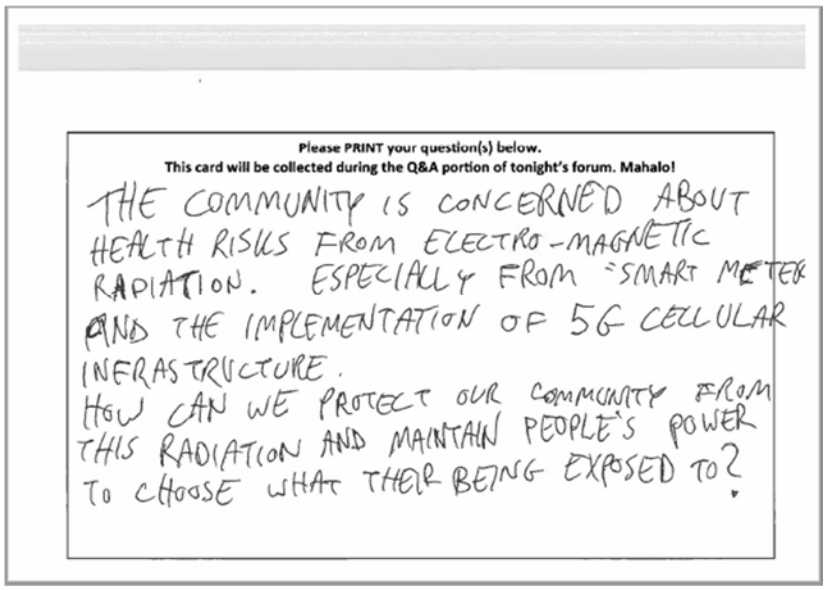
As HELCO moves forward in this Kohala project, how will you keep the Kohala community informed about progress?
How can we give input on this project?



POWER

What are the plans and timetables for getting off fossil fuels completely and moving to geothermal energy.

Please PRINT your question(s) below.
This card will be collected during the Q&A portion of tonight's forum. Mahalo!



Please PRINT your question(s) below.
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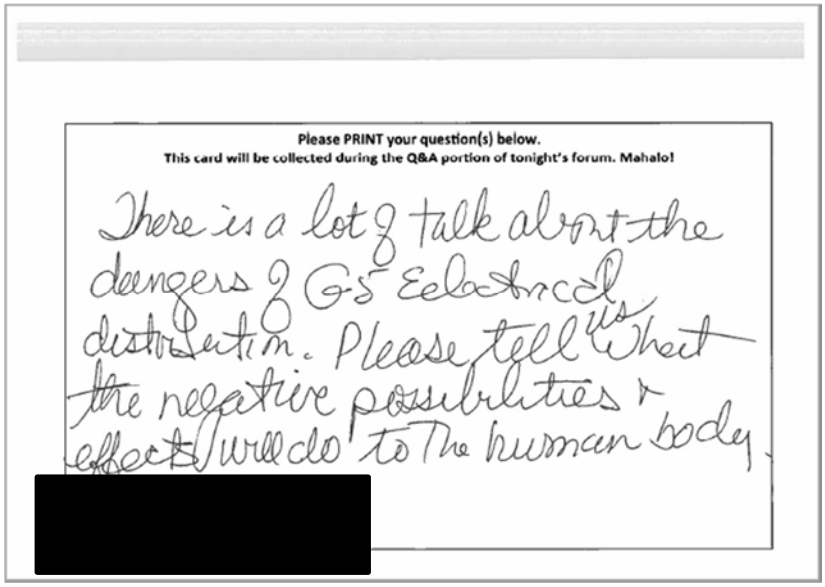
THE COMMUNITY IS CONCERNED ABOUT HEALTH RISKS FROM ELECTRO-MAGNETIC RADIATION. ESPECIALLY FROM "SMART METER" AND THE IMPLEMENTATION OF 5G CELLULAR INFRASTRUCTURE.
HOW CAN WE PROTECT OUR COMMUNITY FROM THIS RADIATION AND MAINTAIN PEOPLE'S POWER TO CHOOSE WHAT THEIR BEING EXPOSED TO?



Please PRINT your question(s) below.
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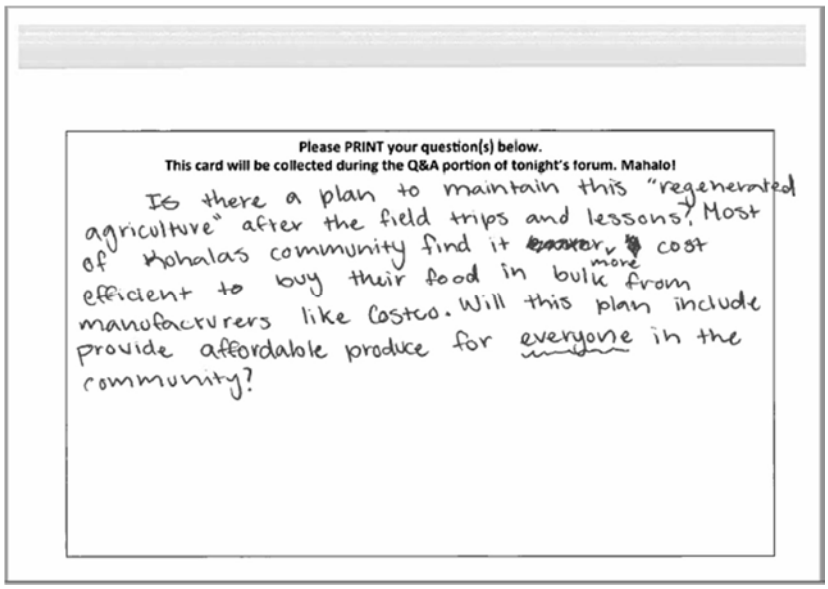
There is a lot of talk about the dangers of 5G Electrical distribution. Please tell us what the negative possibilities + effects will do to the human body.

[redacted]



Please PRINT your question(s) below.
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Is there a plan to maintain this "regenerated agriculture" after the field trips and lessons? Most of Kohalas community find it ~~[illegible]~~, more cost efficient to buy their food in bulk from manufacturers like Costco. Will this plan include provide affordable produce for everyone in the community?

August 6, 2019 - Building Resilience in North Kohala Presentation

Building Resilience in North Kohala

A collaborative approach to strengthening our communities

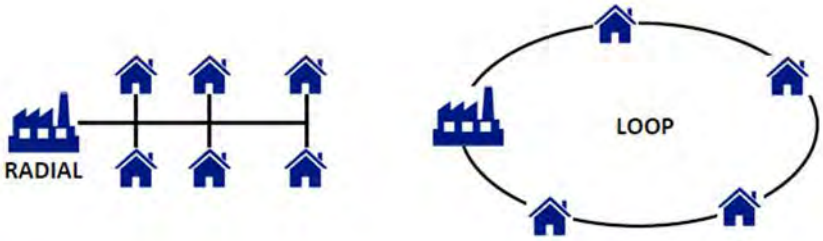
Hawaiian Electric
Maui Electric
Hawai'i Electric Light

3 Pillars of Resilience

Community Preparedness	Critical Infrastructure	
	Government Preparedness	Risk Reduction

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

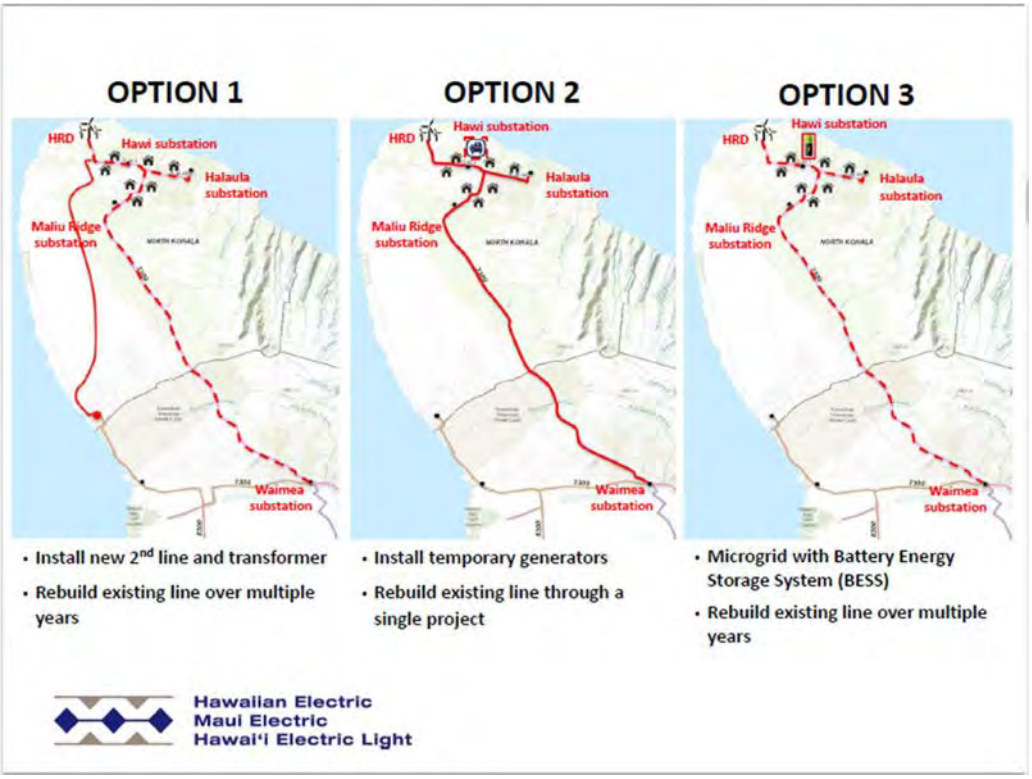
Energy transmission systems



Hawaiian Electric
Maui Electric
Hawai'i Electric Light

Current North Kohala Transmission System

Hawaiian Electric
Maui Electric
Hawai'i Electric Light


OPTION 1
HRD
Hawi substation
Halaula substation
Maliu Ridge substation
Waimea substation
• Install new 2nd line and transformer
• Rebuild existing line over multiple years
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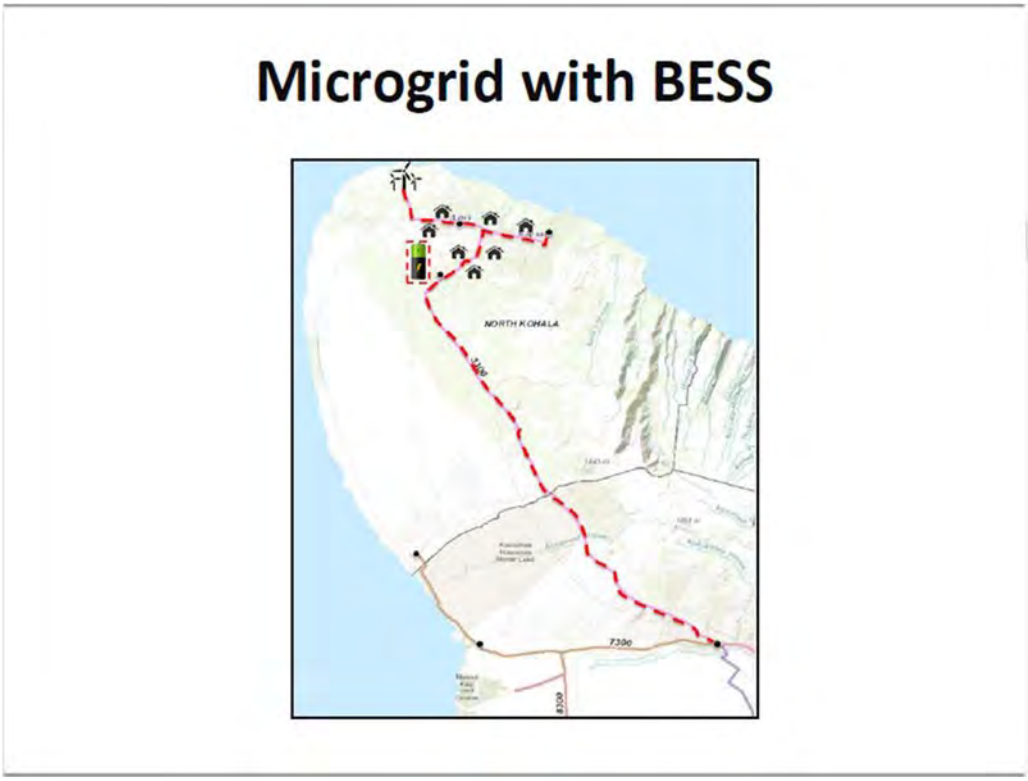
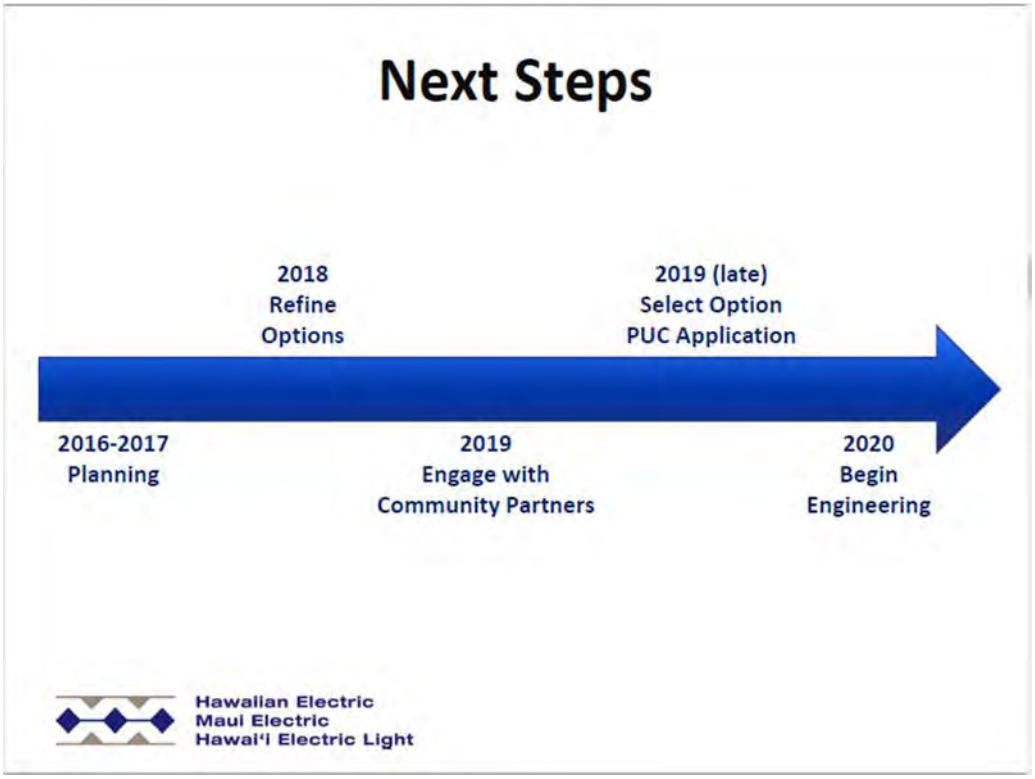
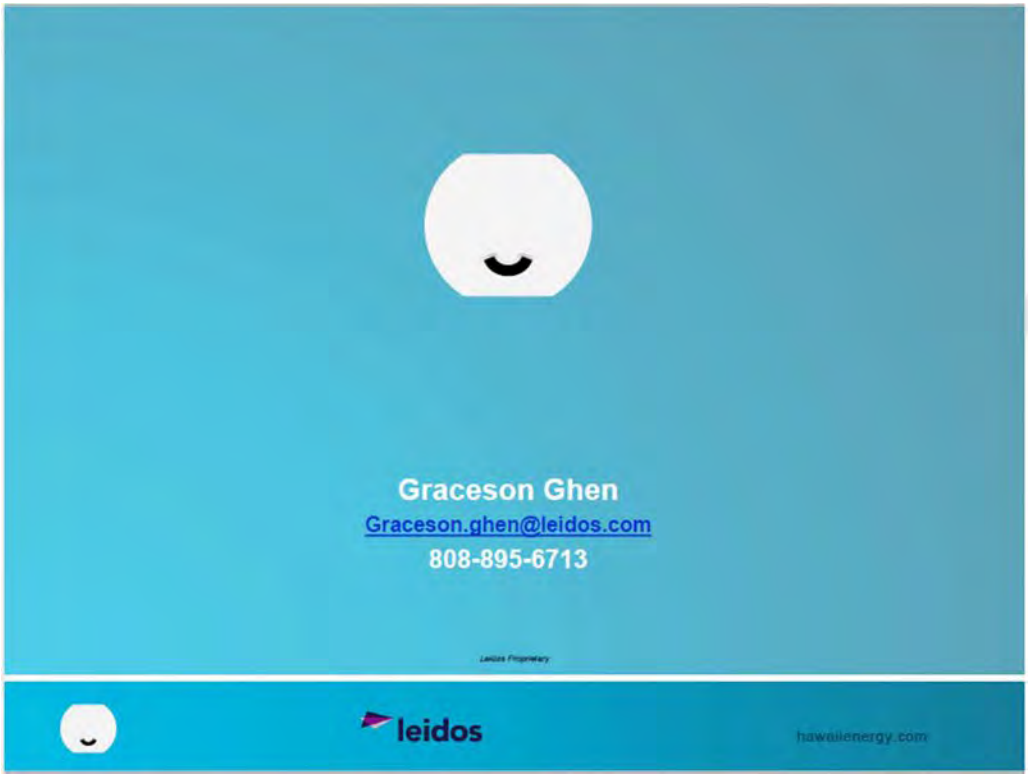
Hawaiian Electric
Maui Electric
Hawai'i Electric Light


Microgrid with BESS
NORTH KONALA
7300


Next Steps
2018
Refine
Options
2019 (late)
Select Option
PUC Application
2016-2017
Planning
2019
Engage with
Community Partners
2020
Begin
Engineering
Hawaiian Electric
Maui Electric
Hawai'i Electric Light


Graceson Ghen
Graceson.ghen@leidos.com
808-895-6713
leidos
hawaiienergy.com

Residential Rebate Offerings

Residential Rebate Offerings

Energy Smart 4 Homes

Community Workshops

- Flip the switch on the often confusing concepts of energy usage
- Local presenters with creative & relatable delivery styles who are networked within hard-to-reach communities across the islands

Lāna'i Community Projects

Energy Smart 4 Homes
- Over 250 units retrofitted at 3 multifamily properties
- ~200 Pūlama Lāna'i-owned single family residences retrofitted to date

Bulk Purchase Appliance Program
- Over 100 Pūlama Lāna'i refrigerator replacements
- 13 Lāna'i City community refrigerator replacements

Community Workshops & Literacy
- Multiple community presentations and workshops

Commercial Rebates

Hawai'i Energy

Hawai'i Energy makes it easy to implement your projects quick. We help you identify energy-saving opportunities and provide attractive financial incentives that significantly offset costs, reduce payback periods and positively impact your bottom line. To get started, call us at **839-8880** (Oahu) or **1-877-231-8222** (toll-free neighbor islands), or visit our website at HawaiiEnergy.com/for-businesses.

PLEASE NOTE: All incentives require a completed and signed application, relevant worksheets, product specifications and project invoices. All documents can be submitted via email to HawaiiEnergy@leidos.com or faxed to (808) 441-6068.

HVAC

Important: AC system size is taken as the AHRI rated system capacity, not the nominal system capacity which is rounded to the nearest whole number.
Please see corresponding worksheet for eligibility requirements

Chillers	
Positive Displacement	$45/ton
Centrifugal	$45/ton
Air-cooled with condenser	$45/ton

Air-Cooled Package/Split	
Package/Split	Tier 1: $100/ton
Package/Split	Tier 2: $175/ton
Note: Refer to custom program for units with capacities greater than 600 tons.	

Water-Cooled Package/Split	
Package/Split	$100/ton

Water-source Heat Pumps	
Water-source heat pump	$100/ton

VRF Multisplit AC and Heat Pumps	
Multisplit AC	$250/ton

Variable Frequency Drives	
VFD controls for HVAC fans; new construction > 7.5 hp not eligible	$50 per HP
VFD controls for Chiller and Condenser Water pumps	$80 per HP

Refrigeration & Kitchen Equipment

Refrigerators: New unit must be > 16 cu. ft.; trade-in must be > 14 cu. ft.
Night covers: On existing open refrigerated display cases
Anti-Sweat Heater Controls: Replacement of existing controls. New refrigerators/ freezers and walk-in units manufactured after 1/1/09 not eligible.

Specialty Kitchen Equipment	
Equipment Category	**Incentive**
ENERGY STAR® Refrigerators (Trade-In)	$150 per unit
Refrigerated Night Covers	$10 per lin. ft.
Anti-Sweat Heater Controls (for refrigerator/freezer)	$40 per lin. ft.
Kitchen Exhaust Hood Demand Ventilation	$700 per HP
ENERGY STAR® Commercial Kitchen Equipment	Various- see separate worksheet

Advanced Metering & Controls

Advanced metering: Retrofit only; new construction not eligible. Condos and small businesses must be master-metered. Projects are subject to pre-approval and meet other Program requirements.

Advanced Metering	
Equipment Category	**Incentive**
Condominium submetering	$150 per billed unit
Small Business / Tenant submetering	$150 per billed unit

Controls	
Equipment Category	**Incentive**
Energy Management Systems	$0.12 per kWh
Hotel Room EMS	$75 per unit
Garage Exhaust Ventilation	$0.12 per kWh
Vending Machines	$50 per system

Pumps&Motors

Pre-approval required.
Existing equipment must not have VFD and all motors must meet CEE Premium Efficiency Standards.
Please see corresponding worksheet for eligibility requirements

Motors	
Equipment Category	**Incentive**
Electronically Commutative Motors (ECM) & Speed Control for **Commercial Refrigeration** (retrofit only)	$85 each
Electronically Commutative Motors (ECM) & Speed Control for **HVAC Fan Coil Applications**	$55 each
Premium Efficiency Motors	Refer to worksheet

Pumps	
Equipment Category	**Incentive**
VFDs for Pool Pumps	$225 per HP
• Pre-approval required • 3HP or less (> 3HP see Customized) • Existing equipment must not have VFD	
VFD Domestic Water Pump System	$3,000 + $80 per HP reduced
• Retrofit only; pre-approval required • Total HP must ≤ to existing system; limited to system reduction of ≤ 129HP. • All motors must meet CEE Premium Efficiency Standards.	

Water Heating

Heat pump requirements

Tons	5 - 11.25	>11.25
COP	3.3	3.2

Please see corresponding worksheet for eligibility requirements

Commercial Water Heating	
Equipment Category	**Incentive**
Heat Pump Water Heating	Based on size and COP
Commercial Solar Water Heating	$250 / ton de-rated output

Energy Services & Maintenance

Requires pre-approval and must meet other Program requirements, see corresponding Rules & Requirements for details.
**Incentives capped by building square footage as well.*

Energy Services & Maintenance	
Equipment Category	**Incentive**
Re-Commissioning & Retro-Commissioning	Total incentive is the **sum of two parts below**, capped at a total of 80% of total project cost: 1. The lessor of: 50% of study cost, $0.20 per square foot, or $15,000. 2. Additional $0.08 per kWh saved in the first year
Energy Audits	~~85% up to $5,000*~~ ~~50% up to $15,000*~~
Energy Study	Additional incentives available to implement measures as a result of the study

Building Envelope

New construction, shaded or north-facing windows not eligible. Solar heat gain coefficient must be < 0.435 or shading coefficient < 0.5.

Building Envelope	
Equipment Category	**Incentive**
Window Film	$0.85 per sq. ft.
Incentive rate is halved for replacement window film, see worksheet	

Customized Projects

Lighting projects must have a payback > 6 months. Non-lighting projects must have a payback > 1 year.
Incentive cannot exceed 50% of incremental project cost.

Custom		
Equipment Category	**Equipment Life**	**Incentive**
Lighting Projects	≤5 Years	$0.08 /kWh
Lighting Projects	> 5 Years	$0.12 /kWh
Non-Lighting Projects	≤5 Years	$0.08 /kWh
Non-Lighting Projects	> 5 Years	$0.12 /kWh

Transformers

- Commercial customer-sited and customer-owned transformer (not utility-owned)
- Must meet or exceed DOE 2016 efficiency standards
- Existing transformer must be manufactured/installed prior to 2007
  - Transformers installed after 2007 may still qualify on a case-by-case basis; contact Hawaii Energy for more information.
- Must serve the same load as the pre-existing transformer

> 1000 kVA may qualify under the Custom Incentive Program

Transformers	
Equipment Category	**Incentive**
New Transformer	$0.12 / kWh + $125 per kW (5pm-9pm)

Electric Vehicle Charging Stations

Important:
Available through September 30, 2019.

- UL-listed, dual-port, Level 2 EV Charging Stations with network connectivity
- Charging station usage for tenants, employees and/or authorized guests; not intended for fleet-charging, individually-owned parking stalls or single family homes
- Appropriate number of parking stalls and regulatory signage required

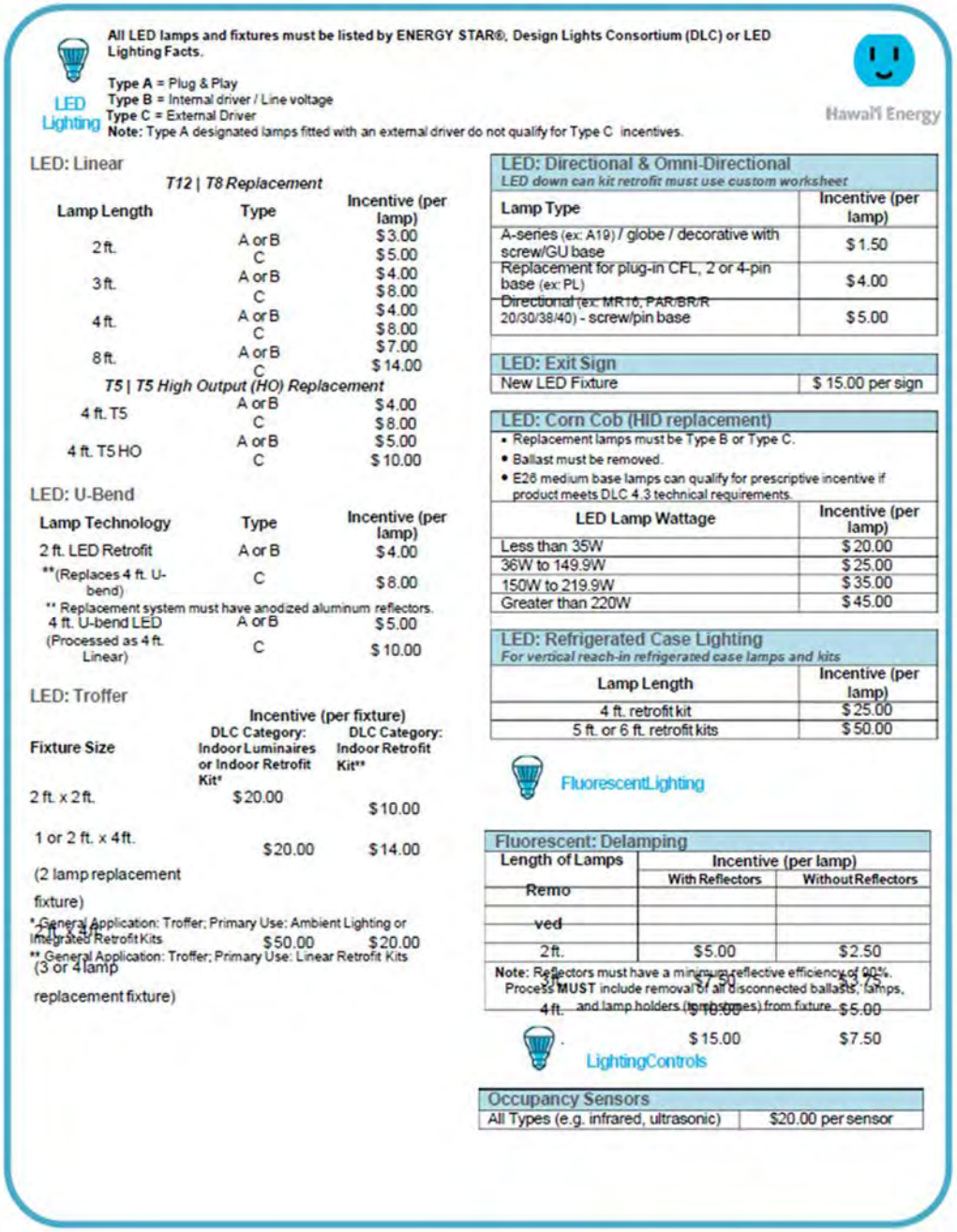
For more details:
https://hawaiienergy.com/evcharging

EV Charging Stations	
Equipment Category	**Incentive**
Workplace: Place of business generally open between 7am-5pm	**New installation: $5,000 per dual-port station** (i.e., no pre-existing station)
Multi-Unit Dwelling: Apartment/Condos with at least 8 parking stalls	**Retrofit: $1,500 per dual-port station** (i.e., upgrade from a single-port to dual-port station)

New Construction

For new construction projects, contact us at hawaiienergy@leidos.com

New Construction	
Equipment Category	**Incentive**
Various measures that exceed code and will result in a more energy-efficient project, subject to Hawai'i Energy approval.	Customized



LED Lighting

All LED lamps and fixtures must be listed by ENERGY STAR®, Design Lights Consortium (DLC) or LED Lighting Facts.

Type A = Plug & Play
Type B = Internal driver / Line voltage
Type C = External Driver
Note: Type A designated lamps fitted with an external driver do not qualify for Type C incentives.

Hawai'i Energy

LED: Linear

T12 | T8 Replacement

Lamp Length	Type	Incentive (per lamp)
2 ft.	A or B	$3.00
	C	$5.00
3 ft.	A or B	$4.00
	C	$8.00
4 ft.	A or B	$4.00
	C	$8.00
8 ft.	A or B	$7.00
	C	$14.00

T5 | T5 High Output (HO) Replacement

4 ft. T5	A or B	$4.00
	C	$8.00
4 ft. T5 HO	A or B	$5.00
	C	$10.00

LED: U-Bend

Lamp Technology	Type	Incentive (per lamp)
2 ft. LED Retrofit	A or B	$4.00
**(Replaces 4 ft. U-bend)	C	$8.00

** Replacement system must have anodized aluminum reflectors.

4 ft. U-bend LED (Processed as 4 ft. Linear)	A or B	$5.00
	C	$10.00

LED: Troffer

Fixture Size	Incentive (per fixture) DLC Category: Indoor Luminaires or Indoor Retrofit Kit*	DLC Category: Indoor Retrofit Kit**
2 ft. x 2 ft.	$20.00	$10.00
1 or 2 ft. x 4 ft. (2 lamp replacement fixture)	$20.00	$14.00
2ft. x 4ft. (3 or 4 lamp replacement fixture)	$50.00	$20.00

* General Application: Troffer; Primary Use: Ambient Lighting or Integrated Retrofit Kits
** General Application: Troffer; Primary Use: Linear Retrofit Kits

LED: Directional & Omni-Directional

LED down can kit retrofit must use custom worksheet

Lamp Type	Incentive (per lamp)
A-series (ex: A19) / globe / decorative with screw/GU base	$1.50
Replacement for plug-in CFL, 2 or 4-pin base (ex: PL)	$4.00
Directional (ex: MR16, PAR/BR/R 20/30/38/40) - screw/pin base	$5.00

LED: Exit Sign

New LED Fixture	$15.00 per sign

LED: Corn Cob (HID replacement)

- Replacement lamps must be Type B or Type C.
- Ballast must be removed.
- E26 medium base lamps can qualify for prescriptive incentive if product meets DLC 4.3 technical requirements.

LED Lamp Wattage	Incentive (per lamp)
Less than 35W	$20.00
36W to 149.9W	$25.00
150W to 219.9W	$35.00
Greater than 220W	$45.00

LED: Refrigerated Case Lighting

For vertical reach-in refrigerated case lamps and kits

Lamp Length	Incentive (per lamp)
4 ft. retrofit kit	$25.00
5 ft. or 6 ft. retrofit kits	$50.00

FluorescentLighting

Fluorescent: Delamping

Length of Lamps Remo ved	Incentive (per lamp) With Reflectors	Without Reflectors
2ft.	$5.00	$2.50
3ft.	$7.50	$3.75
4ft.	$15.00	$7.50

Note: Reflectors must have a minimum reflective efficiency of 90%. Process **MUST** include removal of all disconnected ballasts, lamps, and lamp holders (lampstubes) from fixture. $5.00

LightingControls

Occupancy Sensors

All Types (e.g. infrared, ultrasonic)	$20.00 per sensor

Feedback

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

Mahalo!

Hawaiian Electric
Maui Electric
Hawai'i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix L – Energy Storage Services Agreement

NOTE: Please refer to Exhibit 5 of this ~~January 13~~February 28, 2023 filing for the ~~Draft~~ Model Energy Storage Services Agreement

Hawai‘i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix M – RESERVED

Hawai‘i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix N – RESERVED

Hawai‘i Electric Light

~~**DRAFT**~~

REQUEST FOR PROPOSALS

FOR

NORTH KOHALA

ENERGY STORAGE

ISLAND OF HAWAI‘I

~~JANUARY 13~~FEBRUARY 28, 2023

Docket No. 2022-0012

Appendix O – Functional Requirements

Hawai‘i Electric Light

Table of Contents

1. Project Overview

The North Kohala Reliability Project will be designed to allow a segment of the North Kohala 34.5kV system including the Maliu Ridge, Halaula, and Hawi distribution substations to be operated safely and reliably as a microgrid isolated from the bulk Hawaii Electric Light (Company) power system utilizing a Battery Energy Storage System ("BESS"). The Hawi Renewable Development (HRD) wind farm located on the same radial segment of the Hawaii Electric Light power system will not be expected to operate in the microgrid island due to its size in comparison to the size of the microgrid, the controller complexity required to enable such operation, and the legacy of equipment used at the site. Further, an additional smaller microgrid allowing operation of just the Hawi Substation islanded independent of the 34kV system, utilizing the same BESS resource and interconnection equipment, is expected.

1.1 BESS Location, Interconnection, and Demarcation

The Company plans to acquire approximately 1.2 acres of land adjacent to the existing Hawi Distribution Substation ("Land") for sighting and interconnecting the BESS. The Land will be provided for the BESS developer to install the BESS. The Land includes the 34kV line tap where the Hawi Distribution Substation is connected and where additional microgrid interconnection equipment would be expected to be installed. The BESS provider will be expected to provide all equipment on the BESS side of the BESS 34kV breaker including the BESS 34kV breaker. The Company will be responsible for all equipment on the line side of the BESS 34kV breaker including but not limited to: the microgrid controller, the Hawi Isolation Breaker, and the Hawi Substation 34kV breaker; as well as other enabling equipment beyond the Hawi Interconnection including but not limited to the Maliu Ridge Isolation Switch, fault indicators, 34kV relay protection, and any additional PTs and CTs needed at the existing sites. A Conceptual SLD of the microgrid area depicting the above-described equipment is provided in Figure 1 below.

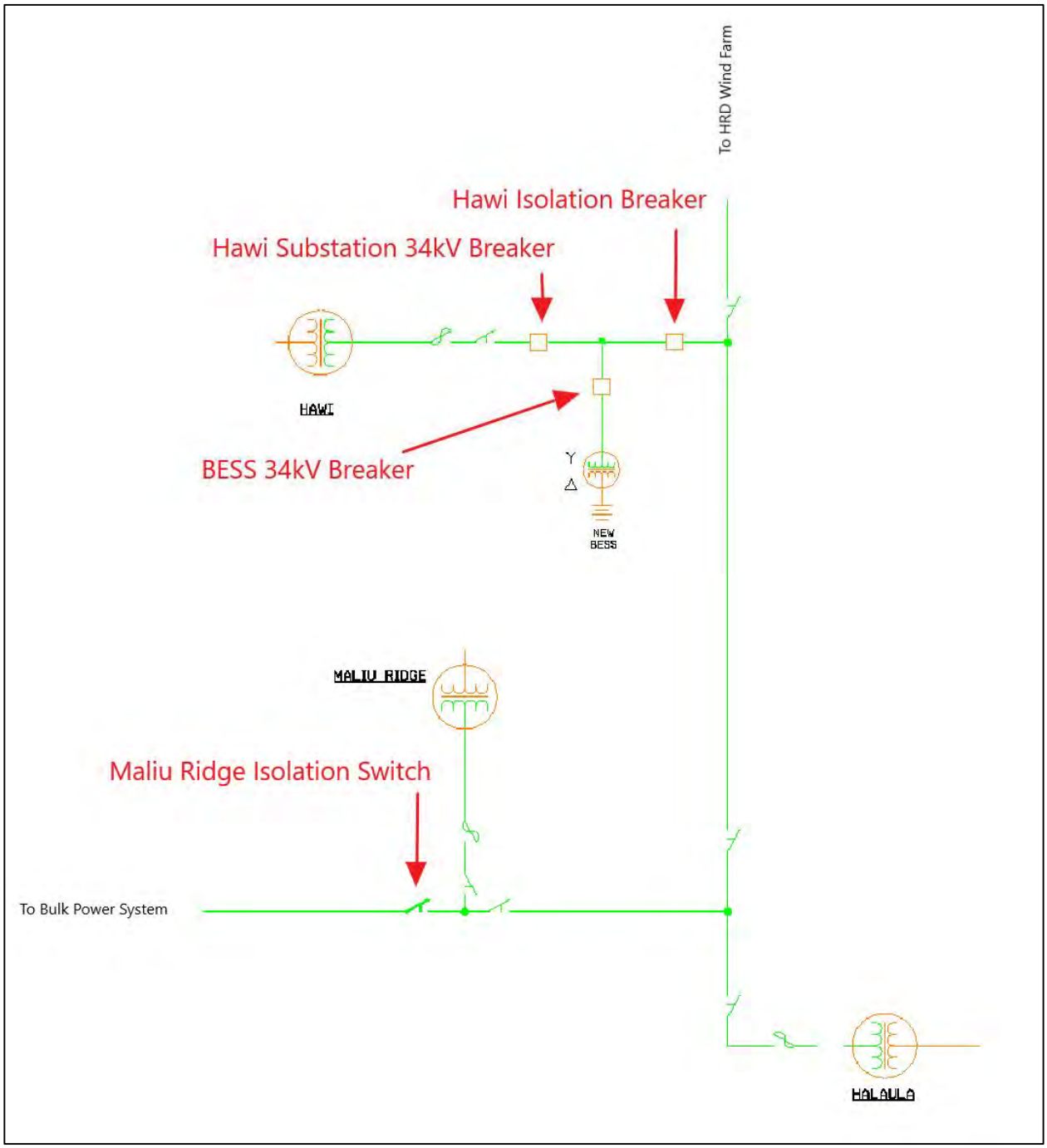


Figure 1. Conceptual SLD depicting the North Kohala Microgrid area and locations of equipment or interest.

1.2 Communications Requirements and Existing Infrastructure Capability

The Company will be responsible for all required inter microgrid communications links and communications links external to the microgrid utilizing the existing Company network infrastructure in the area. Details of how the BESS will communicate to the microgrid controller and the existing SCADA system will be established in more detailed design phases, but in general the BESS communications capability should be prepared to support a variety of possible hardware and protocol interfaces for ease of integration (i.e. fiber, copper, serial, IP, etc.). The interface between the

BESS communication system and the Company communication system will be achieved in a dedicated demarcation cabinet or acceptable equivalent.

An automation architecture diagram to depict the expected automation of the microgrid controller and devices it controls will be developed as part of the more detailed design. The automation architecture diagram will include decision blocks where manual controls are expected.

2. Microgrid Configurations and Transitions

The North Kohala microgrid is being designed to operate in two distinct islanded configurations.

2.1 Configuration 1: "North Kohala 34kV Microgrid"

This is the preferred configuration of the microgrid when system conditions allow (i.e. fault external to the 34 kV microgrid area). In this configuration the point of isolation from the larger power system will be at the Maliu Ridge Isolation Switch located near Maliu Ridge Distribution Substation and on the Waimea side of the Maliu Ridge substation 34kV tap such that the 34kV system between the Maliu Ridge, Halaula and Hawi substations is used to serve those stations in the microgrid.

Transitions to islanded operation in this configuration should include:

2.1.1 Configuration 1: Planned Transition

Upon a control signal from the system operator to initiate the transition to islanded operation, the microgrid will balance the power flow at the point of isolation in preparation for the isolation switch opening to achieve islanded operation. The actual operation of the isolation switch should be designed to be triggered automatically by the microgrid controller when conditions are met or manually by the system operator should manual operation be preferred or required.

2.1.2 Configuration 1: Unplanned Transition

Upon a sustained fault being detected and isolated by the Waimea and Hawi Renewable Development (HRD) 34kV breakers; the microgrid controller and system operator should be informed of the fault location. If the fault location is determined to be in the segment of line between Waimea and the Maliu Ridge Isolation Switch the Maliu Ridge Isolation Switch is to be opened by the microgrid controller to isolate the microgrid area from the fault and allow for restoration. Automation of the unplanned transition is the preferred design, but system operators can also be trained to perform steps if manual operations are required. The details of automation versus manual operations can be established in more detailed design stages and may be influenced by existing communications infrastructure and work practices.

2.2 Configuration 2: "Hawi Microgrid"

The Hawi Microgrid is an alternative configuration of the microgrid islanded area expected to be utilized only if system conditions do not allow for operation of the North Kohala 34kV Microgrid (i.e. fault internal to the 34 kV Microgrid). In the Hawi Microgrid configuration the point of isolation from the larger power system is expected to be at the Hawi Tap Breaker located on the 34kV tap to the Hawi substation such that the 34kV system between the Maliu Ridge, Halaula and Hawi will remain de-energized while Hawi is able to be energized through a very small segment of 34kV bus/line between the BESS and the Hawi distribution substation main power transformer.

Transitions to island in this configuration should include:

2.2.1 Configuration 2: Planned Transition

A planned transition to this configuration is not expected as the Hawi Microgrid is not expected to be leveraged for planned outages at this time. Should a need to operate in this configuration for planned outages be identified in future

work the planned transition to this configuration should be similar to that described for the North Kohala 34kV Microgrid configuration but using the Hawi Tap Breaker for isolation rather than the Maliu Ridge Isolation Switch, and would need to be commanded through a separate SCADA point than the North Kohala 34kV Microgrid to distinguish the expected islanding configuration for the microgrid controller to transition to.

2.2.2 Configuration 2: Unplanned Transition

Upon a fault being detected and isolated by the Waimea and Hawi Renewable Development (HRD) 34kV breakers (the line will attempt a single reclose of the Waimea breaker in an attempt to restore the line after temporary faults); the microgrid controller and system operator should be informed of the fault location. Existing relaying technology provides estimated fault location based on impedance-based measurements, but fault indicators around the Maliu Ridge Isolation Switch may be a necessary improvement for accurate fault location in this application. If the fault location is determined to be in the segment of line between the Maliu Ridge Isolation Switch and the Hawi Isolation Breaker, the Hawi Isolation Breaker is to be opened to isolate the Hawi Microgrid area from the fault and allow for restoration of the Hawi loads. Automation of the unplanned transition is the preferred design, but system operators can also be trained to perform steps if manual operations are required. The details of automation versus manual operations can be established in more detailed design stages and can be influenced by existing communications infrastructure and work practices.

2.3 Black Start

It is required that the BESS be capable of black start, that is self-starting in the absence of a grid connection, but only in the designed microgrid island mode and is not required as a "cranking path" to facilitate the starting of other grid-connected generators. The black start energization of the North Kohala 34kV Microgrid or Hawi Microgrid should be achieved in a controlled method that ensures the BESS remains in operation for all transformer energizations and load additions and minimizes observable power quality issues for customers connected in the microgrid as transformers and loads are energized.

2.3.1 Configuration 1: Unplanned Transition: Black Start Method 1: "Energize All"

The preferred method to start the North Kohala 34kV Microgrid after an Unplanned Outage of the 34kV line ("Black Start Method") is by energizing all the islanded transformers and loads in a single breaker closure of the BESS such that all utility customers expected to be energized by the BESS are restored power simultaneously and are not exposed to subsequent transformer and load additions which are likely to cause a noticeable voltage flicker. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer and load energization modeling.

2.3.2 Configuration 1: Unplanned Transition: Black Start Method 2: "Energize Main Power Transformers Then Loads"

This method for black start of the North Kohala 34kV Microgrid would allow energizing all the islanded transformers with the utility customer loads disconnected and loads can be added in single feeder segments after the substation main power transformers are energized. The energization of the transformers could be achieved in a single breaker closure of the BESS such that all islanded transformers are restored to rated line voltage simultaneously or can be done in a method of controlled voltage increase to minimize inrush if the BESS supports such an energization method and if such a method would be preferred by the BESS. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer energization modeling. Further the subsequent energizations of the feeders' cold load and the power quality effect that has on already connected customers would need to be studied to ensure power quality is acceptable for load additions and can be supported by the BESS.

2.3.3 Configuration 2: Unplanned Transition: Black Start Method 1: "Energize All"

The preferred method to black start the Hawi Microgrid is by energizing the Hawi distribution main power transformer and loads in a single breaker closure of the BESS such that all islanded customers are restored simultaneously and are not exposed to subsequent load additions which could cause a noticeable voltage flicker. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer and load energization modeling.

2.3.4 Configuration 2: Unplanned Transition: Black Start Method 2: "Energize Main Power Transformers Then Loads"

This method for black start of the Hawi Microgrid would allow energizing the Hawi distribution substation main power transformer with the customer loads disconnected and loads can be added in single feeder segments after the substation main power transformer is energized. The energization of the transformer could be achieved in a single breaker closure of the BESS such that transformer is restored to rated line voltage in a single breaker operation or can be done in a method of controlled voltage increase to minimize inrush if the resource supports such an energization method and if such a method would be preferred by the BESS. The BESS capability to support this mode of energization will need to be validated through detailed resource dynamics and transformer energization modeling. Further the subsequent energizations of the feeders' cold load and the power quality effect that has on already connected customers would need to be studied to ensure power quality is acceptable for load additions and can be supported by the BESS.

2.4 Transition Back to Grid Connected:

The 34kV grid connection is expected to be restored through manual switching up to the point of isolation (Maliu Ridge Isolation Switch or Hawi Tap Breaker). Once the grid connection is restored up to the point of isolation the re-connection of the microgrid to the grid is expected to be initiated through a command from SCADA. Once the control signal to reconnect the microgrid to the grid is received the microgrid controller will verify the grid connection is energized (acceptable voltage and frequency), the BESS will synchronize the microgrid voltage and frequency to grid voltage and frequency and when acceptably synchronized will command the microgrid isolation switch or breaker to close.

2.5 Planned work on 34kV segments within the North Kohala 34kV Microgrid

At this time the majority of planned work is expected to occur between the Waimea Substation and the Maliu Ridge Isolation Switch such that the North Kohala 34kV Microgrid will be able to support all the loads that would be isolated. If in future years a need for planned work is expected on 34kV segments within the North Kohala 34kV Microgrid area those configurations would be investigated when the need is identified.

The preferred option to facilitate 34kV work within the North Kohala 34kV Microgrid will be established as the need is identified and in coordination with work schedules and practices. Additional studies to ensure safe and reliable operation in the alternate configurations will be conducted as the need is identified to support the operations and work.

2.6 Distribution Circuit Ties

To reduce complexity and the number of studies that would need to be conducted, the North Kohala 34kV Microgrid and Hawi Microgrid configurations will not consider for operation with distribution circuits within the microgrid tied and/or loads transferred. If there are circuit exceptions (circuits within the microgrid are tied or offloaded) the microgrid will not be able to operate until the configuration can be studied to ensure adequate safety and power quality in the specific configuration. Circuits within the microgrid should be restored to a non-exception status ahead of operating them in the microgrid.

3. Normal Operation and BESS Operation when Grid Connected

3.1 Normal Operation

In normal operation the 34.5kV sub-transmission line from Waimea to Maliu Ridge substation ("3300 line") supplies power to the North Kohala area via the Maliu Ridge, Halaula, and Hawi distribution substations, and allows export from the HRD wind farm.

3.2 BESS Operation when Grid Connected

When the BESS is grid connected it is expected to retain its full energy capacity in preparation for any unplanned or planned outages of the 34kV line. The restoration of energy to the BESS (charging of the BESS) is expected to be achieved through a setpoint control from SCADA and is only expected to occur when under SCADA control. The potential for the BESS to regulate voltage when grid connected will need to be studied in detail to ensure no adverse controller interactions are created between the resource and the existing HRD wind farm which also has provision for voltage regulation at its 34kV point of interconnection. If voltage regulation from the BESS is found to be favorable; the BESS will be expected to regulate voltage at its 34kV terminals through provision of reactive power to a voltage setpoint control from SCADA to the extent it can when not generating (zero active power flow or consuming energy).

3.3 No Additional Contracted Services from the BESS

The BESS is expected to be used exclusively by and dedicated to the North Kohala Microgrid. It is not expected to provide any capacity or energy dependent ancillary services to the grid when grid connected as this will conflict with its primary purpose of supporting islanded microgrid operation for extended outages of the 34kV line. Further the 69-34kV transformation capacity at the Waimea Substation is completely allocated to the capacity of the HRD wind farm and so any service when grid connected would need to be coordinated with the output of the wind farm to ensure no overloads occur. This additional complexity is not expected to be worth the small potential incremental benefit of utilizing this BESS for grid capacity or energy in addition to those services conflicting with the primary purpose as a North Kohala Reliability Resource.

The BESS will be considered for a contingency frequency response service that could be triggered in response to a frequency deviation outside of a deadband to immediately stop consuming energy if consuming energy at the time of an underfrequency event or immediately start consuming energy if there is capacity to consume energy during an overfrequency event. The response of this service would be aligned with the FFR-1 grid service procured for the Island of Hawaii and described in greater detail in the *Request for Proposals for Delivery of Grid Services from Customer-Sited Distributed Energy Resources for the Islands of O'ahu, Maui & Hawai`i*[1]. No specific allocation of capacity to this service is expected and no additional cost for this service should be contemplated as it will be enacted only when the conditions for it to operate are met and it would only be supplemental to the primary use case as the North Kohala Reliability Resource. This frequency response service should be able to be enabled and disabled through SCADA control and should only be allowed to be enabled when grid connected.

4. Grid Following and Grid Forming Capability (for Inverter Based Resources)

4.1 Grid Following (GFL)

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 version 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.

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[1] https://www.hawaiianelectric.com/documents/clean_energy_hawaii/selling_power_to_the_utility/competitive_bidding/20190822_final_stage_2_rfp_book_7.pdf (reference pdf pages 235-237)

4.2 Grid Forming (GFM)

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.

4.3 Microgrid Resource Mode of Operation

The BESS will be required to be capable of operating in a Grid Forming mode when grid connected and when islanded to ensure a seamless transition from grid connected to islanded and back. The BESS when islanded will need to operate in a Grid Forming isochronous frequency control mode to control voltage and frequency in the microgrid in the absence of any other synchronous or frequency and voltage controlling resource. The BESS can remain in Grid Forming mode while grid connected but would be expected to operate on a DROOP primary frequency response and not as an isochronous source, or could be switched to a Grid Following mode of operation and provide the grid support functions it is capable of in the Grid Following mode. The mode of operation when grid connected and not transitioning to islanded will need to be studied to identify the preferred mode of operation when grid connected.

5. Power System Protection

5.1 When Grid Connected

When the microgrid is grid connected the existing power system protection schemes are expected to operate as designed.

5.2 When Islanded

Both the 34kV and Hawi Microgrid configurations will need to be studied in detail to ensure power system protection is safe and reliable for all desired configurations; and should be designed to be selective and secure to the extent achievable in all desired configurations. A model representing the detailed BESS behavior during fault conditions will need to be used to study the detailed operations of protection devices. The BESS model for this protection study should include expected limits of the BESS (ride-through, current, imbalance, etc.) so those can be avoided by power system protection systems operating ahead of those limits to still retain selectivity in the microgrid to the extent the BESS can support.

5.2.1 Hawi 34kV Bus

The BESS is expected to be interconnected to the system at a new 34kV bus created between a new BESS 34kV breaker, a new Hawi Isolation Breaker, and a new Hawi Substation 34kV breaker ("New Hawi 34kV Bus"). This segment of 34kV bus is expected to be protected utilizing an overcurrent bus protection scheme.

5.2.2 BESS Protection

The BESS will be expected to be designed with appropriate protection of the equipment on the BESS side of the BESS 34kV breaker. When grid connected the BESS protection scheme can rely on short circuit current being provided from the system. When islanded the BESS protection will need to be coordinated to the extent possible with the protection schemes described above for islanded operation. Islanded operation protection coordination will be investigated and informed in the detailed protection study. BESS protection when grid connected will also be validated as part of the detailed protection study.

5.3 Applying Alternate Settings Between Grid Connected and Islanded Operation

If any power system protection settings are expected to need to be changed between grid connected and islanded operation the protective relays will be pre-programmed with the appropriate settings for each configuration and the microgrid controller would inform the relays of which settings are to be active based on the expected microgrid configuration. The change in settings are expected to be applied ahead of operating as a microgrid to ensure safety at all times, even if it sacrifices selectivity during the transition between grid connected and islanded operation.

6. Distributed Energy Resource (DER)

6.1 Existing DER

All existing DER systems interconnected to the circuits in the microgrid area will be expected to be capable of operating when the microgrid is in an islanded configuration. Existing DER is expected to contribute to the energy capacity of the microgrid in the same form it contributes when grid connected under the existing agreement for interconnection. The BESS energy and power capacity requirements were derived with inclusion of existing DER contributions of energy into the islanded microgrid.

6.1.1 Need for BESS to consume energy when in Islanded mode

At existing levels of DER deployment in the microgrid area DER export is never more than the gross load in the area and therefore it is not envisioned that the BESS would ever need to consume energy when in islanded mode. Further, all future DER programs with capacity remaining for interconnection have a requirement for advanced inverter functions such as frequency-watt to aid in stabilizing frequency when high, as well as an ability to be externally controlled by the utility for excess energy conditions; so if future deployment of DER in the area poses an excess energy condition when in islanded mode a means to leverage the external utility control of DER can be pursued. Also given the planned nature of this microgrid for most of its operations, should a potential excess energy condition be predicted the planned work could be manipulated to try to reconnect the microgrid ahead of the excess energy condition being reached.

6.2 DER as a Microgrid Capacity Grid Service

Given stakeholder interest to allow for DER participation in a potential “Microgrid Capacity Grid Service”, the BESS sizing can contemplate an option for this potential service to be provided by DERs and the capacity acquired through this service would supplement the sizing of the BESS. A DER provided capacity service is not expected to eliminate the need for a BESS given the need for a “Grid Forming” source within the microgrid to allow for “Grid Following” DER to operate. The DER provided service would be expected to be competitively procured in conjunction with a competitive sizing of the BESS. If a DER grid service is being proposed the details of monitoring and control required of the DER to the microgrid controller for reliable cost-effective operation of the BESS in coordination with the Microgrid Capacity Grid Service DER will need to be established. The proposed design and cost to build such an interface between DER and the microgrid controller would be expected to be provided in a proposal offering a DER service solution for proper comparison of costs.

Nojiri, Andrew

From: puc@hawaii.gov
Sent: Tuesday, February 28, 2023 4:15 PM
To: Nojiri, Andrew
Subject: Hawaii PUC eFiling Confirmation of Filing

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