

**Hawaiian
Electric**

REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

AND

ENERGY STORAGE

ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

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Chapter 1: Introduction and General Information

Hawaiian Electric Company, Inc. (“Hawaiian Electric” or the “Company”) seeks proposals for the supply of qualified variable renewable dispatchable generation and energy storage for the Hawaiian Electric System in accordance with this Request for Proposals (“RFP”).¹ The total amount of variable renewable dispatchable generation being solicited in this RFP is the capability to provide 1,300,000 megawatt hours (“MWh”) annually. The total amount of energy storage being solicited in this RFP is the capability to store and discharge energy equivalent to at least 1,200 MWh per cycle via a total nameplate capacity of at least 200 megawatts (“MW”). This MW and MWh storage capability is referred to herein as the “Storage Requirement”. In addition, up to 50 MW for 30 minutes of Fast Frequency Response (as defined in Appendix J, K, and L) is being solicited which may either be fulfilled through standalone storage projects or generation projects paired with storage proposed in response to this RFP, or through Fast Frequency Response 1 (“FFR-1”) capability on O‘ahu bid into the Companies’ RFP for Delivery of Grid Services from Customer-Sited Distributed Energy Resources (“Grid Services RFP”).

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

The Company seeks variable renewable dispatchable generation projects (with or without storage systems) and standalone energy storage projects in this RFP. The Company intends to contract for variable renewable dispatchable generation projects through this RFP using its Model Renewable Dispatchable Generation Power Purchase Agreement (“RDG PPA”), which treats variable generation facilities as fully dispatchable. The Company has created a photovoltaic (“PV”) version (the “PV RDG PPA”) and a wind version (the “Wind RDG PPA”) of its RDG PPA attached as Appendix J and Appendix L respectively.² If the proposed Project utilizes a technology other than PV or wind and/or contains components that are not encompassed by the RDG PPA, then the terms of the RDG PPA will be modified to address the specific technology and/or component.

The Company intends to contract for standalone energy storage projects through this RFP using its Model Energy Storage Power Purchase Agreement (“ESPPA”), pursuant to which Hawaiian Electric will purchase energy storage services (i.e., capacity, Fast Frequency Response, and ancillary services). The ESPPA is attached as Appendix K.²

Each successful Proposer will provide variable renewable dispatchable generation and/or energy storage to the Company pursuant to the terms of an RDG PPA or ESPPA, which will be subject to PUC review and approval by the State of Hawai‘i Public Utilities Commission (“PUC”).

The Company will evaluate Proposals using the evaluation and selection process described in Chapter 4. The Company will evaluate and select Proposals based on both price and non-price factors that impact the Company, its customers, and communities affected by the proposed Projects. The amount of generation and storage that the Company may acquire from this RFP

¹ The Company is soliciting proposals for renewable dispatchable generation and energy storage in stages. The “Stage 1” RFPs were conducted in 2018. This is part of the “Stage 2” RFPs to be conducted in 2019.

² The RDG PPA for PV and Wind, and ESPPA for standalone energy storage, are available on the Company’s RFP website and through the PowerAdvocate platform for the RFP.

depends on, among other things, the quality and cost-effectiveness of bids received in response to this RFP; economic comparison to other RFP responses; updates to the Company’s forecasts; transmission availability; and changes to regulatory or legal requirements. If attractive Proposals are received that will provide energy and energy storage in excess of the targeted amounts, the Company will consider selecting such Proposal(s) if benefits to customers are demonstrated.

All requirements necessary to submit a Proposal(s) are stated in this RFP. A description of the technical requirements for Proposers is included in the body of this RFP, Appendix B, and in the RDG PPA and ESPPA attached as Appendix J, K, and L.

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

1.1 Authority and Purpose of the Request for Proposals

- 1.1.1 This RFP is issued in response to Order No. 36474 issued on August 15, 2019 in Docket No. 2017-0352 as part of a procurement process established by the PUC.
- 1.1.2 This RFP is subject to Decision and Order (“D&O”) No. 23121 in Docket No. 03-0372 (To Investigate Competitive Bidding for New Generating Capacity in Hawai‘i), which sets forth the PUC’s Framework for Competitive Bidding (“Framework” or “Competitive Bidding Framework”).
- 1.1.3 All Proposals with a generation component submitted in response to this RFP must utilize qualified renewable energy resource(s) as defined under the Hawai‘i Renewable Portfolio Standards (“RPS”) law.³ By statute, “Renewable Energy” means energy generated or produced using the following sources: (1) wind; (2) the sun; (3) falling water; (4) biogas, including landfill and sewage-based digester gas; (5) geothermal; (6) ocean water, currents, and waves, including ocean thermal energy conversion; (7) biomass, including biomass crops, agricultural and animal residues and wastes, and municipal solid waste and other solid waste; (8) biofuels; and (9) hydrogen produced from renewable energy sources.⁴
- 1.1.4 Proposers should review the Hawaiian Electric Companies’ Power Supply Improvement Plans, filed in Docket No. 2014-0183 on December 23, 2016 (“PSIP Update Report: December 2016” or “PSIP”). Consistent with the PSIP, the primary purpose of this RFP is to obtain variable renewable energy and energy storage so that the Company can continue to transform O‘ahu’s power supply portfolio from fossil fuel-based generation to renewable-based generation towards Hawai‘i’s 100% RPS requirement.

1.2 Scope of the RFP

- 1.2.1 The Company does not have a predetermined preference for a particular renewable energy generation or storage technology.

³ RPS requirements in Hawai‘i are codified in Hawai‘i Revised Statutes (“HRS”) §§ 269-91 through 269-95.

⁴ See HRS § 269-91.

- 1.2.2 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on the completion or implementation of any other Project.
- 1.2.3 Proposals that will require system upgrades and the construction of which, in the reasonable judgment of the Company (in consultation with the Independent Observer), creates a significant risk that their Project’s Guaranteed Commercial Operations Date (“GCOD”) will not be met will not be considered in this RFP.
- 1.2.4 Projects submitted in response to this RFP must be located on the Island of O‘ahu.
- 1.2.5 Proposers will determine their Project Site. Proposers have the option of submitting a Proposal using potential Sites offered and described in Section 3.11. Proposers must locate all Project infrastructure within areas of their Site that are outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017)⁵ and are not located within a Tsunami Evacuation Zone.⁶
- 1.2.6 Projects must interconnect to the Company’s System at the 46 kV or 138 kV level.⁷
- 1.2.7 Projects must be greater than 5 MW. No single point of failure from the Facility shall result in a decrease in net electrical output greater than 135 MW. Additionally, in meeting the single point of failure requirement, if the Proposed Facility exceeds 135 MW, the Facility must be segmented in equally sized capacities (MW). Each segment must have its own point of interconnection into the Hawaiian Electric System that can be independently dispatched via the Company’s energy management system. Revisions would need to be made to the RDG PPA or the ESPPA to account for multiple points of interconnection.
- 1.2.8 Contracts for projects that include a generation component selected through this RFP shall use the RDG PPA, as described in Section 3.8. Under the RDG PPA, the Company will maintain exclusive rights to fully direct dispatch of the Facility, subject to availability of the resource and Section 1.2.11 below.
- 1.2.9 Contracts for standalone energy storage projects selected through this RFP shall use the ESPPA, as described in Section 3.8. Under the ESPPA, the Company will maintain exclusive rights to fully direct the charging and discharging of the Facility. Additionally, due to the critical nature and usage of this to support the grid, the ability to control and

⁵ Hawai‘i Climate Change Mitigation and Adaptation Commission. 2017. Hawai‘i Sea Level Rise Vulnerability and Adaptation Report. Prepared by Tetra Tech, Inc. and the State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawai‘i Department of Land and Natural Resources Contract No: 64064. This report is available at: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf

⁶ See Hawai‘i Sea Level Rise Viewer at <https://www.pacioos.hawaii.edu/shoreline/slrb-hawaii/>, and National Oceanic and Atmospheric Administration (NOAA) interactive map in partnership with the State of Hawai‘i at <https://tsunami.coast.noaa.gov/#/>.

⁷ In this RFP, “transmission-level” circuits will refer to both 46 kV sub-transmission circuits and 138 kV transmission circuits on O‘ahu.

tune the facility's response to certain grid events and conditions is an important aspect that will be required of these facilities.

- 1.2.10 Generation proposals may be submitted either with or without an energy storage component. The energy storage component can be charged during periods when full potential export of the generation Facility is not being dispatched by the Company, and the storage component can be used to provide energy to the Company during other times that are beneficial to the system. Generation proposals paired with an energy storage component may propose an additional contingency storage component to provide the Fast Frequency Response (“Contingency Storage”) whose amount is to be specified by Proposer. An energy storage component that is paired with a generating Facility must be sized to support the Facility’s Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the RDG PPA. The Contingency Storage component must be at least 5 MW and sized to provide a minimum of 30 continuous minutes at the proposed MW amount throughout the term of the RDG PPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the RDG PPA. If a project proposes an additional 5 MW of Contingency Storage this component must be able to store and discharge at least 2.5 MWh of energy in a cycle throughout the term of the RDG PPA.

- 1.2.11 Energy storage components that are paired with a generation Facility must also be able to be charged from the grid at the direction of the Company as described in this section. To be eligible to meet this RFP’s Storage Requirement as specified in Section 4.7 energy storage components must be grid-chargeable to the amount specified by Proposer from the GCOD. Energy storage components eligible to meet this RFP’s Fast Frequency Response need must be capable of being 100% charged from the grid from the GCOD.

For energy storage components that are paired with generating facilities, during the period that allows the Project to maximize and capture the benefits of the federal Investment Tax Credit (“ITC”) for the energy storage system, the Proposer can design and specify the amount, if any, of grid charging for the energy storage system. However, after the 5-year ITC recapture period has lapsed, any energy storage component paired with generation must be capable of being 100% charged from the grid at the direction of the Company.

Energy storage components that are paired with generating facilities that are incapable of claiming the ITC must be capable of being 100% charged from the grid from the GCOD.

For example, during the 5-year ITC recapture period, a Proposer coupling an energy storage component with a solar facility can specify that its Facility can be charged from the grid (at the direction of the Company) up to 20% of its annual total energy input. After the 5-year ITC recapture period has lapsed, the energy storage component must be capable of being charged up to 100% of its total energy input from the grid at the direction of the Company.

1.2.12 Proposals for standalone energy storage will provide the Storage Requirement and/or Contingency Storage to the Company during times that are deemed by the Company to be beneficial to the system. These facilities must be connected to the grid at all times, with the exception of allowed maintenance periods. Proposals for the Storage Requirement must be sized to support the Facility's Allowed Capacity (in MW) for a minimum of four (4) continuous hours throughout the term of the ESPPA. Any Contingency Storage component must be at least 5 MW and sized to provide a minimum of 30 continuous minutes at the proposed MW amount throughout the term of the ESPPA.

For example, for a 10 MW facility, the energy storage component must be able to store and discharge at least 40 MWh of energy in a cycle throughout the term of the ESPPA. If a project proposes an additional 5 MW of Contingency Storage this component must be able to store and discharge at least 2.5 MWh of energy in a cycle throughout the term of the ESPPA.

1.2.13 The amount of energy discharged from any energy storage component (standalone or one paired with a generation component) in a year will be limited to the energy storage contract capacity (in MWh) multiplied by the number of Days in that year.

1.2.14 The following GCOD shall apply:

1.2.14.1 Proposals for standalone energy storage or generation paired with energy storage that intend such storage to meet the Company's Storage Requirement need must specify a GCOD no later than June 1, 2022.

1.2.14.2 Proposals for generation only or generation paired with energy storage not intended to meet the Company's Storage Requirement need must specify a GCOD no later than December 31, 2025. However, Proposals with earlier GCODs will be given preference in scoring.

Project Technology	Generation Only	Generation Paired w/ Storage (not intended to meet Storage Requirement need)	Generation Paired w/ Storage (intended to meet Storage Requirement need)	Standalone Storage
GCOD	12/31/25	12/31/25	06/01/22	06/01/22
Grid Charging	N/A	As-bid during ITC period; 100% after ITC period	As-bid during ITC period; 100% after ITC period	100% at GCOD

1.2.15 A Proposer's GCOD set forth in its Proposal will be the GCOD in any resulting PPA⁸ if such Proposal is selected to the Final Award Group. Proposers will not be able to request a change in the GCOD set forth in their Proposals.

⁸ PPA throughout this RFP refers to either/both the RDG PPA or ESPPA.

- 1.2.16 If selected, Proposers will be responsible for all costs throughout the term of the PPA, including but not limited to Project development, completion of an Interconnection Requirements Study (“IRS”), the cost of conducting a greenhouse gas analysis, land acquisition, permitting, financing, construction of the Facility and all Interconnection Facilities, and operations and maintenance (“O&M”).
- 1.2.17 If selected, Proposers will be solely responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the PPA, as described in Attachment G, Section 7 of the RDG PPA or ESPPA.
- 1.2.18 If selected, Proposers shall pursue all available applicable federal and state tax credits. Proposal pricing must be set to incorporate the benefit of such available federal tax credits. However, to mitigate the risk on Proposers due solely to potential changes to the state’s tax credit law before a selected project reaches commercial operations, Proposal pricing shall be set without including any state tax credits. If a Proposal is selected, the PPA for the project will require the Proposer to pursue the maximum available state tax credit and remit tax credit proceeds to the Company for customers’ benefit as described in Attachment J of the RDG PPA or ESPPA. The PPA will also provide that the Proposer will be responsible for payment of liquidated damages for failure to pursue the state tax credit.
- 1.2.19 Each Proposal submitted in response to this RFP must represent a Project that is capable of meeting the requirements of this RFP without having to rely on a proposed change in law, rule, or regulation.

1.3 Competitive Bidding Framework

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

1.4 Role of the Independent Observer

- 1.4.1 Part III.C.1 of the Framework sets forth the circumstances under which an Independent Observer is required in a competitive bidding process. The PUC has retained an Independent Observer both to advise and monitor the process for this RFP. All phases of the RFP process will be subject to the Independent Observer’s oversight, and the Independent Observer will coordinate with PUC staff throughout the RFP process to ensure that the RFP is undertaken in a fair and unbiased manner. In particular, the Company will review and discuss with the Independent Observer decisions regarding the evaluation, disqualification, non-selection, and selection of Proposals.
- 1.4.2 The role of the Independent Observer, as described in the Framework, will include but is not limited to:
 - Monitor all steps in the competitive bidding process
 - Monitor communications (and communications protocols) with Proposers

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

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

1.5 Communications Between the Company and Proposers – Code of Conduct Procedures Manual

- 1.5.1 Communications and other procedures under this RFP are governed by the “Code of Conduct Procedures Manual,” (also referred to as the “Procedures Manual”) developed by the Company as required by the Framework, and attached as Appendix C.
- 1.5.2 All pre-Proposal communication with prospective Proposers will be conducted via the Company’s RFP website, Electronic Procurement Platform and/or electronic mail (“Email”) through the address specified in Section 1.6 (the “RFP Email Address”). Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Company’s RFP website, or sent through either Email or the Electronic Procurement Platform to registered individuals. The Company reserves the right to respond only to comments and questions it deems are appropriate and relevant to the RFP. Proposers are advised to submit questions no later than fifteen Days before the Proposal Due Date (RFP Schedule in Section 3.1, Items 7 and 8). The Company will endeavor to respond to all questions no later than five Days before the Proposal Due Date.
- 1.5.3 After Proposals have been submitted, the Company may contact individual Proposers for purposes of clarifying their Proposal(s).
- 1.5.4 Any confidential information deemed by the Company, in its sole discretion, to be appropriate to share, will only be transmitted to the requesting party after receipt of a fully executed Stage 2 Mutual Confidentiality and Non-Disclosure Agreement (“NDA”). See Appendix E.
- 1.5.5 Except as expressly permitted and in the manner prescribed in the Procedures Manual, any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP is prohibited.

1.6 Company Contact for Proposals

The primary contact for this RFP is:

Ken Horita
Energy Contract Manager
Hawaiian Electric Company, Inc.
Central Pacific Plaza Building, Suite 2100
220 South King Street
Honolulu, Hawai‘i 96813

RFP Email Address: oahuvariablerfp@hawaiianelectric.com

1.7 Proposal Submission Requirements

- 1.7.1 All Proposals must be prepared and submitted in accordance with the procedures and format specified in the RFP. Proposers are required to respond to all questions and provide all information requested in the RFP, as applicable, and only via the communication methods specified in the RFP.
- 1.7.2 Detailed requirements regarding the form, submission, organization and information for the Proposal are set forth in Chapter 3 and Appendix B.
- 1.7.3 In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other unaffiliated person or entity. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company’s negotiating positions will not be shared with other Proposers or their respective Representatives.

In addition, in submitting a Proposal, a Proposer will be required to provide Company with its legal counsel’s written certification in the form attached as Appendix B Attachment 1 certifying in relevant part that irrespective of any proposer’s direction, waiver, or request to the contrary, that the attorney will not share a proposer’s confidential information associated with such proposer with others, including, but not limited to, such information such as a proposer’s or Company’s negotiating positions. If legal counsel represents multiple unaffiliated proposers whose Proposals are selected for the Final Award Group, such counsel will also be required to submit a similar certification at the conclusion of power purchase agreement negotiations that he or she has not shared a proposer’s confidential information or the Company’s confidential information associated with such proposer with others, including but not limited to, such information as the a proposer’s or Company’s negotiating positions.

- 1.7.4 Proposals must be submitted via the Electronic Procurement Platform by 2:00 pm Hawai‘i Standard Time (HST) on the Proposal Due Date shown in the RFP Schedule in

Section 3.1. No hard copies of the Proposals will be accepted.⁹ It is the Proposer's sole responsibility to ensure that complete and accurate information has been submitted on time and within the instructions of this RFP. With this assurance, Company shall be entitled to rely upon the completeness and accuracy of every Proposal. Any errors identified by the Proposer or Company after the Proposal Due Date has passed may jeopardize further consideration and success of the Proposal. If an error or errors are later identified, Company, in consultation with the Independent Observer, may permit the error(s) to be corrected without further revision to the Proposal, or may require Proposer to adhere to terms of the Proposal as submitted without correction. Additionally, and in Company's sole discretion, if such error(s) would materially affect the Priority List or Final Award Group, Company reserves the right, in consultation with the Independent Observer, to remove or disqualify a Proposal upon discovery of the material error(s). The Proposer of such Proposal shall bear the full responsibility for such error(s) and shall have no recourse against Company's decision to address Proposal error(s), including removal or disqualification. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by milestone (7) Self-Build and Affiliate Proposal Due Date in Section 3.1 Table 1. The PowerAdvocate Platform automatically closes further submissions after milestone (8) IPP Proposal Due Date in Table 1.

1.8 **Proposal Fee**

- 1.8.1 IPP and Affiliate proposers are required to tender a non-refundable Proposal Fee of \$10,000 for each Proposal submitted. IPP and Affiliate proposers who propose projects located at the Company-owned site identified in Section 3.11.2 will have their Proposal Fee waived.
- 1.8.2 Proposers may submit multiple Proposal variations for a Project for a single Proposal Fee. If such Proposals are on different Sites or for different generation technologies, a separate Proposal Fee must be paid for each Proposal. The method of submitting multiple Proposals within this RFP is described in Appendix B.
- 1.8.3 Proposers may also submit up to a total of four (4) variations of their Proposal, one variation of which is the base variation of the Proposal. In addition, for each of the 4 variations the Proposer may propose an additional variation with Contingency Storage, where the only change is the addition of a Contingency Storage component and any needed changes to account for the addition of the Contingency Storage.¹⁰ Variations of pricing terms, Facility size, with/without storage, or differing levels of grid-charging capabilities can be offered. All variations within a Proposal must be proposed on the same Site and using the same generation technology to avoid paying a separate Proposal Fee. Whether or not a separate Proposal Fee is required, all unique information for each

⁹ Proposals for the SBO(s) and Affiliate Proposals have additional submission requirements to the PUC specified in Section 1.9 below.

¹⁰ For each variation that includes Contingency Storage, it is to the Proposer's advantage to offer an identical variation without Contingency Storage as Proposals with Contingency Storage must be selected through both evaluation processes (energy/capacity and Contingency Storage) in order to advance to the Final Award Group.

variation of a Proposal, no matter how minor such variation is, must be clearly identified and separated by following the instructions in Appendix B Section 3.

- 1.8.4 The Proposal Fee must be in the form of a cashier's check or equivalent from a U.S.-chartered bank made payable to "Hawaiian Electric Company, Inc." and must be delivered and received by the Company by 2:00 pm (HST) on the Proposal Due Date shown in the RFP Schedule in Section 3.1. The check should include a reference to the Proposal(s) for which the Proposal Fee is being provided. Proposers are strongly encouraged to utilize a delivery service method that provides proof of delivery to validate delivery date and time.

If the Proposal Fee is delivered by U.S. Postal Service (with registered, certified, receipt verification), the Proposer shall address it to:

Ken Horita
Energy Contract Manager
Hawaiian Electric Company, Inc.
Mail Code CP21-IU
PO Box 2750
Honolulu, Hawai'i 96840

If the Proposal Fee is delivered in person, or via an alternative registered, certified delivery service, the Proposer shall use the address specified in Section 1.6.

1.9 **Procedures for the Self-Build or Affiliate Proposals**

The Competitive Bidding Framework allows the Company the option to offer a Proposal(s) in response to this RFP ("Self-Build Option" or "SBO"). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the SBO or members, agents or consultants of the Company formulating the SBO (the "Self-Build Team"); and (2) preferential access to proprietary information of the Self-Build Team. These requirements are specified in the Code of Conduct required under the Framework and implemented by certain rules and procedures found in the Procedures Manual submitted to the PUC in Docket No. 2017-0352 on April 1, 2019. A copy of the Procedures Manual is attached as Appendix C.

The Competitive Bidding Framework also allows Affiliates of the Company to submit Proposals to RFPs issued by the Company. All Self-Build and Affiliate Proposals are subject to the Company's Code of Conduct and the Procedures Manual. Affiliate Proposals are also subject to any applicable Affiliate Transaction Requirements issued by the PUC in Decision and Order No. 35962 on December 19, 2018, and subsequently modified by Order No. 36112, issued on January 24, 2019, in Docket No. 2018-0065. Affiliate Proposals will be treated identically to an IPP Proposal, except that they are due at the same time as any Self-Build Proposal(s).

The Independent Observer will monitor adherence to the Company's Code of Conduct and the Procedures Manual. Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Proposal for the SBO(s) and Affiliate Proposals be submitted electronically through the Electronic Procurement Platform and filed with the PUC in hard copy a minimum of one (1) Day before other Proposals are due. (A Proposal for the SBO or Affiliate will be uploaded into the Electronic Procurement Platform in the same manner Proposals from other Proposers are uploaded. The Energy Contract Manager, in consultation with the Independent Observer, will confirm that the Self-Build and Affiliate Proposals are timestamped by Milestone (7) Self-Build and Affiliate Proposal Due Date in RFP Table 1.)

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

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

At the core of an SBO Proposal are its total project capital cost and any associated annual operations and maintenance ("O&M") costs. During the RFP's initial pricing evaluation step, these capital costs¹¹ and O&M costs will be used in a revenue requirement calculation to determine the estimated revenues needed from customers which would allow the Company to recover the total cost of the project. The SBO revenue requirements are then used in a leveled price calculation to determine a Levelized Energy Price ("LEP") (\$/MWh), if for energy needs, or to determine an Energy Storage

¹¹ Self-Build Proposals will be required to provide a table identifying project costs by year. These capital costs should be all inclusive, including but not limited to costs associated with equipment, Engineering, Procurement, and Construction ("EPC"), interconnection, overhead, and Allowance for Funds Used During Construction ("AFUDC").

Only Levelized Price (\$/MWh), if for storage only or for Contingency Storage (\$/MW). These price calculations will then be used for comparison to IPP Proposals.

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

In response to the Storage Requirement and Fast Frequency Response needs, the Self-Build Team will only be permitted to submit a Proposal or group of Proposals (with up to a total of 4 variations for each Proposal) which collectively address this need, and no more. These Proposals are intended to serve as the Company's Parallel Plan, as described in the PUC's Framework for Competitive Bidding.¹² The Self-Build team will be allowed to submit one (1) additional Proposal (with up to a total of 4 variations) in response to the energy need.

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

1.10 Dispute Resolution Process

- 1.10.1 If disputes arise under the RFP, the provisions of Section 1.10 and the dispute resolution process established in the Framework will control. See Part V of the Framework.
- 1.10.2 Proposers who challenge or contest any aspect of the RFP process must first attempt to resolve their concerns with the Company and the Independent Observer ("Initial Meeting"). The Independent Observer will seek to work cooperatively with the parties to resolve any disputes or pending issues and may offer to mediate the Initial Meeting to resolve disputes prior to such issues being presented to the PUC.
- 1.10.3 Any and all disputes arising out of or relating to the RFP which remain unresolved for a period of twenty (20) Days after the Initial Meeting takes place may, upon the agreement of the Proposer and the Company, be submitted to confidential Mediation in Honolulu, Hawai'i, pursuant to and in accordance with the Mediation Rules, Procedures, and Protocols of Dispute Prevention Resolution, Inc. ("DPR") (or its successor) or, in its absence, the American Arbitration Association then in effect ("Mediation"). The Mediation will be administered by DPR. If the parties agree to submit the dispute to Mediation, the Proposer and the Company shall each pay fifty percent (50%) of the cost of the Mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own Mediation costs and attorney's fees.
- 1.10.4 If settlement of the dispute is not reached within sixty (60) Days after commencement of the Mediation, or if after the Initial Meeting, the parties do not agree to submit any

¹² See Decision and Order No. 23121, filed December 8, 2006, in Docket No. 03-0372.

unresolved disputes to Mediation, then as provided in the Framework, the Proposer may submit the dispute to the PUC in accordance with the Framework.

- 1.10.5 In accordance with the Framework, the PUC will serve as the arbiter of last resort for any disputes relating to this RFP involving Proposers. The PUC will use an informal expedited dispute resolution process to resolve the dispute within thirty (30) Days, as described in Parts III.B.8 and V of the Framework.¹³ There will be no right to hearing or appeal from this informal expedited dispute resolution process.
- 1.10.6 If any Proposer initiates a dispute resolution process for any dispute or claim arising under or relating to this RFP, other than that permitted by the Framework and Section 1.10 (e.g., a court proceeding), then such Proposer shall be responsible for any and all attorneys' fees and costs that may be incurred by the Company or the PUC in order to resolve such claim.

1.11 **No Protest or Appeal**

Subject to Section 1.10, no Proposer or other person will have the right to protest or appeal any award of a Project made by the Company.

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

1.12 **Modification or Cancellation of the Solicitation Process**

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

¹³ The informal expedited dispute resolution process does not apply to PUC review of contracts that result from the RFP. See Decision and Order No. 23121 at 34-35. Further, the informal expedited dispute resolution process does not apply to the Framework's process relating to issuance of a draft and final RFP, and/or to the PUC approval of the RFP because: (1) the Framework (and the RFP) set forth specific processes whereby interested parties may provide input through the submission of comments; and (2) the Framework's dispute resolution process applies to "Bidders" and there are no "Bidders" at this stage in the RFP process.

Chapter 2: Resource Needs and Requirements

2.1 Performance Standards

Proposals must meet the attributes set forth in this RFP and the requirements of the RDG PPA for proposals that include a generation component or the ESPPA for standalone energy storage proposals. This RFP and the RDG PPA or ESPPA set forth the minimum requirements that all Proposals must satisfy to be eligible for consideration in this RFP. Additional Performance Standards may be required based on the results of the IRS.

Facilities must be able to operate in grid-forming mode when directed by the Company as defined in the RDG PPA or ESPPA.

Black start capability is preferred for standalone energy storage or energy storage paired with generation facilities. Proposals will need to identify¹⁴ any incremental costs to enable their facility to be black start capable, if not already enabled.

For standalone energy storage or energy storage paired with generation facilities, the functionality and characteristics of the storage must be maintained throughout the term of the PPA. To be clear, Proposers may not propose any degradation for either capacity or efficiency in their Proposals.

2.2 Transmission System Information

- 2.2.1 Company information regarding an initial assessment of potential MW capacity of 46 kV and 138 kV transmission-level circuits providing possible points of interconnection has been developed for Sites included in the Land Request for Information (“Land RFI”) as described in Section 3.11 and will be made available to Proposers only after execution of the Stage 2 NDA.¹⁵ Proposers should perform their own evaluation of project locations, and the Company does not guarantee any project output or ability to connect based on such information. Prior to submitting a proposal, Proposers are encouraged to inquire about the viability of interconnecting a proposed Project at a specific location. For example, a Project must interconnect through a minimum of two transmission lines and no single point of failure resulting in a loss of more than 135 MW; however, depending on but not limited to, factors such as location of the Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies, the Project may require more than two transmission line terminations. Please direct questions to the RFP Email Address in Section 1.6.
- 2.2.2 While the Land RFI provides information regarding an initial assessment of potential MW capacity and possible points of interconnection for transmission-level circuits, Projects interconnecting to 138 kV circuits require additional analyses. The available capacity of a transmission line is dependent on many factors including location of the

¹⁴ If black start is not already enabled for the Proposal, any additional costs necessary to enable black start will be identified in the submission instructions defined in Appendix B.

¹⁵ Appendix E contains the Mutual Confidentiality and Non-Disclosure Agreement for this RFP.

Point of Interconnection, system load, generating unit dispatch, and transmission line contingencies. As a result, load flow analyses are required to confirm the available line capacities for various scenarios. Detailed load flow analyses will be performed as part of the project selection process. Prior to the RFP, developers may inquire as to viability of proposed real project locations for interconnection as well as specific requirements of that proposed 138 kV interconnection.

- 2.2.3 For Projects interconnecting to 46 kV circuits, the proposed Project output cannot exceed the available hosting capacity limit during the daytime hours of 8am to 5pm.¹⁶ The proposed Project output at all other hours (5pm to 8am) cannot exceed the identified conductor limit (less any existing or expected generation sources available during those hours prior to the GCOD). For example, a solar resource paired with storage may interconnect to a circuit with a stated hosting capacity of zero provided that no energy is exported during the hours of 8am and 5pm and the export of power does not exceed the conductor limit after 5pm. Specifically, as it pertains to interconnection to the 46 kV system, Proposers may inquire regarding the viability of upgrading 46 kV conductors to increase available capacity based on a specific location (direct questions to the RFP Email Address in Section 1.6). Prior to the RFP, developers may inquire as to viability of proposed real project locations for interconnection.
- 2.2.4 A detailed IRS, when performed, may reveal other adverse system impacts that may further limit a Project's ability to interconnect and/or further limit the net output of the Facility without upgrades.

2.3 **Interconnection to the Company System**

- 2.3.1 The Interconnection Facilities includes both: (1) Seller-Owned Interconnection Facilities; and (2) Company-Owned Interconnection Facilities.
- 2.3.2 All Proposals must include a description of the Proposer's plan to transmit power from the Facility to the Company System. The proposed Interconnection Facilities must be compatible with the Company System. In the design, Projects must adequately consider Company requirements to address impacts on the performance and reliability of the Company System.
 - 2.3.2.1 In addition to the Performance Standards and findings of the IRS, the design of the Interconnection Facilities, including power rating, Point(s) of Interconnection with the Company System, and scheme of interconnection, must meet Company standards. The Company will provide its construction standards and procedures to the Proposer (Engineer, Procure, Construct Specifications for Hawaiian Electric Power Lines and Substations) if requested via the RFP Email Address in Section 1.6 and upon the execution of a Stage 2 NDA as specified in Section 3.12.1. These specifications are

¹⁶ The available hosting capacity is not a final determination whether it is feasible to interconnect a Proposed Facility. The available hosting capacity provided in either the Land RFI or in response to inquiries to the Company represent the power system's conditions at the time the analysis was conducted. This analysis examined steady-state thermal capacity and voltage issues during daytime minimum loading conditions only.

intended to illustrate the scope of work typically required to administer and perform the design and construction of a Hawaiian Electric substation and power line.

- 2.3.2.2 Interconnection Facilities must be designed such that, with the addition of the Facility, the Company System can meet all relevant Transmission Planning Criteria¹⁷ and any amendments thereto considering the Allowed Capacity and any Contingency Storage.
- 2.3.3 Tariff Rule No. 19, a copy of which is attached as Appendix I, establishes provisions for Interconnection and Transmission Upgrades. The tariff provisions are intended to simplify the rules regarding who pays for, installs, owns, and operates interconnection facilities in the context of competitive bidding. Proposers will be required to build the Company-Owned Interconnection Facilities, including the switching station and line work, except for any work in the Company's existing energized facilities and the final tap. Construction of Company-Owned Interconnection Facilities by the Proposer must comply with industry standards, laws, rules and licensing requirements, as well as the Company's specific construction standards and procedures that the Company will provide upon request. (See Section 2.3.1.) The Company uses the breaker-and-a-half scheme for its transmission switching station as shown in Attachment A of Appendix I – Rule 19 Tariff. Proposers should follow this scheme for purposes of their estimates.
- 2.3.4 The Proposer shall be responsible for all costs required to interconnect a Project to the Company System, including all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities.
- 2.3.5 Proposers are required to include in their pricing proposal all costs for interconnection and transmission equipment or, if applicable, 46 kV circuit conductor upgrades expected to be required between their Facility and their proposed Point of Interconnection. Appendix H includes information related to Company-Owned Interconnection Facilities and costs that may be helpful to Proposers. Selected Proposers shall be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities, whether or not such costs exceed the costs set forth in a Proposer's Proposal. No adjustments will be allowed to the proposed price in a Proposal if actual costs for Interconnection Facilities exceed the amounts proposed.
- 2.3.6 Proposers are required to include in their pricing proposal all costs for distribution-level service interconnection for station power.
- 2.3.7 All Projects will be screened for general readiness to comply with the requirements for interconnection. Proposals selected to the Final Award Group will be subject to further study in the form of an IRS. The IRS process is further described in Section 5.1. The results of the completed IRS, as well as any mitigation measures identified, will be incorporated into the terms and conditions of a final executed PPA.

¹⁷ Transmission Planning Criteria are further described in the PSIP beginning on page O-11 of Appendix O.

Chapter 3: Instructions to Proposers

3.1 Schedule for the Proposal Process

Table 1 sets forth the proposed schedule for the proposal process (the “RFP Schedule”). The RFP Schedule is subject to PUC approval. The Company reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule prior to the RFP Proposal Due Date will be posted to the RFP website. Changes to the RFP Schedule after the Proposal Due Date will be communicated via Email or via the Electronic Procurement Platform to the Proposers.

Table 1
Proposed RFP Schedule

Milestone	Schedule Dates
(1) Status Conference held	February 7, 2019
(2) Draft RFP filed	April 1, 2019
(3) Status Conferences held	April 18, 2019 May 2, 2019
(4) Commission solicited Stakeholder and Company Comments by	May 20, 2019
(5) Proposed Final RFP filed	July 10, 2019
(6) Final RFP is Issued	August 22, 2019
(7) Self-Build and Affiliate Proposal Due Date	November 4, 2019 at 2:00 pm HST ¹⁸
(8) IPP Proposal Due Date	November 5, 2019 at 2:00 pm HST
(9) Selection of Priority List	January 17, 2020
(10) BAFOs Due	January 24, 2020
(11) Selection of Final Award Group	May 8, 2020
(12) Contract Negotiations Start	May 15, 2020

3.2 Company RFP Website/Electronic Procurement Platform

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

www.hawaiianelectric.com/competitivebidding

The Company will provide general notices, updates, schedules and other information on the RFP website throughout the process. Proposers should check the website frequently

¹⁸ An SBO or Affiliate Proposal must also be filed in hard copy form with the PUC a minimum of one (1) Day before other Proposals are due.

to stay abreast of any new developments. This website will also contain the link to the Electronic Procurement Platform employed by the Company for the receipt of Proposals.

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

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

See Appendix D for user information on and screenshots of PowerAdvocate’s Sourcing Intelligence procurement platform.

3.3 **Information Conferences**

The Commission held three status conferences on February 7, 2019, April 18, 2019, and May 2, 2019 to allow the Companies to propose plans for their Stage 2 RFPs and to respond to questions from the Commission, the Consumer Advocate and stakeholders. The Companies’ presentations were made available on the Companies’ RFP Website. The Commission also solicited comments from stakeholders on the Companies’ Stage 2 Draft RFPs on May 6, 2019 before releasing its Order No. 36356 providing guidance on the draft RFPs for dispatchable and renewable generation on June 10, 2019. On July 5, 2019, the Commission issued Order No. 36406 providing further clarification of Order No. 36356.

Prospective Proposers may continue submitting written questions regarding the RFP to the RFP Email Address set forth in Section 1.6. The Company will endeavor to address all questions that will be helpful to prospective Proposers via a Q&A section on the RFP website.

Prospective Proposers should review the RFP Website’s Q&A section prior to submission of their Proposal. Duplicate questions will not be answered.

3.4 **Preparation of Proposals**

- 3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer’s Proposal, and the Proposer’s anticipated performance under the RDG PPA or ESPPA. It is the Proposer’s responsibility to ensure it understands all requirements of the RFP, to seek clarification if the RFP’s requirements or Company’s request is not clear, and to ask for any confirmation of receipt of submission of information. Under Section 1.7.4, the Proposer is solely responsible for all errors in its Proposal(s). The Company will not accept any explanation by a Proposer that it was incumbent on the Company to catch any error.
- 3.4.2 Proposers shall rely only on official information provided by the Company in this RFP when preparing their Proposal. The Company will rely only on the information included

in the Proposals and additional information solicited by the Company to Proposers in the format requested, to evaluate the Proposals received. Evaluation will be based on the stated information in this RFP and on information submitted by Proposers in response to this RFP. Proposal submissions should not reference previous RFP submissions for support. Proposers also should not assume that any previous RFP decisions/preferences will also pertain to this RFP.

- 3.4.3 Each Proposer shall be solely responsible for, and shall bear all of its costs incurred in the preparation of its Proposal and/or its participation in this RFP, including, but not limited to, all costs incurred with respect to the following: (1) review of the RFP documents; (2) meetings with the Company; (3) Site visits; (4) third-party consultant consultation; and (5) investigation and research relating to its Proposal and this RFP. The Company will not reimburse any Proposer for any such costs, including the selected Proposer(s).
- 3.4.4 Each Proposal must contain the full name and business address of the Proposer and must be signed by an authorized officer or agent¹⁹ of the Proposer.

3.5 Organization of the Proposal

The Proposal must be organized as specified in Appendix B. It is the Proposer's responsibility to ensure the information requested in this RFP is submitted and contained within the defined Proposal sections as specified in Appendix B.

3.6 Proposal Limitations

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

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

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

¹⁹ 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.

- The Company reserves the right, in consultation with the Independent Observer, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided in this RFP, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the Proposal Due Date.
- All material submitted in response to this RFP will become the sole property of the Company, subject to the terms of the Stage 2 NDA.

3.7 Proposal Compliance and Bases for Disqualification

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

- Any unsolicited contact by a Proposer or prospective Proposer with personnel of the Company pertaining to this RFP as described in Section 1.5.5.
- Any illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal Review process.
- The Proposal does not meet one or more of the Eligibility Requirements specified in Section 4.2.
- The Proposal does not meet one or more of the Threshold Requirements specified in Section 4.3.
- The Proposal is deemed to be unacceptable through a fatal flaws analysis as described in Section 4.4.2.
- The Proposer does not respond to a Company request for additional information to clarify the contents of its Proposal within the timelines specified by the Company.
- The Proposal contains misrepresentations or errors.

3.8 Power Purchase Agreement

- 3.8.1 The Power Purchase Agreement for proposals selected under this RFP that include a generation component will be in the form of the RDG PPA, attached as Appendix J and Appendix L.
- 3.8.2 The Power Purchase Agreement for standalone energy storage proposals selected under this RFP will be in the form of the Company's ESPPA, attached as Appendix K.
- 3.8.3 If selected, any Affiliate Proposers will be required to enter into the RDG PPA or ESPPA with the Company.
- 3.8.4 If selected, a Self-Build Proposer will not be required to enter into a PPA or ESPPA with the Company. However, the Self-Build Proposer will be held to the proposed

modifications to the RDG PPA and/or ESPPA, if any, it submits as part of the SBO in accordance with Section 3.8.7. Moreover, the SBO will be held to the same performance metrics and milestones set forth in the RDG PPA and/or ESPPA to the same extent as all Proposers, as attested to in the SBO's Appendix G Attachment 1, Self-Build Option Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause ("PPAC") or other appropriate rate adjustment mechanisms.

To retain the benefits of operational flexibility for a Company-owned facility, the SBO will be permitted to adjust operational requirements and performance metrics with the approval of the PUC. The process for adjustment would be similar to a negotiated amendment to a PPA with PUC approval.

- 3.8.5 In general, under the RDG PPA, payment to the Seller contains two parts: a Lump Sum Payment component to cover the fixed costs of the Project and a Price for Purchase of Electric Energy component (\$/MWh component) to cover variable operations and maintenance costs (if applicable, depending on the resource). In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage (if applicable) and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch. Company shall not be obligated to accept nor shall it be required to pay for test energy generated by the Facility during acceptance testing or other test conditions.
- 3.8.6 In general, under the ESPPA, payment to the Seller consists of a Lump Sum Payment to cover dispatchability and availability of the Facility. In return, the Seller shall guarantee minimum performance and availability metrics to ensure that the Facility is maintained and available for energy storage and dispatch, as well as provide an indication of the available energy in near real-time for the Company's dispatch.
- 3.8.7 As described in Section 2.1, the Performance Standards identified in the applicable RDG PPAs or the ESPPA establish the minimum requirements a Proposal must satisfy to be eligible for consideration in this RFP. A proposed Facility's ability to meet these Performance Standards is both a Threshold Requirement and a Non-Price Related Criteria under Sections 4.3 and 4.4.2, respectively. As such, the Performance Standards included in the RDG PPAs or ESPPA are non-negotiable by a Self-Build Proposer or any other Proposer. Proposers may propose modifications to other sections of the RDG PPA or ESPPA but are encouraged to accept such terms as written in order to expedite the overall RFP process and potential contract negotiations. As a component of their respective Proposals, a Self-Build Proposer or any other Proposers who elect to propose modifications shall provide a Microsoft Word red-line version of the relevant document identifying specific proposed modifications to the model language that the Proposer is agreeable to, as well as a detailed explanation and supporting rationale for each modification.
 - 3.8.7.1 General comments, drafting notes and footnotes such as "parties to discuss" are unacceptable and will be considered non-responsive. Proposed modifications to the RDG PPA and ESPPA will be evaluated as a non-price evaluation criterion as further described

in Section 4.4.2. In order to facilitate this process, the Company will make available electronic versions of the model agreements on the RFP website and through the PowerAdvocate platform for the RFP. Any proposed modifications to the RDG PPA or ESPPA will be subject to negotiation between the Company and the Final Award Group. As stated above, since general comments, drafting notes, and footnotes without accompanying specific proposed language modifications are unacceptable and non-responsive, the Company will not negotiate provisions simply marked by such general comments, drafting notes and footnotes.

3.8.7.2 The Company has an interest in maintaining consistency for certain provisions of the RDG PPAs and ESPPA, such as the calculation of availability and payment terms. Therefore, for such provisions, the Company will endeavor to negotiate similar and consistent language across PPAs for the Final Award Group.

3.8.8 Proposals that do not include specific proposed modifications to the attached RDG PPAs or ESPPA will be deemed to have accepted the RDG PPA or ESPPA in its entirety.

3.9 **Pricing Requirements**

3.9.1 Proposers must submit pricing for each of their variations associated with each Proposal (if variations as described in Section 1.8.2 and 1.8.3 are submitted). Proposers are responsible for understanding the terms of the RDG PPA or ESPPA. Pricing cannot be specified as contingent upon other factors (e.g., changes to federal tax policy or receiving all Investment Tax Credits assumed).

3.9.2 Escalation in pricing over the term of the RDG PPA or the term of the ESPPA is prohibited.

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

3.9.4 For projects that include a generation component, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount for full dispatchability of the Facility. Payment will be made in monthly increments.
- **Price for Purchase of Electric Energy (\$/MWh):** Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).

- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the portion of the Lump Sum Payment attributable to the Contingency Storage component.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** For energy storage paired with generation facilities, if the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For generation facilities that include Contingency Storage, the portion of the total project cost attributable to the Contingency Storage component.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

3.9.5 For standalone energy storage projects, the Proposer's Response Package must include the following prices for each Proposal (and variation):

For IPP or Affiliate proposals:

- **Lump Sum Payment (\$/year):** Payment amount assuming full availability and dispatchability. Payment will be made in monthly increments.
- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For standalone energy storage projects that include Contingency Storage, the portion of the Lump Sum Payment attributable to the Contingency Storage component.

For Self-Build Proposals:

- **Total Project Capital Costs (\$/year):** Total capital costs for the project (identified by year).
- **Annual O&M Costs (\$/year):** Initial year operations and maintenance costs, annual escalation rate.
- **Annual Revenue Requirement (\$/year):** Annual revenue requirements (ARR) calculated for each year.
- **Black Start (\$):** If the Facility is not already black start enabled, the incremental cost required to enable black start.
- **Contingency Storage (\$/year):** For standalone energy storage projects that include Contingency Storage, the portion of the total project cost attributable to the Contingency Storage component.

See Appendix G for descriptions and detail on the Total Project Capital Costs, Annual O&M Costs and Annual Revenue Requirement for the Self-Build Proposals.

- 3.9.6 As identified in the Schedule of Defined Terms in the PPA under “BESS Allocated Portion of the Lump Sum Payment”, the allocated portion of the Lump Sum Payment specified for energy storage for the Facility is 50% and shall be a non-negotiable percentage in the PPA.

3.10 Project Description

- 3.10.1 Proposals that include a generation component are required to provide a NEP RFP Projection for the Project. The NEP RFP Projection associated with the proposed Project represents the estimated annual net energy (in MWh) that could be produced by the Facility and delivered to the Point of Interconnection over a ten-year period with a probability of exceedance of 95%. If the proposed Project includes an energy storage component, it should not be factored into the NEP RFP Projection. Any losses that may be incurred from energy being stored and then discharged from the energy storage component or any energy that may be diverted to the energy storage component due to generation in excess of the Facility’s Allowed Capacity should not be factored into the NEP RFP Projection. The NEP RFP Projection should assume that all energy is being directly exported to the Hawaiian Electric System. The NEP RFP Projection will be used

in the RFP evaluation process and therefore Proposers will be held to their provided value.²⁰

- 3.10.2 Proposers must provide all information pertaining to the design, development, and construction of the Interconnection Facilities as specified in Appendix B.
- 3.10.3 Each Proposer must also agree to provide Project financial information, including proposed Project finance structure information specified in Appendix B. Such information will be used to evaluate Threshold Requirements and non-price criteria (e.g., Financial Viability of Proposer, Financial Strength and Financing Plan, State of Project Development and Schedule) set forth in Sections 4.3 and 4.4.2. Upon selection, the Final Award Group may be requested to provide further detailed cost information if requested by the PUC or the Consumer Advocate as part of the PPA approval process. If requested, such information would be provided to the PUC, Consumer Advocate and Company pursuant to a protective order in the docket.
- 3.10.4 The Proposer agrees that no material changes or additions to the Facility from what is submitted in its Proposal will be made without the Proposer first having obtained prior written consent from the Company. Evaluation of all Proposals in this RFP is based on the information submitted in each Proposal at the Proposal Due Date. If any Proposer requests any Proposal information to be changed after that date, the Company, in consultation with the Independent Observer, and in consideration of whether the evaluation is affected, will determine whether the change is permitted.

3.11 **Sites Identified by the Company**

- 3.11.1 As an alternative to a Site identified by the Proposer, the Company has identified potential Sites where landowners have expressed a willingness to negotiate a lease or purchase of the land to support a renewable energy project. These Sites were identified through a Land RFI. Proposers will be responsible for working directly with the land owner and must secure Site Control with such land owner prior to submitting a Proposal. Land RFI information is available to interested parties who sign the Stage 2 NDA. The Land RFI is further described in Appendix F.

Proposers are not required to select a Site identified in the Land RFI and as noted above may propose any Site for a Project. A Proposer may ask the Company questions as set forth in Section 2.2.1 if it would like to obtain similar information about the viability of interconnection at its proposed Site as identified for the Land RFI parcels.

²⁰ If a Proposal is selected to the Final Award Group and a PPA is executed between the Company and the Proposer, the NEP RFP Projection will be further evaluated at several steps throughout the process as set forth in the RDG PPA, and adjustments to the Lump Sum Payment will be made accordingly. Additionally, because the Company will rely on an accurate representation of the NEP RFP Projection in the RFP evaluation, a one-time liquidated damage as described in the RDG PPA will be assessed if the First NEP benchmark is less than the Proposer's NEP RFP Projection. After the Facility has achieved commercial operations, the performance of the Facility will be assessed on a continuing basis against key metrics identified in the RDG PPA. See Article 2 and Attachment U of the RDG PPA.

- 3.11.2 Additionally, a Company-owned Site is being offered to Proposers of standalone energy storage Projects for their consideration. An approximately 9.5 acre area within the Kahe Generating Station property on the west side of O‘ahu, referred to as the Kahe Site, is further described in Appendix F.

Proposers proposing to use the Kahe Site shall be required to agree to specific terms and conditions for such use as provided for in an attachment to the PPA. Provisions providing for access to the site during construction and thereafter, during commercial operations, will be subject to current Company security policies and procedures. Physical, communication and internet security will be required consistent with Company policy. Additional measures may be required to limit/eliminate interference between Seller and Company facilities and infrastructure. Such policies, procedures and requirements may change as necessary during the term of the ESPPA to reflect changes in Company policies or to remain in compliance with current applicable laws, rules or regulations. A draft copy of the proposed form of the Terms and Conditions for Use is attached as Attachment X to the model ESPPA. Limited sections (Section 4 Seller's Investigations of the Company-Owned Site, Section 5 Construction and Maintenance, Section 7 Hazardous Substances, and Section 8 Archeological and Historic Items) of the TCU shall be negotiable.

The Company provided potential Proposers the opportunity to visit the Kahe Site on August 6, 2019. Information from the site visit will be posted on the Company's RFP website.

- 3.11.3 To maintain the integrity of the transmission system, standalone energy storage Proposals or Proposals paired with energy storage that intend to meet the Company's Storage Requirement should either be sited on land near or adjacent to one the following 138 kV substations available for interconnection. If the Proposer chooses a different site, the Proposer may be required to build a new substation that meets the Company transmission planning criteria for firm generation resources.

Substation	Address	Zip Code	TMK	Space Available
AES Substation	91-174A Hanua St	96707	9-1-026-018	Space for expansion
CEIP Substation	91-0550 Kalaeloa Blvd	96707	9-1-015-016	Open bay
Ewa Nui Substation	91-1440A Farrington Hwy	96707	9-1-018-001	Space for expansion
Halawa Substation	99-760 Moanalua Rd	96701	9-9-010-044	Space for expansion
Ko‘olau Substation	45-580 Kionaole Rd	96744	4-5-042-007	Open bay

These 138 kV substations have the necessary infrastructure to meet the transmission planning criteria for firm generation resources. To maximize utilization of the Company Facilities, the Company prefers that Proposals that intend to interconnect to these 138 kV substations be sized to maximize utilization of the substation (e.g., projects sized in the range of 100 MW). Additional information regarding interconnection at these substations are provided in Appendix F.

Proposers must include the costs for use of the land and site preparation for a new Company substation as specified in Appendix H. The evaluation of these Projects is

specified in Section 4.4. Proposers should contact the Company for additional information regarding the estimated interconnection facilities needed to satisfy the transmission planning criteria for firm generation resources.

3.12 Confidentiality

- 3.12.1 Each prospective Proposer must submit an executed Stage 2 NDA (specific to the O‘ahu Variable Renewable Dispatchable Generation and Energy Storage RFP) in the form attached as Appendix E by the Proposal Due Date specified in the RFP Schedule in Section 3.1. The form of the Stage 2 NDA is not negotiable. Information designated as confidential by the Company will be provided on a limited basis, and only those prospective Proposers who have submitted an executed Stage 2 NDA will be considered. NDAs that were fully executed for Stage 1 will not be accepted for Stage 2. Proposers must clearly identify all confidential information in their Proposals. However, Proposers should designate as confidential only those portions of their Proposals that genuinely warrant confidential treatment. The Company discourages the practice of marking every page of a Proposal as confidential. The Company will make reasonable efforts to protect any such information that is clearly marked as confidential. Consistent with the terms of the Stage 2 NDA, the Company reserves the right to share any information, even if marked confidential, to its agents, contractors, or the Independent Observer for the purpose of evaluating the Proposal and facilitating potential contract negotiations.
- 3.12.2 Proposers, in submitting any Proposal(s) to Company in response to this RFP, certify that such Proposer has not shared its Proposal(s), or any part thereof, with any other Proposer of a Proposal(s) responsive to this RFP.
- 3.12.3 The Company will request that the PUC issue a Protective Order to protect confidential information provided by Proposers to the Company and to be filed in a proceeding before the PUC. A copy of the Protective Order, once issued by the PUC, will be provided to Proposers. Proposers should be aware that the Company may be required to share certain confidential information contained in Proposals with the PUC, the State of Hawai‘i Department of Commerce and Consumer Affairs, Division of Consumer Advocacy, and the parties to any docket instituted by the PUC, provided that recipients of confidential information have first agreed in writing to abide by the terms of the Protective Order. Notwithstanding the foregoing, no Proposer will be provided with Proposals from any other Proposer, nor will Proposers be provided with any other information contained in such Proposals or provided by or with respect to any other Proposer.

3.13 Credit Requirements Under the PPA

- 3.13.1 Proposers with whom the Company concludes PPA contract negotiations must post Development Period Security and Operating Period Security in the form of an irrevocable standby letter of credit from a bank chartered in the United States as required and set forth in Article 14 of the RDG PPA or the ESPPA.

- 3.13.2 The Development Period Security and Operating Period Security identified in the RDG PPAs or the ESPPA are minimum requirements. Proposers shall not propose an amount lower than that set forth in the RDG PPAs or the ESPPA.
- 3.13.3 Each Proposer shall be required to provide a satisfactory irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States to guarantee Proposer's payment of interconnection costs for all Company-Owned Interconnection Facilities in excess of the Total Estimated Interconnection Costs and/or all relocations costs in excess of Total Estimated Relocation Costs that are payable to Company as required and set forth in Attachment G to the RDG PPAs or the ESPPA.
- 3.13.4 Proposers may be required to provide an irrevocable standby letter of credit in favor of the Company from a bank chartered in the United States in lieu of the required Source Code Escrow in an amount and as required and set forth in Attachment B to the RDG PPAs or ESPPA.

Chapter 4: Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

The Company will employ a multi-step evaluation process. Once the Proposals are received, the Proposals will be subject to a consistent and defined review, evaluation, and selection process. This Chapter provides a description of each step of the process, along with the requirements of Proposers at each step. Figure 1 and Figure 2 sets forth the flowchart for the proposal evaluation and selection process.

Upon receipt of the Proposals, the Company will ensure that the Proposals meet the Eligibility Requirements, and if so, will review the Proposals to ensure that the Threshold Requirements have been met. The Company, in coordination with the Independent Observer will determine if a Proposer is allowed to cure any aspect of its Proposal or whether the Proposal would be eliminated based on failure to meet either Eligibility or Threshold Requirements.²¹ If a Proposer is provided the opportunity to cure any aspect of its Proposal, the Proposer shall be given three (3) business Days to cure from the date of notification to cure. Proposals that have successfully met the Eligibility and Threshold Requirements will then enter a two-phase process for Proposal evaluation, which includes the Initial Evaluation resulting in the development of a Priority List, followed by the opportunity for Priority List Proposals to provide Best and Final Offers, and then a Detailed Evaluation process to arrive at a Final Award Group.

²¹ As a general rule, if a Proposer does not include a requested document, inadvertently excludes minor information or provides inconsistencies in its information, it may be given a chance to cure such deficiency. If a Proposer fails to provide material required information in its Proposal and providing the Proposer an opportunity to cure is deemed by the Company, in consultation with the Independent Observer, as an unfair advantage to such Proposer, the Proposal could be classified as non-conforming and eliminated for failure to meet the Eligibility Requirements.

Figure 1 – Evaluation Workflow

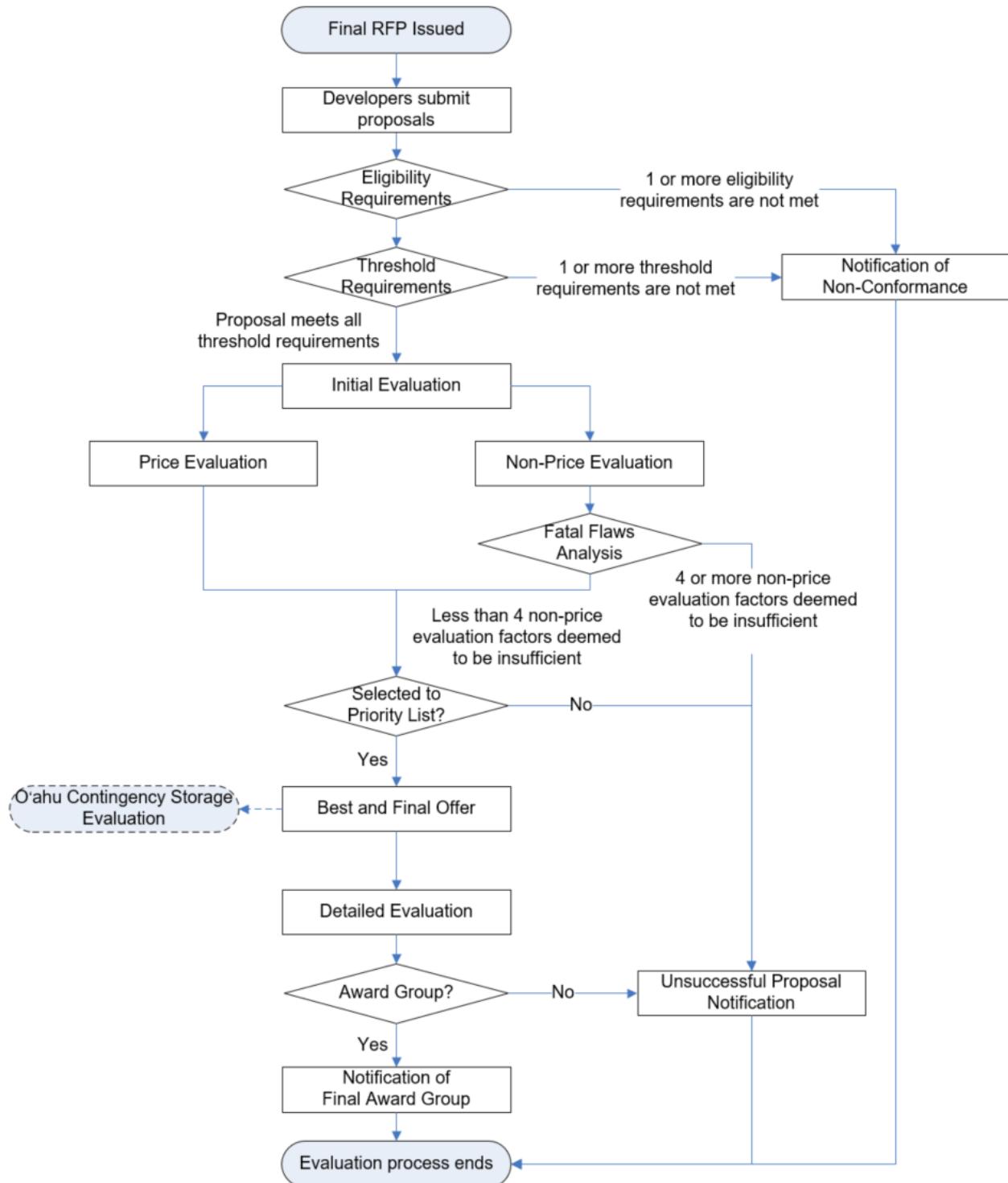
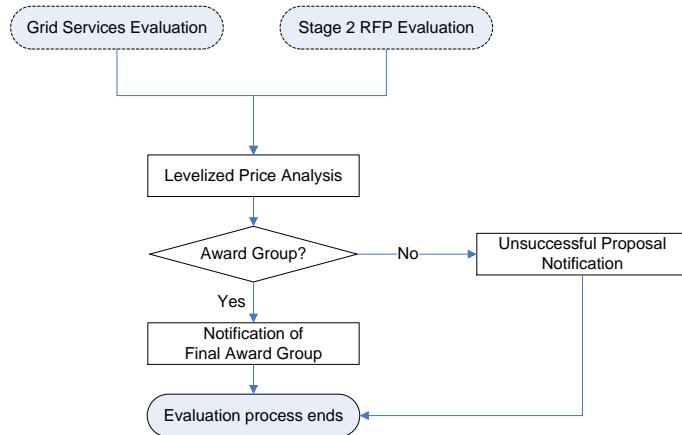


Figure 2 – O‘ahu Contingency Storage Evaluation Workflow



4.2 Eligibility Requirements Assessment

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

- The Proposal including required uploaded files must be received on time via the PowerAdvocate Platform.
- The Proposal Fee must be received on or before the Proposal Due Date.²²
- The Proposal must not contain material omissions.
- The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
- The Proposer must fully execute the agreements or other documents required pursuant to this RFP.
- The Proposer must provide a certificate of good standing from the State of Hawai‘i Department of Commerce and Consumer Affairs.
- The Proposer must provide federal and state tax clearance certificates for the Proposer.
- The Proposal must not be contingent upon changes to existing county, state, or federal laws or regulations.
- The proposed Project must be located on the island of O‘ahu.
- Project must be greater than 5 MW.
- No single point of failure from the Facility shall result in a decrease in net electrical output greater than 135 MW.
- Projects that interconnect to an existing Company substation (as identified in Section 3.11.3) must be a standalone energy storage Proposal or a Proposal paired with energy storage intending to meet the Company’s Storage Requirement.

²² Proposal Fees will not be required for SBO Proposals or Proposals utilizing Company offered and owned sites.

- Project infrastructure and point of interconnection must be located outside the 3.2 feet sea level rise exposure area (SLR-XA) as described in the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (2017), and not located within a Tsunami Evacuation Zone.
- Proposals must meet the grid-charging requirements of Section 1.2.11.
- Standalone energy storage Proposals or Proposals for generation paired with energy storage that intend such storage to meet the Company’s Storage Requirement must specify a GCOD no later than required in Section 1.2.14.
- Generation only Proposals or generation paired with energy storage Proposals that are not intended to meet the Company’s Storage Requirement must specify a GCOD no later than required in Section 1.2.14.

4.3 Threshold Requirement Assessment

Proposals that meet all the Eligibility Requirements will then be evaluated to determine compliance with the Threshold Requirements, which have been designed to screen out Proposals that are insufficiently developed, lack demonstrated technology, or will impose unacceptable execution risk for the Company. Proposers are responsible to provide explanations and supporting information demonstrating how and why they believe the Project they are proposing meets each of the Threshold Requirements. Proposals that fail to provide this information or meet a Threshold Requirement will be eliminated from further consideration upon concurrence with the Independent Observer. The Threshold Requirements for this RFP are the following:

- **Site Control:** The Proposal must demonstrate that the Proposer has Site Control for all real property required for the successful implementation of a specific Proposal at a Site not controlled by the Company, including any Interconnection Facilities for which the Proposer is responsible. The need for a firm commitment is necessary to ensure that Proposals are indeed realistic and can be relied upon as the Company moves through the remainder of the RFP process. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified and will be considered in determining whether the Proposal meets the Site Control threshold.

To meet this Site Control requirement, Proposers must do one of the following:

- Provide documentation confirming (1) that the Proposer has an existing legally enforceable right to use and control the Site, either in fee simple or under leasehold for a term at least equal to the term of the PPA or ESPPA (“Site Control”) as specified in the Proposer’s Proposal (taking into account the timelines set forth in this RFP for selection, negotiation, and execution of a PPA or ESPPA and PUC approval), and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal; or
- Provide documentation confirming, at a minimum, (1) that the Proposer has an executed binding letter of intent, memorandum of understanding, option agreement, or similar document with the land owner (a “binding commitment”) which sets forth the general terms of a transaction that would

- grant the Proposer the required Site Control, and (2) the applicable zoning for the Site and that such zoning does not prohibit the development of the Site consistent with the Proposal. The binding commitment does not need to be exclusive to the Proposer at the time the Proposal is submitted and may be contingent upon selection of the Proposal to the Final Award Group. If multiple Projects are provided a binding commitment for the same Site, the documents granting the binding commitments must not prevent the Company from choosing the Proposal that otherwise would have been selected.
- Government/Public Lands Only: The above two bullet points may not be feasible where government or publicly-owned lands are part of the Site or are required for the successful implementation of the Proposal. In such a case, at a minimum the Proposer must provide a credible and viable plan, including evidence of any steps taken to date, to secure all necessary Site Control for the Proposal, including but not limited to evidence of sufficient progress toward approval by the government agency or other body vested with the authority to grant such approval (as demonstrated by records of the agency). The Proposer will still be required, however, to demonstrate Site Control as required in the applicable RDG PPA or ESPPA should the Proposal be selected to the Final Award Group.
 - **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the applicable RDG PPAs or the ESPPA. Proposals should include sufficient documentation to support the stated claim that the Facility will be able to meet the Performance Standards (including the Project's ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component). The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.
 - **Proven Technology:** This criterion is intended as a check to ensure that the technology proposed is viable and can reasonably be relied upon to meet the objectives of this RFP. The Company will only consider Proposals utilizing technologies that have successfully reached commercial operations in commercial applications (i.e., a PPA) at the scale being proposed. Proposals should include any supporting information for the Company to assess the commercial and financial maturity of the technology being proposed.
 - **Experience of the Proposer:** The Proposer, its affiliated companies, partners, and/or contractors and consultants on the Proposer's Project team must have experience in financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one (1) electricity generation project, including all components of the project (i.e., storage or other attributes), similar in size, scope, technology, and structure to the Project being proposed by Proposer. The Company will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information in its Proposal's RFP Appendix B

Section 2.13 tables demonstrating that at least one member of the Proposer's team (identified in the Proposal) has specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining projects similar to the Project being proposed.

- **Credit/Collateral Requirements:** Proposers shall agree to post Development Period Security and Operating Period Security as described in Section 3.13.
- **Available Circuit Capacity:** The output capacity of the proposed Project (including Contingency Storage as applicable) must not exceed the available capacity of the 46 kV circuit to which it will interconnect except in cases where the Proposer will bear the cost of 46 kV transmission conductor upgrade as noted in Section 2.2.3. If a 138 kV transmission interconnection is proposed, the output capacity of the proposed Project must not exceed the thermal limit of that 138 kV-level circuit. (see Section 2.2.2).
- **Viability of Proposer's Financial Plan:** Proposers must provide a basic financial plan for the Project with details on the sources of debt and equity, capital structure, etc. Evidence must be provided of general support for Project financing.
- **Financial Compliance:** The proposed Project must not cause the Company to be subject to consolidation, as set forth in Financial Accounting Standards Board ("FASB") Accounting Standards Codification Topic 810, Consolidation ("ASC 810"), as issued and amended from time to time by FASB. Proposers are required to state to the best of their knowledge, with supporting information to allow the Company to verify such conclusion, that the Proposal will not result in the Seller under the PPA being a Variable Interest Entity ("VIE") and result in the Company being the primary beneficiary of the Seller that would trigger consolidation of the Seller's finances on to the Company's financial statements under FASB ASC 810. The Company will perform a preliminary consolidation assessment based on the Proposals received. The Company reserves the right to allow a Proposal to proceed through the evaluation process through selection of the Priority List and work with the Proposer on this issue prior to or during PPA negotiations.
- **Community Outreach:** Gaining community support is an important part of a Project's viability and success. A comprehensive community outreach and communications plan ("Community Outreach Plan") is an essential roadmap that guides a developer as they work with various communities and stakeholders to gain their support for a Project. Proposers must include a Community Outreach Plan that describes the Proposer's commitment to work with the neighboring community and stakeholders and to provide them timely Project information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, community scoping (including stakeholders and community concerns), Project benefits, government approvals, development process (including Project schedule), and a comprehensive communications plan.

Proposers need to also be mindful of the Projects' potential impacts to historical and cultural resources. At a minimum, Proposers should identify: (1) any valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist. Also, at a minimum, Proposers should have already contracted with a consultant with expertise in this field to begin a cultural impact assessment for the Project.

4.4 Initial Evaluation – Price and Non-Price Analysis

Proposals that meet both the Eligibility and Threshold Requirements are Eligible Proposals which will then be subject to a price and non-price assessment. Two teams have been established to undertake the Proposal evaluation process: a Price Evaluation Team and Non-Price Evaluation Team. The results of the price and non-price analysis will be a relative ranking and scoring of all Eligible Proposals. Price-related criteria will account for sixty percent (60%) of the total score and non-price-related criteria will account for forty percent (40%) of the total score. The non-price criteria and methodology for applying the criteria are explained in Section 4.4.2.

The Company will employ a closed-bidding process for this solicitation in accordance with Part IV.H.3 of the Framework where the price and non-price evaluation models to be used will not be provided to Proposers. However, the Company will provide the Independent Observer with all necessary information to allow the Independent Observer to understand the evaluation models and to enable the Independent Observer to observe the entire analysis to ensure a fair process. The evaluation models will be finalized prior to the receipt of Proposals.

4.4.1 Initial Evaluation of the Price Related Criteria

For the initial price analysis, an equivalent energy price (Levelized \$/MWh) will be calculated for each renewable generation and renewable generation with energy storage proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), Price for Purchase of Electric Energy (\$/MWh), and the Net Energy Potential (“NEP”) RFP Projection (MWh) information defined in RFP Sections 3.9 and 3.10.

For energy storage only proposals, a levelized energy price (Levelized \$/MWh) will be calculated for each energy storage Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the facilities’ energy arbitrage capability.

For standalone Contingency Storage Proposals, and for the Contingency Storage portion of a renewable energy project paired with storage, a energy price (\$/MW) will be calculated for each Proposal based on information provided in the Proposal including the Lump Sum Payment (\$/year), and the facility's Contingency Storage energy capability.

In order to fairly evaluate Proposals with different technologies and characteristics the Company will group Proposals into technology-based evaluation categories, as applicable. For example:²³ (1) Wind generation (MWh) only; (2) Wind generation (MWh) and Energy storage; (3) Solar generation (MWh) only; (4) Solar generation (MWh) and Energy storage; (5) Energy storage only; (6) Contingency storage only; (7) Energy storage and Contingency storage; (8) Wind generation (MWh), Energy Storage, and Contingency Storage; and (9) Solar generation (MWh), Energy storage, and Contingency Storage.

The Eligible Proposal with the lowest LEP in each evaluation category will receive 600 points. All other Eligible Proposals in that evaluation category will receive points based on a proportionate reduction using the percentage by which the Eligible Proposal's LEP exceeds the lowest LEP in that evaluation category. For example, if a Proposal's LEP is ten percent (10%) higher than the lowest LEP in that evaluation category, the Proposal will be awarded 540 points (that is, 600 points less 10%). The result of this assessment will be a ranking and scoring of each Proposal within each evaluation category.

4.4.2 Initial Evaluation of the Non-Price Related Criteria

For the non-price analysis, each Proposal will be evaluated on each of the eight (8) non-price criteria categories set forth below:

- Community Outreach and Cultural Resource Impacts
- State of Project Development and Schedule
- Performance Standards
- Environmental Compliance and Permitting Plan
- Experience and Qualifications
- Financial Strength and Financing Plan
- RDG PPA or ESPPA Contract Exceptions
- Guaranteed Commercial Operations Date

Each of the first three criteria – Community Outreach and Cultural Resource Impacts, State of Project Development and Schedule, Performance Standards – will be weighted twice as heavily as the others to reflect the impact these categories have to achieve a successful and timely procurement. The non-price criteria are generally scored on a scale of 1 (poor) to 5 (highly preferable).

The total non-price score will be the sum of the scores for each of the individual non-price criteria. The Company will then award non-price evaluation points in accordance with the relative ranking of scores within each evaluation category. The Proposal in each

²³ There may be other technologies that are offered in this RFP. This list is illustrative of how technology-based evaluation categories will be established for the Initial Evaluation.

evaluation category with the highest total non-price score will receive 400 points, and all other Proposals will receive points equal to the Proposal's score divided by the top score, multiplied by 400.

During the non-price criteria evaluation, a fatal flaws analysis will also be conducted such that any Proposal that is deemed not to meet the minimum standards level²⁴ for four (4) or more non-price criteria will be disqualified given that the Proposal has failed to meet a majority of non-price factors that are indicative as to the general feasibility and operational viability of a proposed Project.

The Companies' evaluation of the non-price criteria will be based on the materials provided by a Proposer in its Proposal. Acceptance of any Proposal into the Final Award Group shall not be assumed or construed to be an endorsement or approval that the materials provided by Proposer are complete, accurate or in compliance with applicable law. The Companies assume no obligation to correct, confirm or further research any of the materials submitted by Proposers. Proposers retain sole responsibility to ensure their Proposals are accurate and in compliance with all laws.

The non-price criteria are:

- **Community Outreach and Cultural Resource Impacts** – Gaining community support is an important part of a Project's viability and success. An effective Community Outreach Plan will call for early meaningful communications with stakeholders and will reflect a deep understanding and respect for the community's desire for information to enable them to make informed decisions about future projects in their communities. Therefore, Proposals will be evaluated on the quality of the Community Outreach Plan to inform the Project's impacted communities. Proposers need to also be mindful of the Project's potential impacts to historical and cultural resources. Proposers should at least identify (1) valued cultural, historical, or natural resources in the area in question, including the extent to which traditional and customary native Hawaiian rights are exercised in the area; (2) the extent to which those resources – including traditional and customary native Hawaiian rights – will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

At a minimum, Proposals should include a Community Outreach Plan that describes the Proposer's commitment to work with the neighboring community and stakeholders and to provide timely Project information during project development, construction and operation. The Community Outreach Plan shall include, but not be limited to the following:

- 1) Project description. A thorough description including a map of the location of the Project. This information will help the community understand the impact that the Project may have on the community.

²⁴ A score of 3 is the “meets minimum standards” level that a Proposal must achieve in at least five (5) criteria.

- 2) Community scoping. Identify stakeholders (individuals, community leaders, organizations), community issues and concerns, and community sentiment.
- 3) Project benefits. An explanation of the need for the Project. This will help the community to understand how the Project might benefit their community.
- 4) Government approvals. Required government permits and approvals, public hearings and other opportunities for public comment. This information will help the community to understand the level of public scrutiny and participation that might occur for the Project and the opportunities to provide public comments.
- 5) Development process. A Project schedule that identifies key milestones will facilitate the community's understanding of the development process.
- 6) Communications Plan. A communications plan including a detailed community outreach schedule that will keep the affected communities and stakeholders informed about the Project's outreach efforts during early Project development period through construction and operations.

Preference will be given to Proposers who have already identified established contacts to work with the local community, have used community input to incorporate changes to the final design of the Project and mitigate community concerns, have proposed a community benefits package (including details of the community recipients and benefits package), or have community consultants as part of the Project team doing business in Hawai‘i that have successfully worked with communities in Hawai‘i on the development of two or more energy projects or projects with similar community issues. These criteria are aligned with the Companies' community engagement expectation whereby all developers will be required to engage in community outreach prior to signing a PPA with the Companies. This process is also outlined in RFP Section 5.3.

Also, at a minimum, Proposers should have already contracted with a consultant with expertise in such field to begin a cultural impact assessment for the Project. Preference will be given to Proposals that are further along in the assessment process and are able to provide a mitigation/action plan or are able to provide a date for when a mitigation/action plan will be available that addresses any identified cultural resource issues.

- **State of Project Development and Schedule** – Projects that are further along in development generally have lower project execution risk and a greater probability of being able to be successfully placed into service prior to the GCOD (specifically identified in each Proposal). At a minimum, Projects should demonstrate how they plan to capture any ITC safe harbor and reach their GCOD specified, including identification of risks and schedule assumptions. (Schedules must identify the IRS completion date and PUC approval dates assumed.) Proposals should also demonstrate, via a detailed critical path schedule, that there is a high likelihood that the Project will be able to reach commercial operations as specified. Proposals shall include a Gantt chart that clearly illustrates the overall schedule and demonstrates achievement of any ITC safe harbor, if applicable, and commercial operations by their specified GCOD. The Gantt chart shall include

task durations and dependencies, identify tasks that will be fast tracked, and identifies slack time and contingencies. This criterion will also look at the high-level Project costs set forth in the Proposal including: costs for equipment, construction, engineering, Seller-Owned Interconnection Facilities, Company-Owned Interconnection Facilities, land, annual O&M, the reasonableness of such costs and the assumptions used for such costs. Project costs that do not appear reasonable for a project of the size proposed may result in a lower ranking for this criterion if the Company reasonably determines that the cost information is unrealistic based on prior experience in the market which may result in a risk that the Project can be built on time and for the price proposed by the Proposer. The Company reserves the right to discuss any cost and financial information with a Proposer to ensure the information provided is accurate and correct.

- **Performance Standards:** The proposed Facility must be able to meet the performance attributes identified in this RFP and the Performance Standards identified in the RDG PPA or the ESPPA. The Company will review the Proposal information received, including design documents and operating procedures materials provided in the Proposal, and evaluate whether the Project as designed is able to meet the Performance Standards identified in the RDG PPA or ESPPA (including the Project's ability to provide Fast Frequency Response if the Proposal includes a Contingency Storage component) and in this RFP. At a minimum, in addition to meeting the Performance Standards, the Proposals should include sufficient documentation, provided in an organized manner, to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed on a timely basis. Preference will be given to Proposals that provide detailed technical and design information showing how each standard can be met by the proposed Facility. Preference will also be provided to proposed Projects that offer additional capabilities (e.g., Black-Start, Grid-Forming).
- **Environmental Compliance and Permitting Plan** – This criterion relates to the potential (short- and long-term) environmental impacts associated with each project, the quality of the plan offered by the Proposer to mitigate and manage any environmental impacts (including any pre-existing environmental conditions), and the plan of Proposers to remain in environmental compliance over the term of the contract. These impacts are reflected on a technology-specific basis. Completing any necessary environmental review and obtaining the required permitting in a timely manner is also important and Proposals will be evaluated on their plan to identify, apply for, and secure the required permits for the Project, any permitting activity that has been completed to date, including having initial discussions with U.S. Fish and Wildlife and the State of Hawai‘i Department of Land and Natural Resources’ Division of Forestry and Wildlife, to the extent applicable, prior to submitting a Proposal, and the degree of certainty offered by the Proposer in securing the necessary permits.

At a minimum, proposed Projects should be expected to have minimal

environmental impact for most areas and Proposals should provide a comprehensive plan to mitigate the identified potential or actual significant environmental impacts to remain in environmental compliance. The proposed mitigation plans should be included in the Project timeline. Preference will be given to Proposals that provide a more detailed plan as well as those that have proactively taken steps to mitigate potential environmental impacts.

Also, this criterion requires that, at a minimum, Proposers should have identified, and disclosed in their Proposal(s), all major permits, approvals, appurtenances and entitlements (including applicable access, rights of way and/or easements) (collectively, the “permits”) required and have a preliminary plan for securing such permits. Preference will be given to Proposals that are able to provide a greater degree of certainty that its plan to secure the required permits is realistic and achievable, or have already received all or a majority of the required permits. The Proposer 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 GCOD.

- **Experience and Qualifications** –Proposals will be evaluated based on the experience of the Proposer in financing, designing, constructing, interconnecting, owning, operating, and maintaining projects (including all components of the project) of similar size, scope and technology. At a minimum, Proposals must show via the table format specified in RFP Appendix B Section 2.13 that at least one (1) member must have specific experience in each of the following categories: financing, designing, constructing, interconnecting, owning, operating, and maintaining at least one electricity generation project including all components of the project similar to the Project being proposed. Preference will be given to Proposers with experience in successfully developing multiple projects that are similar to the one being proposed and/or that have prior experience successfully developing and interconnecting a utility scale project to the Company’s System.
- **Financial Strength and Financing Plan** – This criterion addresses the comprehensiveness and reasonableness of the financial plan for the Project as

well as assesses the financial strength and capability of the Proposer to develop the Project. A complete financial plan addresses the following issues: Project ownership, capital cost and capital structure, sources of debt and equity, and evidence that credit-worthy entities are interested in financing the Project. The financial strength of Proposers or their credit support providers will be considered, including their credit ratings. The financing participants are expected to be reasonably strong financially. Developers and their sources of capital that have investment grade credit ratings from a reputable credit rating agency (S&P, Moody's, Fitch) will also be given preference, with those that have higher credit ratings ranked higher.

- **RDG PPA or ESPPA Contract Proposed Modifications** –Proposers are encouraged to accept the contract terms identified in the model agreements in their entirety in order to expedite the overall RFP process and potential contract negotiations. Proposers who accept the model agreements without edits will receive a higher score and will be the only proposals that can achieve the highest scoring for this non-price evaluation. Technology-specific or operating characteristic-required modifications, with adequate explanation as to the necessity of such modifications, will not jeopardize a project’s ability to achieve the highest score. Proposers who elect to propose modifications to the model agreements shall provide a Microsoft Word red-line version of the applicable document identifying specific proposed modifications to the model agreement language, as well as a detailed explanation and supporting rationale for each modification. General comments without proposed alternate language, drafting notes without explanation or alternate language, footnotes such as “parties to discuss,” or a reservation of rights to make additional modifications to the model agreements at a later time are unacceptable, will be considered unresponsive, and will result in a lower score. The Company and Independent Observer will evaluate the impact that the proposed modifications will have on the overall risk assessment associated with the evaluation of each Proposal.
- **Guaranteed Commercial Operations Date:** The Company is procuring resources and incorporating projects onto its System in Stages as part of its long-term plan to meet RPS goals. Proposers will be held to the Guaranteed Commercial Operations Date identified in their Proposal. The GCOD will be a Guaranteed Milestone and will be inserted without amendment into the RDG PPAs or ESPPA, as applicable. Proposers that are able to design for and commit to an earlier GCOD will be given more favorable scoring. Proposers must have met the GCOD requirements of RFP Section 1.2.14 prior to being evaluated in this non-price criterion.

4.5 Selection of a Priority List

At the conclusion of both the price and non-price analysis, a total score will be calculated for each Proposal using the 60% price-related criteria / 40% non-price-related criteria weighting outlined above. The price and non-price analysis, and the summation of both

price and non-price scores described above, will result in a ranking of proposals within each technology-based evaluation category.

The Company will determine a Priority List from the highest scoring Proposals for each technology-based evaluation category. Each Priority List will include a sufficient number of projects, but not less than two (2) Proposals per technology-based evaluation category, such that the Company can assemble portfolio combinations that meet or exceed the renewable energy MWh and storage MW and MWh targets for comparison in the Detailed Evaluation. The Companies will develop the Priority Lists in consultation with the Independent Observer. The Companies reserve the right, in consultation with the Independent Observer, to limit the projects allowed for further consideration in the initial evaluation to projects that fall within 15% of the lowest price proposed per technology-based evaluation category. Selection to the Priority List does not assure an eligible Project's inclusion in the selection of the Final Award Group.

4.6 Best and Final Offer (BAFO)

4.6.1 The Company will solicit a Best and Final Offer from Proposers selected to a Priority List in a technology-based evaluation category. If the SBO is selected to a Priority List, the SBO will not be eligible to provide a Best and Final Offer and the original pricing submitted in its Self-Build Proposal will be used in the Detailed Evaluation. All other Proposers selected to a Priority List will have the opportunity to update (downward only)²⁵ the pricing elements in their Proposal to improve the competitiveness of their Proposal prior to being further assessed in the Detailed Evaluation phase. At this time, updates may only be made to the following pricing elements:

- Lump Sum Payment (\$/year) amount
- Price for Purchase of Electric Energy (\$/MWh) amount. Payment for delivery of net energy sourced from the variable generation resource, if applicable. No Energy Payment will be provided for any energy delivery that is sourced originally from the grid (Company's System).

Proposers will not be allowed to increase their price²⁶ but may elect to maintain the same pricing submitted in their original Proposal. Proposers will not be allowed to make any other changes to their Proposal during the Best and Final Offer.

4.6.2 If a Proposer does not propose improvements to their pricing elements during the Best and Final Offer solicitation, the original Proposal pricing elements will be deemed its Best and Final Offer.²⁷

²⁵ Proposers will only be allowed to adjust pricing elements downward. No upward adjustment to the pricing elements will be permitted or considered. All other characteristics of the Proposal and Facility capabilities must remain valid and unchanged (e.g., NEP, GCOD, etc.)

²⁶ Proposers will not be allowed to increase the pricing in their Proposals to address interconnection and/or system upgrade costs or for any other reason.

²⁷ The Company reserves the right, in consultation with the Independent Observer, to adjust the parameters of the BAFO, in the unlikely event that system needs have evolved in a way that the Proposals received do not fully address.

4.7 Detailed Evaluation

The Best and Final Offers of the Priority List Proposals, from this RFP, the Best and Final Offers of the Short List Proposals for contingency storage from the Grid Services RFP, as well as original Self-Build Proposals if advanced to the Priority Listed Proposals, will be further assessed in the Detailed Evaluation to identify the Priority List Proposals that meet the variable renewable dispatchable generation MWh, energy storage MW and MWh targets, and contingency storage MW targets to determine the Proposals selected to the Final Award Group.

The Initial Evaluation for the Grid Services RFP and this RFP will occur in parallel. A combined evaluation for Grid Services FFR-1 and this RFP's Contingency Storage Proposals will take place after the completion of the BAFO rounds for each RFP, which will ensure that the proposals being considered have met eligibility and threshold requirements, represent the highest overall ranked projects based on price and non-price criteria, and have incorporated Best and Final pricing. If possible based on the number and quality of Proposals received, the Company will attempt to include in the joint evaluation Projects totaling 50 MW of Contingency Storage on the Priority List for Contingency Storage for the Renewable RFP and 50 MW of FFR-1 on the Short List for the Grid Services RFP. An Energy Storage Only Price (\$ / MW) will be calculated for each FFR-1 proposal and proposed Contingency Storage, including both standalone storage projects as well as storage projects paired with renewable generation. The Company will evaluate all FFR-1 and Contingency Storage proposals and rank them by lowest Energy Storage Only Price. The top-rated proposals (lowest cost) summing to 50 MW will be selected as Contingency Storage Proposal awardees. For renewable energy projects paired with storage which include a Contingency Storage option: a) if the project **is** selected as a Contingency Storage Proposal awardee, in order for the project to be confirmed to the Final Award Group (such confirmation is subject to the further considerations described below), it must also be included in the portfolio of projects selected to meet the energy requirements of this RFP; and b) if the project **is not** selected as a Contingency Storage Proposal awardee, a variation of the project without contingency storage may still continue to be considered in this RFP as a renewable energy project paired with storage that meets the energy requirements of this RFP.

The Company will build Portfolios for evaluation that meet the energy MWh target, the Storage Requirement target, and the Contingency Storage target of this RFP.

In order to fulfill the Storage Requirement target, both standalone energy storage projects and generation projects paired with storage intended to meet the Storage Requirement will be evaluated together. The Company expects that for Projects that provide energy storage only, such storage facilities will be charged by available grid resources. Such standalone storage projects that have a GCOD of June 1, 2022 or sooner and meet the interconnection requirements in Section 1.2.14 will be evaluated as meeting the Storage Requirement of this RFP based on 100% of their respective proposed MW and MWh quantities. Generation projects paired with storage that have a GCOD of June 1, 2022 or

sooner and meet the interconnection requirements in Section 1.2.14²⁸ will be evaluated as meeting the Storage Requirement of this RFP based on a percentage of their respective proposed MW and MWh quantities, based on the maximum percentage of charging from the grid proposed to be allowed for the paired storage facility, as determined by the table below:²⁹

Paired Project Battery Allowed Percentage Grid Charging	Percentage of Paired Battery Rating towards Storage Requirement
0%	10%
5%	20%
10%	40%
15%	60%
20%	80%
25%	100%

The detailed evaluation process will consist of assessment of combinations of Proposals from the Priority Lists that meet the energy, storage, and Contingency Storage targets of this RFP (“Portfolios”). A production simulation iteration will be created for each Portfolio to evaluate the Total Net Cost (Cost and Benefits) of integrating the Portfolio onto the Company’s System. Each Portfolio’s Total Net Cost will be compared against the Base Case, described further below.

The Company intends to use a computer model for this analysis. The evaluation will be based on the Total Net Cost (Costs and Benefits) to the Company of integrating the combination of Priority List Proposals onto the Company’s System which includes:

1. The cost to dispatch the combination of Projects and the energy and storage purchased;
2. The fuel cost savings (benefits) and any other direct savings (IPP savings from dispatchable fossil fuel savings) resulting from the displacement of generation by the Priority List Proposals, including consideration of round-trip efficiencies for facilities with storage;
3. The estimated increase (or decrease) in operating cost, if any, incurred by the Company to maintain system reliability; and
4. The cost of imputed debt, if applicable.

²⁸ Standalone storage projects or storage projects paired with variable renewable dispatchable generation facilities that have a GCOD of June 1, 2022 or later, or that do not meet the interconnection requirements of Section 1.2.14 will not have any percentage of their paired battery MW rating counted towards Storage Requirement.

²⁹ The Company acknowledges that the pricing proposed for a variable renewable dispatchable generation facility that is paired with a storage facility will vary depending on the amount of grid charging of the storage permitted in the proposal.

As noted, the Company will take into account the cost of rebalancing its capital structure resulting from any debt or imputed debt impacts associated with each Proposal (including any costs to be incurred by the Company, as described above, that are necessary in implementing the Proposal). The Company proposes to use the imputed debt methodology published by S&P that is applicable to the Proposal being evaluated. S&P views long-term PPAs as creating fixed, debt-like financial obligations that represent substitutes for debt-financed capital investments in generation capacity. By adjusting financial measures to incorporate PPA-fixed obligations, greater comparability of utilities that finance and build generation capacity and those that purchase capacity to satisfy new load are achieved.

During the Detailed Evaluation and before the Proposals advance to the Final Award Group, the Company will perform load flow analyses to determine if certain Project combinations introduce transmission circuit constraints that will factor into the selection process. This is to address the possibility that even though sufficient line capacity was identified for an individual Project, large Projects on separate transmission circuits that are in close proximity with each other could introduce additional transmission circuit constraints. The Projects selected must not have any additional constraints imposed based on the load flow analysis to advance to the Final Award Group. However, the Company reserves the right, in consultation with the Independent Observer, to allow minor modifications to a Proposal to avoid such additional constraints. If such modification resulted in a reduced size of the Facility, the pricing proposed would also need to be revised. Under no circumstances would a Proposer be allowed to increase their price as a result of such minor modification.

Also in the Detailed Evaluation, other factors will be validated to ensure that the final combination of Projects provides the contemplated benefits that the Company seeks. The Company will evaluate the collateral consequences of the implementation of a combination of Projects, including consideration of the geographic diversity, resource diversity, interconnection complexity, and flexibility and latitude of operation control of the Projects.

The Company may assess additional combinations of Projects if requested by the Independent Observer and if the time and capability exist to perform such analyses.

4.8 **Selection of the Final Award Group**

Based on the results of the Detailed Evaluation and review of the results with the Independent Observer, the Company will select a Final Award Group from which to begin contract negotiations. The Company intends to select projects that meet the targeted needs and provide customer benefits. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in the Final Award Group.

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

Further, if at any time during the evaluation process it is discovered that a Proposer's Proposal contains incorrect or misrepresented information that have a material effect on any of the evaluation processes, including selection of the Priority List or the Final Award Group, the Company reserves the right, at any time prior to submission of the PPA Application with the PUC application, in consultation with the Independent Observer, to disqualify the Proposer from the RFP. If discovery of the incorrect or misrepresented information is made after the Company has filed its PUC application for approval of the PPA with the Proposer, the Company will disclose the incorrect or misrepresented information to the PUC for evaluation and decision as to whether such Proposer should be disqualified and the Company's application dismissed.

Following any removal of a proposal from the Final Award Group, either by disqualification noted immediately above, or via any other removal or withdrawal of a proposal, including failure to reach agreement to the PPA, the Company, taking into consideration the timing of such removal and the current status of the Company's needs under the RFP, in consultation with and concurrence from the Independent Observer, will review the Priority List to determine (1) if another proposal should be added to the Final Award Group; (2) if either of the Contingency Plan or Parallel Plan should be pursued; or (3) if the remaining proposals in the Final Award Group should remain unchanged.

Order No. 36536 "directs the Companies to work with the [Independent Observers] to increase bid transparency within the RFP process, while maintaining an appropriate level of confidentiality regarding bids and bidders." The Companies agree that it is desirable for the RFP process to be as transparent as possible while maintaining the confidentiality of Proposer and Proposal information. The type and quantity of information that can be disclosed will not be known until the Companies and the Independent Observer have a better understanding of the number and types of proposals received and whether such information can be easily anonymized. The Companies will work with the Independent Observers to determine an appropriate level of disclosure after Proposals are received with a goal of disclosing more information than was disclosed in Stage 1.

Chapter 5: Post Evaluation Process

5.1 Interconnection Requirements Study Process

A complete package of IRS Data Request worksheets and project single line diagram(s) shall be submitted with each Proposal. For Projects with a proposed GCOD in 2022, the models for equipment and controls, list(s) to clearly identify the components and respective files (for inverters and power plant controller), and complete documentation with instructions, shall be submitted within 60 days thereafter. See Section 2.11.1 of Appendix B. For all other Projects, the same complete submittal shall be due within 60 days after selection to the Final Award Group. PSSE Generic models, PSSE User models, and ASPEN models shall be configured to represent all of the functional equipment with settings in place to comply with the Company's PPA performance requirements. These must be checked for functionality by the Proposer or its vendors and consultants prior to submission to the Company. Similar and fully accurate PSCAD

models shall be submitted in a condition that complies with the PSCAD modeling guidelines provided by the Company. PSSE generic models shall be provided promptly after the PSSE user models have been approved by the Company.

After proposals and models are submitted, the Company will inspect the data packages for general completeness. For any incomplete submissions, a list of missing or non-functional items will be provided. Proposers will be given 15 Days to resolve data and modeling deficiencies. The Company, in consultation with the Independent Observer, may remove Proposals from the Priority List or Final Award Group, or may terminate PPA negotiations or executed PPAs if their submission requirements are deemed incomplete for the lack of requested models. Proposals that are complete will be considered for further evaluation. A formal, technical model checkout will be deferred until a later date when IRS Agreements and deposits are in place, so that the expert subject matter work can be provided by the Company's IRS consultant(s).

Upon notification of selection to the Final Award Group, the Company will provide a draft IRS Agreement for each selected project, with a statement of required deposit for individual and prorated work as part of an IRS Scope for a System Impact Study that will involve (a) technical model checkout for each project, (b) any considerations that are specific to a particular project and location, and (c) system impact analyses of the projects as a group. Interconnection cost and schedule, including cost of any required system upgrades, will be determined in a subsequent Facilities Study.

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

Proposers shall be responsible for the cost of the IRS, under separate agreements for the System Impact Study and the Facilities Study. The overall IRS will provide information including, but not limited to, an estimated cost and schedule for the required Interconnection Facilities for a particular Project and any required mitigation measures. Proposers will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. Upon reviewing the results of the IRS, Proposers will have the opportunity to declare the PPA null and void in the event that the estimated interconnection costs and schedule for the Project are higher than what was estimated in the Project Proposal. See Section 12.4 of the RDG PPA or Section 2.3(b) of the ESPPA.

5.2 Contract Negotiation Process

Within five (5) business Days of being notified by the Company of its intent to enter into contract negotiations, Proposers selected for the Final Award Group will be required to indicate, in writing to the Company's primary contact for this RFP, whether they intend to proceed with their Proposals. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period. Contract negotiations will take place in parallel with the IRS process. Given the significant scope of the RFP, and depending on the number of Projects selected to the Final Award Group, the Company will prioritize which Projects to negotiate with first. The Company will first prioritize Projects intending to meet the identified 200 MW capacity need.

Prioritization will take into consideration the GCOD of the Project, the benefits to and the needs of the Company's System, and extensiveness of the exceptions to the model PPA. While PPA negotiations and submission of executed PPAs for approval will take place on a rolling basis, the Company's goal is to begin to complete this process for the first projects within six (6) months of notification of intent to enter contract negotiations. The IRS may not be completed at such time. The Company intends to execute and file the PPA with the PUC for approval and later amend the PPA to include the results of the IRS.

5.3 Community Outreach and Engagement

The public meeting and comment solicitation process described in this Section and Section 29.21 of the model RDG PPA or Section 27.17 of the model ESPPA (Community Outreach Plan) do not represent the only community outreach and engagement activities that can or should be performed by a Proposer. Within 30 Days of the start of PPA negotiations, Proposers shall have provided the Company with an updated comprehensive Community Outreach Plan to work with and inform neighboring communities and stakeholders and to provide them timely information during all phases of the Project. The Community Outreach Plan shall include but not be limited to the following information: Project description, Project stakeholders, community concerns and Proposer's efforts to address such concerns, Project benefits, government approvals, Project schedule, and a comprehensive communications plan. Upon selection to the Final Award Group, a Proposer's Community Outreach Plan shall be a public document available to the public on the Proposer's website and upon request. The Proposer shall also provide the Company with links to their Project website and Community Outreach Plan, which the Company will post on the Company's website. Prior to the execution date of the PPA, Proposers shall also host a public meeting in the community where the proposed Project is to be located for community and neighborhood groups in and around the vicinity of the Project Site that provided the neighboring community, stakeholders and the general public with: (i) a reasonable opportunity to learn about the proposed Project; (ii) an opportunity to engage in a dialogue about concerns, mitigation measures, and potential community benefits of the proposed Project; and (iii) information concerning the process and/or intent for the public's input and engagement, including advising attendees that they will have thirty (30) calendar days from the date of said public meeting to submit written comments to Company and/or Proposer for inclusion in the Company's submission to the PUC of its application for a satisfactory PUC Approval

Order. The Proposer shall collect all public comments, and then provide the Company copies of all comments received in their original, unedited form, along with copies of all comments with personal information redacted and ready for filing. If a PPA is executed by the Proposer and the Company, the Company may submit any and all public comments (presented in its original, unedited form) as part of its PUC application for this Project. Proposers shall notify the public at least three weeks in advance of the meeting. The Company shall be informed of the meeting. The Company will provide Proposers with detailed instructions regarding the community meeting requirement after the selection of the Final Award Group. (For example, notice will be published in county or regional newspapers/media, as well as media with statewide distribution. The Proposer will be directed to notify certain individuals and organizations. The Proposer will be provided templates to use for the public meeting notices, agenda, and presentation.) Proposers must also comply with any other requirement set forth in the PPA relating to Community Outreach.

Following the submission of the PUC application for the Project, and prior to the date when the Parties' statements of position are to be filed in the docketed PUC proceeding for the Project, the Proposer shall provide another opportunity for the public to comment on the proposed Project. The Proposer's statement of position filed in the docket associated with the Project will contain an attachment including those comments.

The Proposer shall be responsible for community outreach and engagement for the Project, and that the public meeting and comment solicitation process described in this section do not represent the only community outreach and engagement activities that can or should be performed.

5.4 Greenhouse Gas Emissions Analysis

Proposers whose Proposal(s) are selected for the Final Award Group shall cooperate with and promptly provide to the Company and/or Company's consultant(s) upon request all information necessary, in the Company's sole and exclusive discretion, for such consultant to prepare a greenhouse gas ("GHG") emissions analysis and report in support of a PUC application for approval of the PPA for the project (the "GHG Review"). Proposers shall be responsible for the full cost of the GHG Review associated with their project under a separate agreement between the Proposer and the Company. The GHG Review is anticipated to address whether the GHG emissions that would result from approval of the PPA and subsequent to addition of the Project to the Company's system are greater than the GHG emissions that would result from the operations of the Company's System without the addition of the Project, whether the cost for renewable, dispatchable generation, and/or energy storage services as applicable under the PPA is reasonable in light of the potential for GHG emissions, and whether the terms of the PPA are prudent and in the public interest in light of its potential hidden and long-term consequences.

5.5 PUC Approval of PPA

Any signed PPA resulting from this RFP is subject to PUC approval as described in the RDG PPA, including Article 12 and Section 29.20 thereof, or Article 24 of the ESPPA.

5.6 Facility In-Service

In order to facilitate the timely commissioning of the numerous projects required to meet the MW and MWh targets of this RFP, the Company requires the following be included with the 60% design drawings: relay settings and protection coordination study, including fuse selection and ac/dc schematic trip scheme.

For the Company to test the Facility, coordination between the Company and Project is required. Drawings must be approved by the Company prior to testing. The entire Facility must be ready for testing to commence. Piecemeal testing will not be allowed. Communication infrastructure and equipment must be tested by the IPP and ready for operation prior to Company testing.

If approved drawings are not available, or if the Facility is otherwise not test ready as scheduled, the Project will be moved to the end of the Company's testing queue. If tests are not completed within the allotted scheduled testing time, the Project will be moved to the end of the Company's testing queue. The IPP will be allowed to cure if successful testing is completed within the allotted scheduled time. No adjustments will be made to PPA milestones if tests are not completed within the original allotted time. Liquidated damages for missed milestones will be assessed pursuant to the PPA.

REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

Appendix A – Definitions



**Hawaiian
Electric**

“Affiliate” means any person or entity that possesses an “affiliated interest” in a utility as defined by section 269-19.5, 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 RDG PPA and ESPPA.

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

“Code of Conduct” means the code of conduct approved by the PUC in Docket No. 03-0372 (Decision and Order No. 23614, August 28, 2007) with respect to a Self-Build Option. An updated code of conduct was submitted to the PUC in Docket No. 2017-0352 on October 23, 2017.

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

“Commercial Operations” has the meaning set forth in the RDG PPA and ESPPA.

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

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

“Company-Owned Interconnection Facilities” has the meaning set forth in the RDG PPA and ESPPA.

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

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

“Contingency Storage” is an additional contingency storage component, added to a generation proposal paired with an energy storage component or part of the standalone energy storage, to provide Fast Frequency Response.

“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 RDG PPA and Section 14.1 of the ESPPA.

“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.

“Energy Contract Manager” is the primary Company contact for this RFP.

“ESPPA” means the Model Energy Storage Power Purchase Agreement attached as Appendix K to this RFP.

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

“Facility” has the meaning set forth in the RDG PPA and ESPPA.

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

“Greenhouse Gas” or **“GHG”** are gases that contribute to the greenhouse gas effect and trap heat in the atmosphere.

“Guaranteed Commercial Operations Date” or **“GCOD”** means the date on which a Facility first achieves Commercial Operations.

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

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

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

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

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

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

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

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

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

“kV” means kilovolt.

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

“Levelized Energy Price” or **“LEP”** 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 RDG PPA or ESPPA. It may also be referred to as a monthly Lump Sum Payment to reflect the portion of the payment made each month.

“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 RDG PPA and Section 14.2 of the ESPPA.

“Performance Standards” means the various performance standards for the operation of the Facility to the Company as set forth in Section 3 of Appendix B, as such standards may be revised from time to time pursuant to Article 23 of the RDG PPA or Article 22 of the ESPPA, and as described in Chapter 2 of this RFP.

“Point of Interconnection” has the meaning set forth in the RDG PPA and ESPPA.

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

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

“Price Evaluation Team” means Employees and consultants of the Company who evaluate the Proposal price related criteria as set forth in Section 4.4 of this RFP. Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.

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

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

“Project” means a Facility proposed to Hawaiian Electric by a Proposer pursuant to this RFP.

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

“Proposal Due Date” means the date stated in RFP Schedule - Row 7 for the Self-Build and/or Affiliate Proposal and Row 8 for the IPP Proposal of this RFP.

“Proposal Fee” means the non-refundable fee of \$10,000 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 Hawaiian Electric pursuant to this RFP.

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

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

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

“RDG PPA” means the Model PV and/or Wind Renewable Dispatchable Generation Power Purchase Agreement attached as Appendix J and Appendix L respectively to this RFP.

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

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

“RFP Schedule” means the schedule set forth in Table 1, Section 3.1 of this RFP.

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

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

“Seller” means the entity that the Company is contracting with, as set forth in the RDG PPA and ESPPA.

“Seller-Owned Interconnection Facilities” has the meaning set forth in the RDG PPA and ESPPA.

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

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

“Storage Requirement” is the amount of MW and MWh storage capability solicited in this RFP.

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

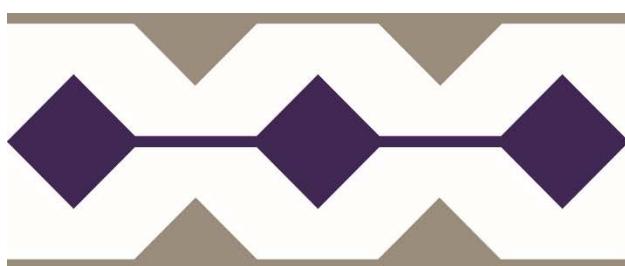
Any capitalized term not defined in this RFP has the meaning set forth in the RDG PPA and ESPPA.

**REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU**

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix B – Proposer’s Response Package /
IRS Data Sheet*



**Hawaiian
Electric**

1.0 GENERAL INSTRUCTIONS TO PROPOSERS

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

Proposers must adhere to the response structure and file naming conventions identified in this Appendix for the Proposer's response package. Information submitted in the wrong location/section or submitted through communication means not specifically identified by the Company will not be considered by the Company.

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

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

All information (including attachments) must be provided in English. All financial information must be provided in U.S. Dollars and using U.S. credit ratings.

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

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

1.1 ELECTRONIC PROCUREMENT PLATFORM

To access the RFP event, the Proposer must register as a “Supplier”¹ on Sourcing Intelligence (Electronic Procurement Platform). One Proposal may be submitted with each Supplier registration. Minor variations, as defined in Section 1.8.2 and 1.8.3 of this RFP may be submitted along with the Proposal under the same registration.

If a Proposer is already registered on Sourcing Intelligence, the Proposer may use their current login information to submit their first Proposal. Minor variations of a Proposal will be submitted together with the base variationProposal, following the instructions outlined in this Appendix. If the Proposer chooses to submit more than one Proposal, the Proposer must register as a new “Supplier” on Sourcing Intelligence for each additional Proposal. Proposers who participated in Stage 1 may reuse their registered Supplier accounts from Stage 1 for this Stage 2 RFP, however they should ensure that the account name (Company name) aligns with their Proposal

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

being submitted in Stage 2 noting that Stage 2 RFP's submission structure differs from Stage 1 (Stage 2 does not require all variations to have a separate PowerAdvocate Supplier registration).

Each registration will require a unique username, unique Email address, and unique Company name. Proposers that require multiple registrations to submit multiple Proposals should use the Company name field to represent the Company name and Proposal number (ex: CompanyNameP1).² Proposers may use shorthand or clear abbreviations. Proposers are asked to refer to their chosen unique company name throughout when referring to it in text responses.

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

www.poweradvocate.com

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

Once a Proposer has successfully registered as a "Supplier" with PowerAdvocate, the Proposer shall request access to the subject RFP event from the Company Contact via Email through the RFP Email Address set forth in Section 1.6 of the RFP. The Email request must list the Company Name field and username under which the Proposer has registered with PowerAdvocate. If the Proposer plans to submit multiple Proposals and has registered multiple accounts in accordance with the instructions above, the Email request must contain the Company Name field and username for each account that will be used to submit the Proposals. After the Energy Contract Manager has added the Proposer to the event, the Proposer will receive an invitation to the RFP event at the registered Email account, and the Proposer will see the bid event on their dashboard upon logging into Sourcing Intelligence. Once the RFP event opens, the Proposer may begin submitting their Proposal(s).

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

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

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

² In this Stage 2 RFP, a Proposer may submit up to three additional variations of their Project using a single registered Supplier account (Company name) which is different than what was required in Stage 1 where separate accounts were required for each variation. RFP Sections 1.8.2 and 1.8.3 describe the variations that can be submitted.

Once the RFP event is opened, registered Proposers will have online access to general notices, RFP-related documents, and other communications 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 via the messaging feature in the Electronic Procurement Platform when the event has been opened to receive Proposals.

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

- “**1. Download Documents:**” Documents stored under this tab are provided for the Proposer’s use and information. All documents can be downloaded and/or printed, as required.
- “**2. Upload Documents:**” Proposal submission documents requested in Appendix B must be uploaded using this tab.
- “**3. Commercial Data:**” This tab is NOT USED for this event.
- “**4. Technical Data:**” This tab is NOT USED for this event.
- “**5. Pricing Data:**” This tab is NOT USED for this event.

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

1. Proposers must upload their Proposal files, including all required forms and files, to submit a complete Proposal. All files must be uploaded before the Proposal Due Date.
2. Submit (upload) one consolidated PDF representing your Proposal via the “2. Upload Documents” tab. That Proposal PDF must abide by the format specified in this Appendix B. A MSWord.docx template that outlines the format of this document is available under the “1. Download Documents” tab for the Proposer’s use. **Response information must be provided in the order, format, and manner specified in this Appendix B and must clearly identify and reference the Appendix B section number that the information relates to.**
 - a. Proposers shall use a filename denoting: CompanyName_Proposal#.pdf.
(example: AceEnergy_P1.pdf)
3. Proposal information that cannot be easily consolidated into the PDF file described in Step 2 (such as large-scale drawing files) or files that must remain in native file format (such as computer models and spreadsheets) shall be **uploaded separately but must be referenced from within the main Proposal PDF file** (e.g., “See AceEnergyP1V2_2.5_SiteControlMap.kmz”). Such additional files must follow the naming convention below:
 - a. File names must include, in order, Company Name, Proposal number (if more than one Proposal being submitted per Proposer), Variation (if any variations are being submitted), Appendix B section number, and a file descriptor, as shown in the example file name below:
AceEnergyP1V2_2.5_SiteControlMap.kmz

Proposers may use abbreviations if they are clear and easy to follow.

4. Upload files using the "**2. Upload Documents**" tab on the Electronic Procurement Platform.
 - a. For all documents identify the "Document Type" as "Technical Information." (Do not identify any documents as "Commercial and Administrative" or "Pricing.")
 - b. "Reference ID" may be left blank.
 - c. Select "Choose File..." Navigate to and choose the corresponding file from your computer. Select "Open" and then "Submit Document."

There is no limit to the number or size of files that can be uploaded. Multiple files may be grouped into a .zip archive for upload. (Any zipped files must still adhere to the naming directions in #3 above.) When successfully uploaded, documents will appear under the "Bid Submissions" section on the bottom of the tab's page, organized within the "Technical Information" Document Type. Repeat steps a, b, and c, as required for each file upload.

If a file with the same name is uploaded twice, the Platform will automatically append a unique numerical extension to the Document Name. To delete a file that has been previously uploaded, click on the "X" button in the "Actions" column for the file to be deleted. Do not upload any files prior to the issuance of the Final RFP.

5. The Company will not be responsible for technical problems that interfere with the upload or download of Proposal information. Support is available to answer technical questions about PowerAdvocate's Sourcing Intelligence from 8 AM to 8 PM Eastern Time (2 AM to 2 PM Hawai'i Standard Time when daylight savings is in effect) Monday to Friday, except for Holidays posted on the PowerAdvocate website, both by phone (857-453-5800) and by Email (support@poweradvocate.com).
6. Proposers are strongly encouraged to start early and avoid waiting until the last minute to submit the required information. Proposers are allowed to add, modify, and/or delete documents that have been previously submitted any time prior to the event close deadline.
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 or via the PowerAdvocate Messaging tab. 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:

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

2.0 PROPOSAL SUMMARY TABLE

Base variation Proposal Summary. If proposal variations are submitted, any changes to the summary information for such variations must be specifically identified in a similar table placed in sections 3.2, 3.3, 3.4, etc. of this Appendix, as applicable.

To be filled out by **ALL** Projects:

1	Proposer Name (Company Name)	
2	Parent Company/Owner/Sponsor/Business Affiliation/etc	
3	Project Name	
4	Net AC Capacity of the Facility (MW)	
5	Proposed Facility Location in/near what City/Area	
6	TMK(s) of Facility Location (9 digits)³	
7	Point of Interconnection's Circuit or Substation Name	
8	Proposal Contract Term (Years)	
9	Proposal Guaranteed Commercial Operations Date (MM/DD/YYYY)	
10	The Proposer hereby certifies that the Project meets all performance attributes identified in this RFP and the Performance Standards in the applicable RDG PPA or ESPPA? (Yes/No)	
11	The Proposer hereby certifies that no single point of failure from the Facility shall result in a decrease in net electrical output greater than 135 MW. (Yes/No)	
12	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)	
13	The Proposer hereby agrees to provide Development Period Security and Operating Period Security as set forth in the applicable RDG PPA or ESPPA. (Yes/No)	
14	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)	

IPP or Affiliate proposals:

- that contain a generation component (whether with or without an energy storage component) – complete the summary table items in part A below.
- that are standalone energy storage projects – complete the summary table items in part B below.

Self-Build proposals:

- that contain a generation component (whether with or without an energy storage component) – complete the summary table items in part C below.
- that are standalone energy storage projects – complete the summary table items in part D below.

³ Island Number (1 digit); Zone Number (1 digit); Section Number (1 digit); Plat Number (3 digits, add leading zeros if less than 3 digits); Parcel Number (3 digits, add leading zeros if less than 3 digits)

A. To be filled out by IPP or Affiliate proposals, IF the Project contains a Generation Component (With or Without an Energy Storage Component):

16	Project Generation Technology	
17	Net Energy Potential (NEP) Projection for the Facility (MWh)	
18	Lump Sum Payment (\$/Year)	
19	Price for Purchase of Electric Energy, if any (\$/MWh)	
20	Incremental cost required to enable Black Start, if any and if applicable (\$)	
21	Does Project include an Energy Storage Component? (Yes/No)	
If the Project includes an Energy Storage Component:		
22	Project Energy Storage Technology	
23	Energy Storage Capability for the Facility (MW and MWh)	
24	Is the Project capable of claiming the Federal Investment Tax Credit (ITC)? (Yes/No)	
25	If the Project is capable of claiming the Federal ITC, what percentage of grid charging of the energy storage system is the Project designed for during the ITC recapture period?	
26	If the Project is capable of claiming the Federal ITC, is the Project capable of being 100% charged from the grid after the ITC recapture period? (Yes/No)	
27	If the Project is not capable of claiming the Federal ITC, is the Project capable of being 100% charged from the grid from the GCOD? (Yes/No)	
28	Does the Proposer intend for this Project to meet the Company's Storage Requirement? (Yes/No)	
32	Does the Project include Contingency Storage? (Yes/No)	
33	If the Project includes Contingency Storage, specify the amount (MW)	
34	Portion of Lump Sum Payment attributable to Contingency Storage (\$/Year)	

B. To be filled out by IPP or Affiliate proposals, IF the Project is for Standalone Energy Storage:

22	Project Energy Storage Technology	
23	Energy Storage Capability for the Facility (MW and MWh)	
18	Lump Sum Payment (\$/Year)	
20	Incremental cost required to enable Black Start, if any (\$)	
27	Is the Project capable of being 100% charged from the grid from the GCOD? (Yes/No)	
32	Does the Project include Contingency Storage? (Yes/No)	
33	If the Project includes Contingency Storage, specify the amount (MW)	
34	Portion of Lump Sum Payment attributable to Contingency Storage (\$/Year)	

C. To be filled out by Self-Build Option proposals, IF the Project contains a Generation Component (With or Without an Energy Storage Component):

16	Project Generation Technology		
17	Net Energy Potential (NEP) Projection for the Facility (MWh)		
20	Incremental cost required to enable Black Start, if any and if applicable (\$)		
21	Does Project include an Energy Storage Component? (Yes/No)		
If the Project includes an Energy Storage Component:			
22	Project Energy Storage Technology		
23	Energy Storage Capability for the Facility (MW and MWh)		
24	Is the Project capable of claiming the Federal Investment Tax Credit (ITC)? (Yes/No)		
25	If the Project is capable of claiming the Federal ITC, what percentage of grid charging of the energy storage system is the Project designed for during the ITC recapture period?		
26	If the Project is capable of claiming the Federal ITC, is the Project capable of being 100% charged from the grid after the ITC recapture period? (Yes/No)		
27	If the Project is not capable of claiming the Federal ITC, is the Project capable of being 100% charged from the grid from the GCOD? (Yes/No)		
28	Does the Proposer intend for this Project to meet the Company's Storage Requirement? (Yes/No)		
32	Does the Project include Contingency Storage? (Yes/No)		
33	If the Project includes Contingency Storage, specify the amount (MW)		
29	Year (YYYY)	Project Capital Cost (\$)	Extend the table for questions 29, 30, 31, and 35 for as many years as needed.
30	Year (YYYY)	O&M Cost (\$)	
31	Year (YYYY)	Annual Revenue Requirement (\$)	
35	Year (YYYY)	Contingency Storage portion of Annual Revenue Requirement (\$)	

D. To be filled out by Self-Build Option proposals, IF the Project is for Standalone Energy Storage:

16	Project Energy Storage Technology	
20	Incremental cost required to enable Black Start, if any (\$)	
23	Energy Storage Capability for the Facility (MW and MWh)	
27	Is the Project capable of being 100% charged from the grid from the GCOD? (Yes/No)	
32	Does the Project include Contingency Storage? (Yes/No)	
33	If the Project includes Contingency Storage, specify the amount (MW)	
29	Year (YYYY)	Project Capital Cost (\$)
30	Year (YYYY)	O&M Cost (\$)
31	Year (YYYY)	Annual Revenue Requirement (\$)
35	Year (YYYY)	Contingency Storage portion of Annual Revenue Requirement (\$)

Extend the table for questions 29, 30, 31, and 35 for as many years as needed.

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 Stage 2 **Mutual Confidentiality and Non-Disclosure Agreement** (Appendix E to the RFP, may be downloaded from the “1. Download Documents” tab in the Electronic Procurement Platform)
- **Certificate of Good Standing** for the Proposer (a Certificate of Vendor Compliance for the Proposer may be provided in lieu of a Certificate of Good Standing)
- **Federal and State tax clearance certificates** for the Proposer (a Certificate of Vendor Compliance for the Proposer may be provided in lieu of Federal and State tax clearance certificates)
- **Certification of Counsel for Proposer**, if applicable. (See Appendix B Attachment 1.)
- Completed applicable **Interconnection Requirement Study Data Request form** 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 form shall be submitted within the respective timeframes specified in Section 5.1 of the RFP.⁴ (See Section 2.11.1 below)
- [For Self-Build Only] **Self-Build Option Team Certification Form**. See Appendix G Attachment 1.
- [For Self-Build 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 Self-Build 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

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

⁴ 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. If variations are proposed, each variation's pricing summary must be identified in a similar pricing table in Sections 3.2, 3.3, 3.4, etc. as applicable. 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:

- Facility Generation Size (MW_{AC} and MW_{DC})
- Net Maximum Output Capacity of the Facility at the Point(s) of Interconnection (MW_{AC})
- Identified Available Hosting Capacity of the Transmission-level Circuit Facility Interconnecting to (MW_{AC})

For projects that include a generation component:

- Technology Type
- Number of Generators
- Rated Output of each Generator
- Generator Facility Design Characteristics
- Fuel Source for Generation

For stand-alone storage projects or generation projects that include a storage component:

- Technology Type (i.e. lithium ion battery)
- Discharge Duration (hours)
- Storage Capacity (i.e. amount of energy released to fully discharge and amount of energy required to fully charge, in MW and MWh)
- Operational Limitations, such as, but not limited to: number of charge/discharge cycles per day-month-year (see the energy discharge requirement in Section 1.2.12 and 13 of the RFP).
- Minimum and Maximum Operational Ranges, such as minimum and maximum required state of charge
- Round Trip Efficiency at rated power measured at the Point of Interconnection (i.e. discharge energy divided by charge energy, expressed as a percentage)
- Round Trip Efficiency using full duty cycle for a fixed duration measured at the Point of Interconnection (%)
- For generation coupled with energy storage, described the Allowed Percentage of Storage Component's charging that can come from the System Grid, if any, and any conditions of charging (when, percentage of annual total energy input, etc.)

2.3 FINANCIAL

Provide the following financial information identified below.

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
- Engineering
- Seller-Owned Interconnection Facilities
- Company-Owned Interconnection Facilities
- Land
- Annual O&M

[For Self-Build 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

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

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

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

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

2.3.3 Project Financing Experience of the Proposer

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

- Project Name

- Project Technology
- Project Size
- Location
- Date of Construction and Permanent Financing
- Commercial Operations Date
- Proposer's Role in Financing of the Project
- Off-taker
- Term of the Interconnection Agreement
- Financing Structure
- Major Pricing Terms
- Name(s) of Finance Team Member(s); Time (i.e., years, months) worked on the project and Role/Responsibilities

2.3.4 Evidence of the Proposer's Financial Strength

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

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

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

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

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

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

2.3.5 Provide evidence that the Proposer can provide the required securities

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

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

2.3.6 Disclosure of Litigation and Disputes

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

2.4 CONTRACT EXCEPTIONS AND FINANCIAL COMPLIANCE

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

Proposers that do not upload redlines of the applicable PPA with their Proposal submission will be deemed to have accepted the model PPA in its entirety.

2.4.2 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.

2.5 SITE CONTROL

2.5.1 The Proposal must demonstrate that the Proposer has Site Control for all real property required for the successful implementation of a specific Proposal at a Site not controlled by the Company, including any Interconnection Facilities for which the Proposer is responsible. In addition, developmental requirements and restrictions such as zoning of the Site and the status of easements must be identified. **Provide documentation set forth in RFP Section 4.3 to prove Site Control.**

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

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

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

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

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

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

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

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

2.6 ENVIRONMENTAL REVIEW, PERMITTING PLAN, ENVIRONMENTAL COMPLIANCE/IMPACTS

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

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

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

2.7 CULTURAL RESOURCE IMPACTS

2.7.1 Provide a **plan to address the below requirements** as they pertain to the Project Site and interconnection route including the status of any consultant/s with expertise in this field that have been identified and/or contracted with, and documentation of any assessments or work that has been planned or performed to date. Identify any cultural, historical or natural resources in the area in question. For any impacts identified to the categories listed below, provide a mitigation strategy and the expected impact on the Project schedule. Detail the potential impacts of the Proposal on cultural resources in the short- and long-term and the Proposer's plan to mitigate such impacts. Proposers must provide as much information as possible to allow the Company to understand the considerations.

- Archaeological Resources
- Cultural Practices and Resources

2.8 COMMUNITY OUTREACH

2.8.1 Provide a **detailed Community Outreach Plan** to work with and inform neighboring communities and stakeholders and to provide them timely information during all phases of the Project. The plan shall address, but not be limited to, the following items:

- Project description
- Community scoping
- Project benefits
- Government approvals
- Development process
 - Identification of communities and other stakeholders that may be affected by the proposed Project:
 - How will they be affected?
 - What mitigation strategies will the Proposer implement?
- Comprehensive communication strategy with affected communities and the general public regarding the proposed Project:
 - Describe frequency of communication
 - Provide source of information
 - Identify communication outlets
 - Describe opportunities, if any for affected communities and general public to provide the developer with feedback and comments on the proposed Project

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

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

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

2.9 OPERATIONS AND MAINTENANCE (O&M)

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

- Operations and maintenance funding levels, annually, throughout the term of the contract.
- Description of the operational requirements by frequency (daily, weekly, monthly, yearly, as-necessary, run hour interval) and maintenance requirements by frequency (daily, weekly, monthly, yearly, as-necessary, run hour interval).
- A discussion of the staffing levels proposed for the Project and location of such staff. If such staff is offsite, describe response time and ability to control the Project remotely.
- Technology specific maintenance experience records.
- Identification of any O&M providers.
- The expected role of the Proposer (Owner) or outside contractor.
- Scheduling of major maintenance activity.

- Plan for testing equipment.
- Estimated life of Generation and/or Storage Facilities and associated Interconnection Facilities.
- Safety plan, including historical safety records with environmental history records, violations, and compliance plans.
- Security plan.
- Site maintenance plan.
- Substation equipment maintenance plan.

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

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

2.9.4 Describe if the Proposer will **coordinate their maintenance schedule** for the Project with the Company's annual planned generation maintenance. See Article 5 of the model RDG PPA.

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

2.10.1.1 For Generation Facilities, provide the projected **hourly annual energy potential production profile of the Facility⁵ (24 hours x 365 days, 8760 generation profile)** for the provided RFP NEP Projection.

⁵ The projected hourly annual energy production profile is the projected output from the generating facility without curtailment and before any energy is directed to an energy storage component, if one will be provided.

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

2.10.1.3 Provide a description of the Facility's **capability to be grid-forming and have black start capability**. For standalone energy storage or energy storage coupled with generation facilities, if black start is not a capability already enabled, provide a description of the modifications to the Facility necessary to enable black start and any additional cost to include that capability (within the summary tables of Section 2.0).

2.10.2 Capability of **Meeting Performance Standards**. The proposed Facility must meet the performance attributes identified in this RFP and the Performance Standards identified in the applicable RDG PPA or the ESPPA. Provide **confirmation that the proposed Facility will meet the requirements identified in the Model PPA** or provide clarification or comments about the Facility's ability to meet the performance standards. Proposals should include sufficient documentation to support the stated claim that the Facility will be able to meet the Performance Standards. The Proposal should include information required to make such a determination in an organized manner to ensure this evaluation can be completed within the evaluation review period.

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

2.10.4 **Ramp Rate** for Generation Facilities: Confirm the ability to meet the ramp rate requirement specified in the Model PPA.

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

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

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

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

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

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

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

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

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

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

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

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

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

- Number of cycles per day, or equivalent MWh storage output for a full year
- Ramp Rate: Provide the Facility's ramp rate, which should be no more than 2 MW/minute for all conditions other than those under control of the Company System Operator and/or those due to desired frequency response.
- System Response Time – Idle to Design Maximum (minutes)
- Discharge Start-up time (minutes from notification)
- Charge Start-up time (minutes from notification)
- Start and run-time limitations, if any

- Ancillary Services provided, if any (i.e. Spinning Reserves, Non-Spinning Reserves, Regulation Up, Regulation Down, Black Start capability, other)

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

2.10.18 For Projects or Project variations with a **Contingency Storage** component, provide a **description and details of the functionality, design, operation and capabilities**. The description should identify all assumptions and associated restrictions on the charging/discharging duty of the proposed Contingency Storage.

2.11 INTERCONNECTION REQUIREMENT STUDY

2.11.1 Provide the appropriate completed **Interconnection Requirement Study Data Request form** for the proposed technology with the Proposal submission. (The forms can be found in the “1. Download Documents” tab as Appx B Att 2 IRS Data Request Form (PV Generation), Appx B Att 3 IRS Data Request Form (Wind Generation) or Appx B Att 4 IRS Data Request Form (Sync Generation) MSEExcel files.) Also provide all **project single line 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 5.1 of the RFP.⁴ Proposers may also download the PSCAD model requirements memo labelled as Appx B Att 5 from the “1. Download Documents” tab also.

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

- 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 firm 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 Threshold Requirement and demonstrate the member(s) firm commitment to provide services to the Proposer.

2.13.3 Identify those **members of the team with experience and qualifications**, including affiliates, and their principal personnel who will be involved in the project contracting to sell and deliver energy. If the Proposer consists of multiple parties, such as joint ventures or partnerships, provide this information for each party, clearly indicating the proposed role of each party, including an ownership chart indicating direct and indirect ownership, and percentage interests in the partnership or joint venture.

2.13.4 Provide a **management chart** which lists the key personnel dedicated to this Project and provide **biographies / resumes** of the key personnel, including position, years of relevant experience, and similar project experience. 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 Hawai‘i.

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

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

2.14 STATE OF PROJECT DEVELOPMENT AND SCHEDULE

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

- The **schedule** must include:
 - Interconnection Requirement Study (IRS) assumptions

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

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

- Identification of contracting/subcontracting plans
- Modular construction
- Safety plans⁶
- 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.

⁶ A document that describes the various safety procedures and practices that will be implemented on the Project and how applicable safety regulations, standards, and work practices will be enforced on the Project.

3.0 MINOR PROPOSAL VARIATIONS

Proposers submitting minor variations to a Proposal must provide the **details of each variation in the below section(s)**. In each proposal variation section below, Proposers must add the applicable tables from Section 2.0 Proposal Summary of this Appendix B. The information in these tables should reflect the information for the variation being proposed. Additionally, Proposers must identify all changes to the information provided in response to Sections 2.1 through 2.14 of this Appendix B for the proposal variation. If differences are not identified for the Section 2.0 Proposal Summary or a particular section in Sections 2.1 through 2.14, the Company will assume that the information contained in the base Proposal also applies to the proposal variation.

Note: Section 2.2.2 above requires a table summarizing the differences among the variations, if variations are proposed.

3.1 PROPOSAL VARIATION 1 (BASE VARIATION)

N/A (All information for the base variation is identified in sections 2.0 through 2.14 above.)

3.2 PROPOSAL VARIATION 2 (AS NECESSARY)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.3 PROPOSAL VARIATION 3 (AS NECESSARY)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.4 PROPOSAL VARIATION 4 (AS NECESSARY)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.5 PROPOSAL VARIATION 5 (AS NECESSARY AND ALLOWED)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.6 PROPOSAL VARIATION 6 (AS NECESSARY AND ALLOWED)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.7 PROPOSAL VARIATION 7 (AS NECESSARY AND ALLOWED)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

3.8 PROPOSAL VARIATION 8 (AS NECESSARY AND ALLOWED)

Identified changes to Sections 2.0 through 2.14, as required for each variation.

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

Variable Renewable Dispatchable Generation and Energy Storage Stage 2 RFP

Pursuant to Section 1.7.3 of Hawaiian Electric Company, Inc., Hawai'i Electric Light Company, Inc. and Maui Electric Company, Limited's (each a "Company" and collectively, the "Companies") Request For Proposals for Variable Renewable Dispatchable Generation and Energy Storage ("RFP"), the Companies may require legal counsel who represent multiple unaffiliated proposers to sign a certification that they have not shared confidential information obtained through the representation of one proposer with any other 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: _____ ("Proposer");

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

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

(4) at the conclusion of power purchase agreement negotiations, if any, the Company may require me to sign a 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 Proposer (by contract or organizational structure), including other proposers responding to the RFP.

Name (print)

Law Firm (if applicable)

Signature

Date

Section 1.7.3 of the RFP provides in relevant part that:

In submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other unaffiliated person or entity. The Proposer shall acknowledge this in the Response Package submitted with its Proposal. Furthermore, in executing the NDA provided as Appendix E, the Proposer agrees on behalf of its Representatives (as defined in the NDA) that the Company's negotiating positions will not be shared with other Proposers or their respective Representatives.

In addition, in submitting a Proposal, a Proposer will be required to provide Company with its legal counsel's written certification in the form attached as Appendix B Attachment 1 certifying in relevant part that irrespective of any proposer's direction, waiver, or request to the contrary, that the attorney will not share a proposer's confidential information associated with such proposer, including, but not limited to, a proposer's or Company's negotiating positions, with third parties unaffiliated with Proposer (by contract or organizational structure), including other proposers

responding to the RFP. If legal counsel represents multiple unaffiliated proposers whose Proposals are selected for the Final Award Group, such counsel will also be required to submit a similar certification at the conclusion of power purchase agreement negotiations that he or she has not shared a proposer's confidential information or the Company's confidential information associated with such proposer, 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.

Appendix B Attachment 2

Interconnection Requirement Study - Data Request

Updated 7/16/2018

FOR PV GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)

*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

	Response
1) Please provide a plan map of the Non-Utility Generation (NUG) facility. Please indicate the interconnection point to the HECO system.	
2) Please provide the following generation and load information for the NUG 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.	

Appendix B Attachment 2

Interconnection Requirement Study - Data Request

Updated 7/16/2018

FOR PV GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)

*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

	Response
4) For the PV Inverter Based Generating 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. Ramp rates (up, down) Typical and Measured Proxy Data	
f. 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.	
g. Diagram for Inverter's internal isolation transformer	
h. Switching and service restoration practice	
i. 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.	
j. Details of filters etc. at Point of Interconnection	
k. Description of harmonic spectrum of inverter injection (order, magnitude)	
l. Description of PV inverter with respect to varying levels of solar irradiance	
5) Energy Storage System, if applicable	
a. Operation characteristics	
b. Voltage level	
c. Capacity (how long and how much can the battery support)	
d. Deployment strategy/schedule	
e. Energy storage system data sheet	
6) For the PV plant's collector system, please provide the following, as applicable:	
a. Conductor data such as size, insulation, etc.	
b. Continuous and emergency current ratings.	
c. Voltage rating (nominal and maximum kV).	
d. BIL rating.	
e. Positive, negative, and zero-sequence impedances (resistance, reactance, and susceptance).	
f. Capacitance or charging current.	
g. Short-circuit current capability.	

Appendix B Attachment 2

Interconnection Requirement Study - Data Request

Updated 7/16/2018

FOR PV GENERATION

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:	
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 Technical 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. Voltage plot validating the performance of inverter to meet the Companies' Transient Overvoltage (TrOV-2) policy. Plot shall show the inverter trip and resulting voltage and current waveforms. Refer to Appendix E of Companies' Grid Supportive Utility-Interactive Inverter Qualification Requirements.	
f. 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)	
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).	

Appendix B Attachment 2

Interconnection Requirement Study - Data Request

Updated 7/16/2018

FOR PV GENERATION

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.	
12) Please provide protective relay settings for existing and proposed generators, including but not limited to, reverse power, negative sequence, over and underfrequency, over and under voltage, volts per hertz, etc.	

Appendix B Attachment 2

Updated 6/15/11

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]

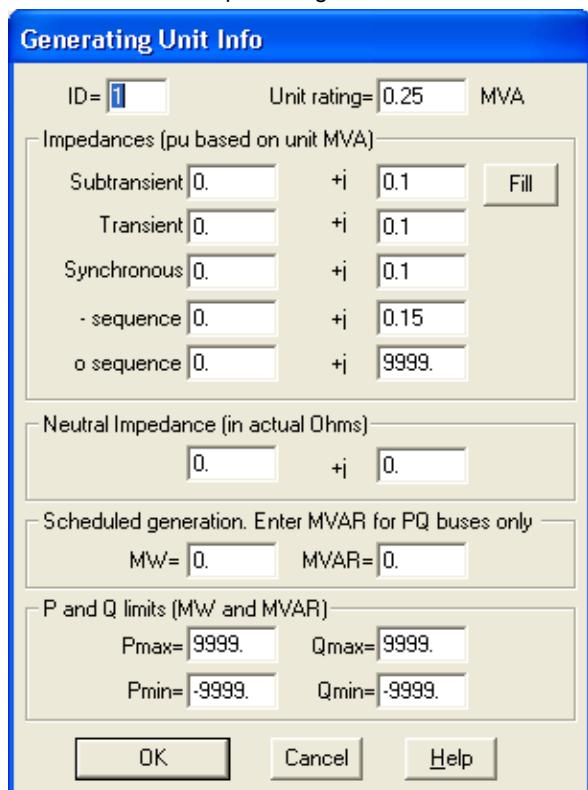
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

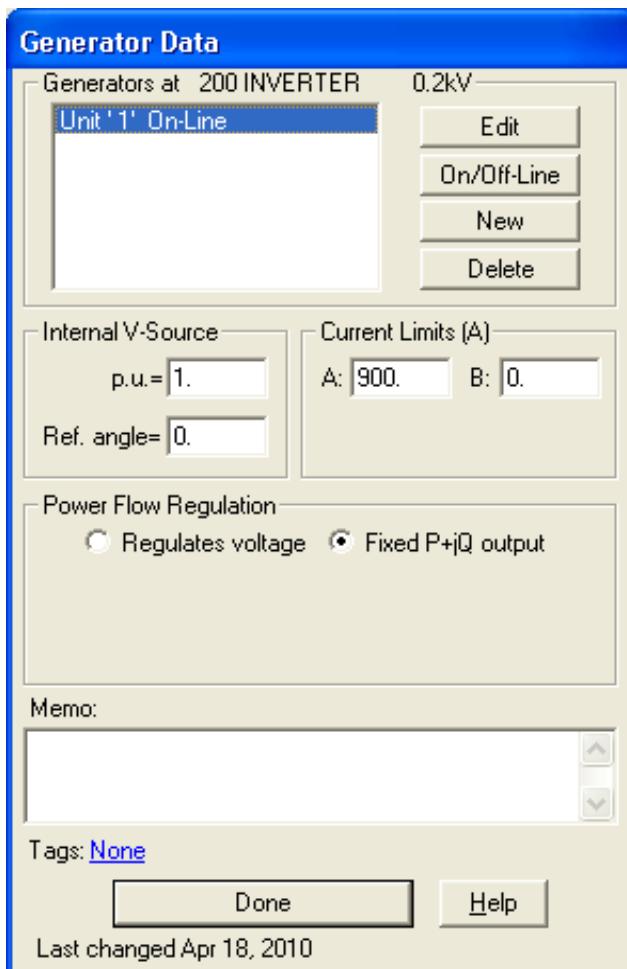
- [1] Internal open circuit voltage

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

(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:

2-Winding Transformer Data

100 480 V TERM 0.48kV - 200 INVERTER 0.2kV

Name= INV ISOL TX Ckt ID= 1 MVA1= 0.25 MVA2= 0.25 MVA3= 0.25

MVA base for per-unit quantities= 0.25

Y-D, delta lags (Yd 1) D-Y, delta leads (Dy 1)

R= 0.01 X= 0.03
 B= 0.
 Ro= 0.01 Xo= 0.03
 Bo= 0.

480 V TERM 0.48 kV INVERTER 0.2 kV Neutral grounding Z (ohms)

Tap kV= 0.48 Tap kV= 0.2
 G1*= 0. G2*= 0.
 B1*= 0. B2*= 0.
 G10*= 0. G20*= 0.
 B10*= 0. B20*= 0.

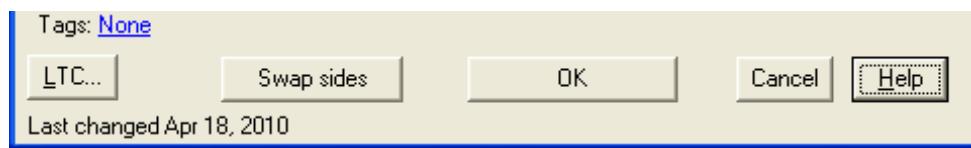
Zg1= 14. +j 0.

*Based on system MVA Metered at: 480 V TERM 0.48 kV

Memo:

Appendix B Attachment 2

Updated 6/15/11



Appendix B Attachment 3

Interconnection Requirement Study - Data Request

Updated 1/17/2018

FOR WIND GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)

*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

	Response
1) Please provide a plan map of the Non-Utility Generation (NUG) facility. Please indicate the interconnection point to the HECO system.	
2) Please provide the following generation and load information for the NUG 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.	

Appendix B Attachment 3

Interconnection Requirement Study - Data Request

FOR WIND GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)

*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

Updated 1/17/2018

	Response
4) For the Wind Generating Facility, please provide the following data:	
a. Turbine manufacturer, Type, Size, Impedances. Attach copy of turbine data sheet.	
b. Power Factor Range Capability	
c. Turbine Reactive Power Capability Curve	
d. Auxiliary loads (P, Q, Power Factor)	
e. Ramp rates (up, down) Typical and Measured Proxy Data	
f. Grounding Method (i.e. effectively grounded, resonant grounded, low inductance grounded, high-resistance grounded, low-resistance grounded, ungrounded). If the transformer is not solidly grounded or ungrounded, provide the impedance value for the grounding neutral, if applicable.	
g. Provide grounding diagram.	
h. Switching and service restoration practice	
i. 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.	
j. Details of filters etc. at Point of Interconnection	
k. Description of harmonic spectrum of inverter injection (order, magnitude)	
5) Energy Storage System, if applicable	
a. Operation characteristics	
b. Voltage level	
c. Capacity (how long and how much can the battery support)	
d. Deployment strategy/schedule	
e. Energy storage system data sheet	
6) For the Wind 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.	

Appendix B Attachment 3

Interconnection Requirement Study - Data Request

Updated 1/17/2018

FOR WIND GENERATION

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:	
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, wind turbines, and any other components including capacitor banks, energy storage systems, DVAR, etc. An equivalent representation of the collection system, generator step-up transformers, and turbines is acceptable. Documentation on the model shall be provided.	
b. Validated PSS/E dynamic model for the wind turbine; and other components including energy storage system, DVAR, etc. if applicable. The wind turbine model shall include the generator/converter, electrical controls, plant-level controller, protection relays, and mechanical systems that impact its electrical performance. 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 wind turbine; and other components including energy storage system, DVAR, etc. if applicable. Documentation on the model(s) shall be provided. Refer to PSCAD Technical 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)	
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).	

Appendix B Attachment 3

Interconnection Requirement Study - Data Request

Updated 1/17/2018

FOR WIND GENERATION

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.	
12) Please provide protective relay settings for existing and proposed generators, including but not limited to, reverse power, negative sequence, over and underfrequency, over and under voltage, volts per hertz, etc.	

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]

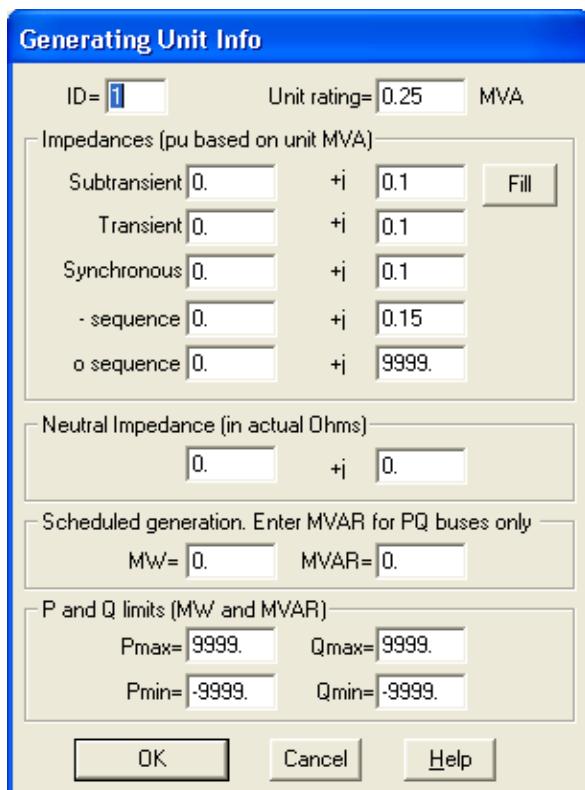
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

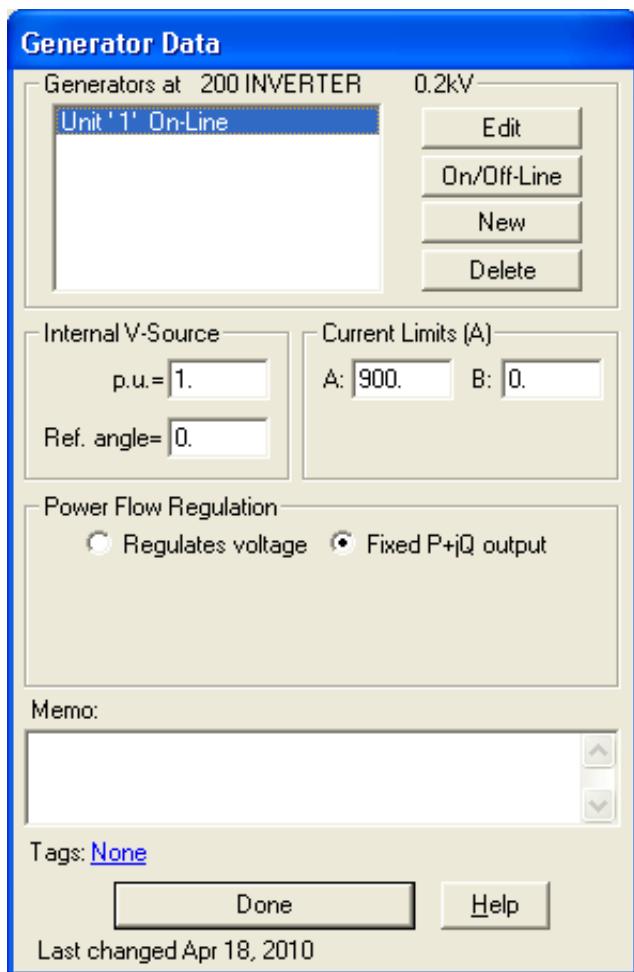
- [1] Internal open circuit voltage

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

(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

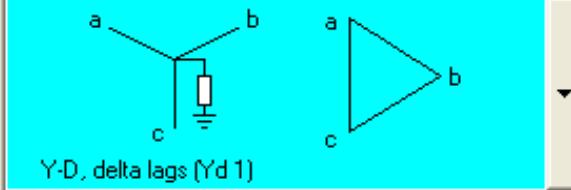
Positive Sequence = R X
 Zero Sequence =

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

R X
 |

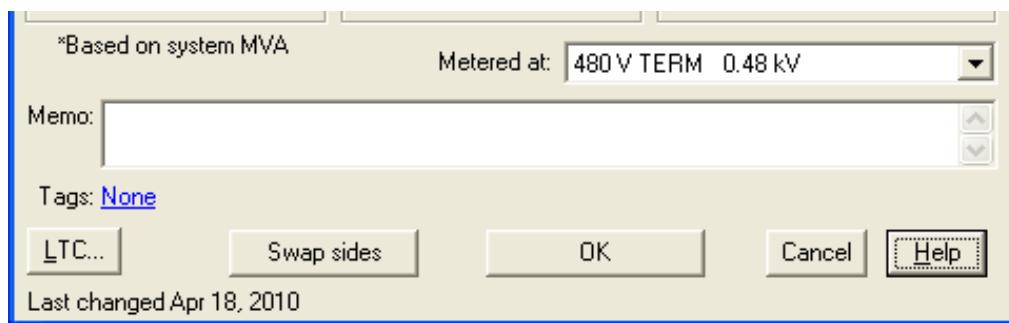
These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:

2-Winding Transformer Data

100 480 V TERM 0.48kV - 200 INVERTER 0.2kV			
Name= <input type="text"/> INV ISOL TX	Ckt ID= <input type="checkbox"/> 1	MVA1= <input type="text"/> 0.25	MVA2= <input type="text"/> 0.25
		MVA base for per-unit quantities= <input type="text"/> 0.25 <input type="button" value="Change"/>	
 Y-D, delta lags (Yd 1)		R= <input type="text"/> 0.01	X= <input type="text"/> 0.03
		B= <input type="text"/> 0.	
		Ro= <input type="text"/> 0.01	Xo= <input type="text"/> 0.03
		Bo= <input type="text"/> 0.	
480 V TERM 0.48 kV	INVERTER 0.2 kV	Neutral grounding Z (ohms)	
Tap kV= <input type="text"/> 0.48	Tap kV= <input type="text"/> 0.2	Zg1= <input type="text"/> 14. +i <input type="text"/> 0.	
G1*= <input type="text"/> 0.	G2*= <input type="text"/> 0.		
B1*= <input type="text"/> 0.	B2*= <input type="text"/> 0.		
G10*= <input type="text"/> 0.	G20*= <input type="text"/> 0.		
B10*= <input type="text"/> 0.	B20*= <input type="text"/> 0.		

Appendix B Attachment 3

Updated 6/15/11



Appendix B Attachment 4

**Interconnection Requirement Study - Data Request
FOR SYNCHRONOUS GENERATION**

Updated 2/13/2018

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 Non-Utility Generation (NUG) facility. Please indicate the interconnection point to the HECO system.	
2) Please provide the following generation and load information for the NUG 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.	

Appendix B Attachment 4

Interconnection Requirement Study - Data Request

Updated 2/13/2018

FOR SYNCHRONOUS GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)

*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

	Response
4) For the Synchronous Generating Facility, please provide the following data:	
a. Generator manufacturer, Model, Type. Attach copy of generator data sheet.	
b. Generator Characteristics (SEE "GENERATOR DATA" TAB)	
c. Auxiliary loads (P, Q, Power Factor)	
d. Ramp rates (up, down) Typical and Measured Proxy Data	
e. Switching and service restoration practice	
f. 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.	
g. Details of filters etc. at Point of Interconnection	
h. Description of harmonic spectrum of generator injection (order, magnitude)	
5) Energy Storage System, if applicable	
a. Operation characteristics	
b. Voltage level	
c. Capacity (how long and how much can the battery support)	
d. Deployment strategy/schedule	
e. Energy storage system data sheet	
6) Please provide the following software models that accurately represent the Facility:	
a. Validated PSS/E load flow model up to the point of interconnection. The PSS/E model shall include the main transformer, collection system (if applicable), generator step-up transformers (if applicable), generator, and any other components including capacitor banks, energy storage systems, DVAR, etc. Documentation on the model shall be provided.	
b. Validated PSS/E dynamic model for the generator, and other components including energy storage system, DVAR, etc. if applicable. The generator model shall include the generator/converter, excitation system, governor system, power system stabilizer (if applicable), and protection relays that impact its electrical performance. Generic models shall be provided. Detailed Models shall be provided for inverter-based systems (energy storage, DVAR, etc). 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. Exciter model shall conform to IEEE Std 421.5. Generic models shall be selected from NERC "Acceptable_Models_list_2017-08-19.xlsx"	
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 generator, and other components including energy storage system, DVAR, etc. if applicable. Documentation on the model(s) shall be provided. Refer to PSCAD Technical 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)	

Appendix B Attachment 4

Interconnection Requirement Study - Data Request

Updated 2/13/2018

FOR SYNCHRONOUS GENERATION

PROJECT: _____

DATE: _____

(Nonexclusive Preliminary List)*****ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.*****

		Response
7)	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.	
8)	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).	
9)	For the power fuses, please provide:	
	a. The manufacturer, type, size, and interrupting capability.	
	b. The minimum melt and total clearing curves.	
10)	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.	
11)	Please provide protective relay settings for existing and proposed generators, including but not limited to, reverse power, negative sequence, over and underfrequency, over and under voltage, volts per hertz, etc.	

Appendix B Attachment 4

Interconnection Requirement Study - Data Request

Updated 2/13/2018

FOR SYNCHRONOUS GENERATION

PROJECT: _____

DATE: _____

ALL ITEMS ARE REQUIRED AND ALL RESPONSES MUST BE FILLED UNLESS NOT APPLICABLE.

A)	Please provide the following generator machine information:	Response
a.	Generator Base MVA	
b.	Generator Rated Terminal Voltage (kV)	
c.	Power Factor Range Capability	
d.	Generator Reactive Power Capability Curve	
e.	Generator impedance in per unit	
i.	Positive sequence	
ii.	Negative sequence	
iii.	Zero sequence:	
f.	Combined Turbine-Generator Inertia Constant, H (kW-sec / KVA)	
g.	Speed damping factor (D)	
h.	Generator Open-Circuit Saturation Factors. Attach Generator Saturation Curves.	
i.	S(1.0):	
ii.	S(1.2):	
l.	Generator V-curve	

B)	Please provide the following generator reactance data (in per unit on Machine MVA Base):	Response	Response
	Direct Axis		Quadrature Axis
a.	Synchronous - Saturated (X _{dv})		a. Synchronous - Saturated (X _{qv})
b.	Synchronous - Unsaturated (X _{di})		b. Synchronous - Unsaturated (X _{qi})
c.	Transient - Saturated (X' _{dv})		c. Transient - Saturated (X' _{qv})
d.	Transient - Unsaturated (X' _{di})		d. Transient - Unsaturated (X' _{qi})
e.	Subtransient - Saturated (X" _{dv})		e. Subtransient - Saturated (X" _{qv})
f.	Subtransient - Unsaturated (X" _{di})		f. Subtransient - Unsaturated (X" _{qi})
g.	Negative Sequence - Saturated (X _{2v})		
h.	Negative Sequence - Unsaturated (X _{2i})		
i.	Zero Sequence - Saturated (X _{0v})		
j.	Zero Sequence - Unsaturated (X _{0i})		
k.	Leakage Reactance (X _{lm})		

C)	Please provide the following generator time constants (in seconds):	Response	Response
	Direct Axis		Quadrature Axis
a.	Transient Open Circuit (T ["] _{do})		a. Transient Open Circuit (T ["] _{qo})
b.	Subtransient Open Circuit (T ["] _{do})		b. Subtransient Open Circuit (T ["] _{qo})
c.	Transient Short Circuit (T ["] _d)		c. Transient Short Circuit (T ["] _q)
d.	Subtransient Short Circuit (T ["] _d)		d. Subtransient Short Circuit (T ["] _q)

Appendix B Attachment 4

Updated 6/15/11

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]

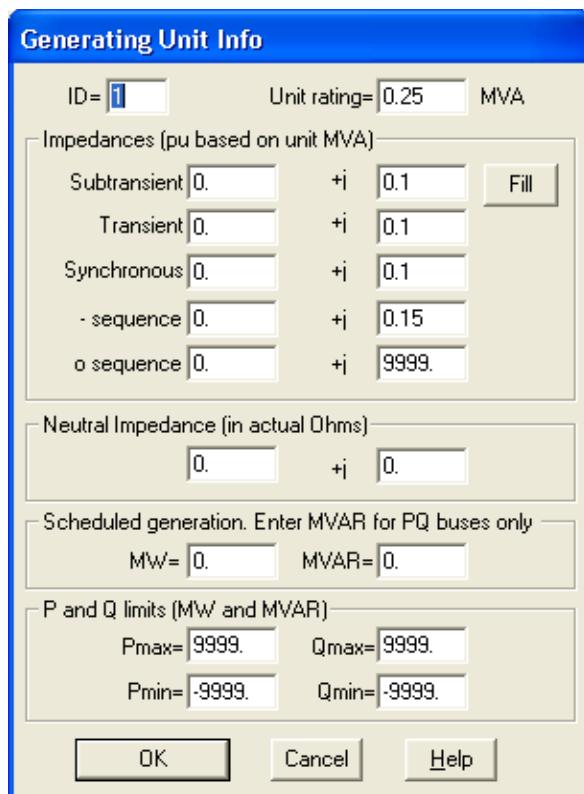
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

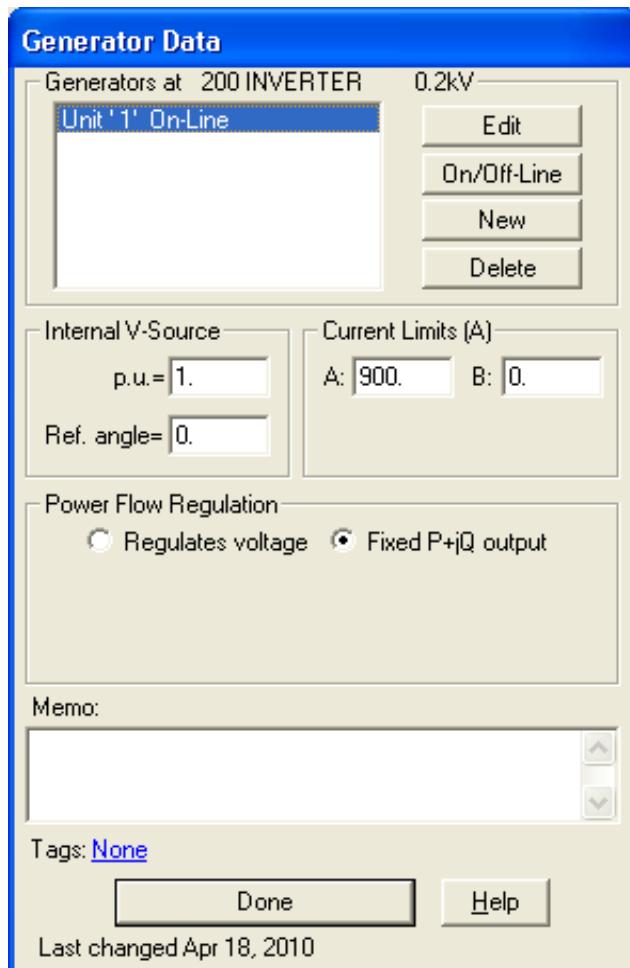
- [1] Internal open circuit voltage

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

(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

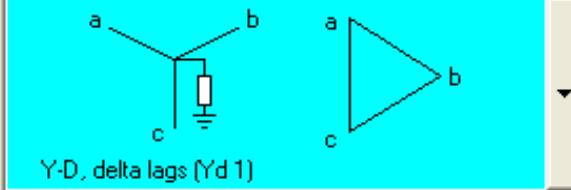
Positive Sequence =
 Zero Sequence =

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

R	X	

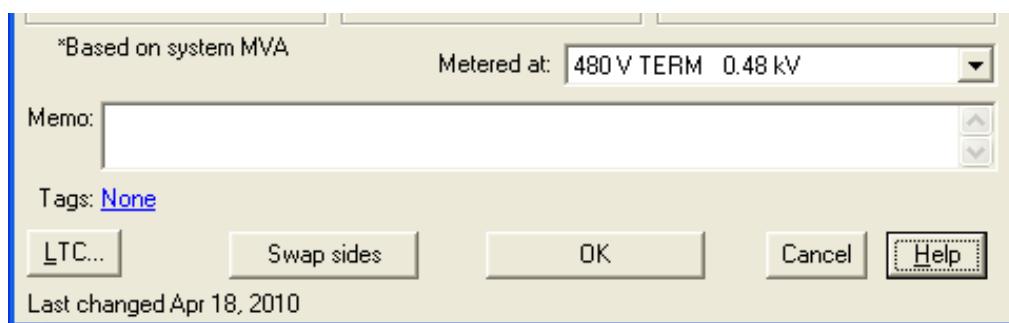
These parameters will be used to model the inverter in the Aspen Oneliner program as shown in the sample dialog box below:

2-Winding Transformer Data

100 480 V TERM 0.48kV - 200 INVERTER 0.2kV			
Name= <input type="text"/> INV ISOL TX	Ckt ID= <input type="checkbox"/> 1	MVA1= <input type="text"/> 0.25	MVA2= <input type="text"/> 0.25
		MVA base for per-unit quantities= <input type="text"/> 0.25 <input type="button" value="Change"/>	
 Y-D, delta lags (Yd 1)		R= <input type="text"/> 0.01	X= <input type="text"/> 0.03
		B= <input type="text"/> 0.	
		Ro= <input type="text"/> 0.01	Xo= <input type="text"/> 0.03
		Bo= <input type="text"/> 0.	
480 V TERM 0.48 kV	INVERTER 0.2 kV	Neutral grounding Z (ohms)	
Tap kV= <input type="text"/> 0.48	Tap kV= <input type="text"/> 0.2	Zg1= <input type="text"/> 14. +i <input type="text"/> 0.	
G1*= <input type="text"/> 0.	G2*= <input type="text"/> 0.		
B1*= <input type="text"/> 0.	B2*= <input type="text"/> 0.		
G10*= <input type="text"/> 0.	G20*= <input type="text"/> 0.		
B10*= <input type="text"/> 0.	B20*= <input type="text"/> 0.		

Appendix B Attachment 4

Updated 6/15/11



Appendix B Attachment 5

Recommended PSCAD model requirements Rev. 5

Date: February 15, 2018

Prepared By: Andrew L. Isaacs P.Eng.

Garth Irwin P.Eng.

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Winnipeg, MB, Canada, R3Y 1P6
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Introduction

Specific model requirements for a PSCAD study depend on the type of study being done. A study with a scope covering weak system interconnections, ride-through evaluation, short term¹ event response, and fast control interaction with nearby devices (for example) would require a model which has the following characteristics. Some specialty studies may require other features.

Model Accuracy Features

For the model to be sufficiently accurate, it must:

- A. *Represent the full detailed inner control loops of the power electronics.* The model cannot use the same approximations classically used in transient stability modeling, and should fully represent all fast inner controls, as implemented in the real equipment. It is possible to create models which embed the actual hardware code into a PSCAD component, and this is the recommended type of model.²
- B. *Represent all control features pertinent to the type of study being done.* This may include external voltage controllers, plant level controllers, customized PLLs, ride-through controllers, SSCI damping controllers or others. As in point A, actual hardware code is recommended to be used for most control and protection features. Operating modes that require system specific adjustment should be user accessible. In most cases, plant level voltage control should be represented along with adjustable droop characteristics.
- C. *Represent all pertinent electrical and mechanical configurations.* This includes any filters and specialized transformers. There may be other mechanical features such as gearboxes, pitch controllers, or others which should be modelled if they impact electrical performance within the timeframe of the study. Any control or dynamic features of the actual equipment which may influence behaviour in the simulation period which are not represented or which are approximated should be clearly identified.
- D. *Have all pertinent protections modeled in detail for both balanced and unbalanced fault conditions.* Typically this includes various OV and UV protections (individual phase and RMS), frequency protections, DC bus voltage protections, converter overcurrent protections, and often other inverter

¹ Example analysis periods could be 2 to 10 seconds from fault inception. Some studies could require longer periods.

² The model must be a full IGBT representation (preferred), or may use a voltage source interface that mimics IGBT switching (ie. A firing pulse based model). A three phase sinusoidal source representation is not acceptable. Models manually translated block-by-block from MATLAB or control block diagrams may be unacceptable because the method used to model the electrical network and interface to the controls may not be accurate, or portions of the controls such as PLL circuits or protection circuits may be approximated or omitted. Note, however, that Matlab may be used to generate C code which is used in the real control hardware, and if this approach is used by the developer, the same C code may be directly used to create an extremely accurate PSCAD model of the controls. The controller source code may be compiled into DLLs or binaries if the source code is unavailable due to confidentiality restrictions.

If the model is assembled using standard blocks available in the PSCAD master library, approximations are usually introduced, and specific implementation details for important control blocks may be lost. In addition, there is a risk that errors will be introduced in the process of manually assembling the model. For this type of manually assembled model, (not using a direct “real code” embedding process), extra care is required, and validation is recommended.

specific protections. As in point A, actual hardware code is recommended to be used for these protection features.

- E. *Be configured to match expected site-specific equipment settings.* Any user-tunable parameters or options should be set in the model to match the equipment at the specific site being evaluated, as far as they are known. Default parameters may not be appropriate.

Model Usability Features

In order to allow study engineers to perform system analysis using the model, the PSCAD model must:

- F. *Have control or hardware options which are pertinent to the study accessible to the user.* Examples of this could include protection thresholds, real power recovery ramp rates, or SSCI damping controllers.³ Diagnostic flags (eg. flags to show control mode changes or which protection has been activated) should be visible to aid in analysis.
- G. *Be accurate when running at a simulation time step of 10 us or higher.* Often, requiring a smaller time step means that the control implementation has not used the interpolation features of PSCAD, or is using inappropriate interfacing between the model and the larger network. Lack of interpolation support introduces inaccuracies into the model at larger simulation time-steps.
- H. *Have the ability to disable protection models.* Many studies result in inadvertent tripping of converter equipment, and the ability to disable protection functions temporarily provides study engineers with valuable system diagnostic information.
- I. *Include documentation and a sample implementation test case.* Test case models should be configured according to the site-specific real equipment configuration. Access to technical support engineers is desirable.
- J. *Accept external reference variables.* This includes real and reactive power ordered values for Q control modes, or voltage reference values for voltage control modes. Model should accept these reference variables for initialization, and be capable of changing these reference variables mid-simulation, ie. dynamic signal references.
- K. *Be capable of initializing itself.* Once provided with initial condition variables, the model must initialize and ramp to the ordered output without external input from simulation engineers. Any slower control functions which are included (such as switched shunt controllers) should also accept initial condition variables if required.
- L. *Have the ability to scale plant capacity.* The active power capacity of the model should be scalable in some way, either internally or through an external scaling transformer⁴. This is distinct from a dispatchable power order, and is used for modeling different capacities of plant or breaking a lumped equivalent plant into smaller composite models.

³ Care should be taken to ensure that any user-settable options are not changed in a way that is not implementable in the real hardware, and that any selectable options are actually available at the specific site being considered. Discussion is recommended with the manufacturer prior to any changes being made in model configuration.

⁴ A free publicly available scaling transformer suitable for this purpose is available in the E-Tran library.

Appendix B Attachment 5
Recommended PSCAD Model Requirements Rev. 5
February 15, 2018

Study Efficiency Features

In addition, the following elements are required to improve study efficiency, model compatibility, and enable other studies which include the model to be run as efficiently as possible. If these features are not supported, additional discussion is required⁵:

- M. Model should be compiled using Intel Fortran compiler version 9 or higher. Intel Fortran version 12 or higher is preferred. Model should not be dependent on a specific Fortran version to run.
- N. Model uses PSCAD version 4.5.3 or higher.
- O. Model initializes as quickly as possible (for example <5 seconds) to user supplied terminal conditions.
- P. Model supports multiple instances of its own definition in the same simulation case.
- Q. Model supports the PSCAD “snapshot” feature.
- R. Model supports the PSCAD “multiple run” feature.

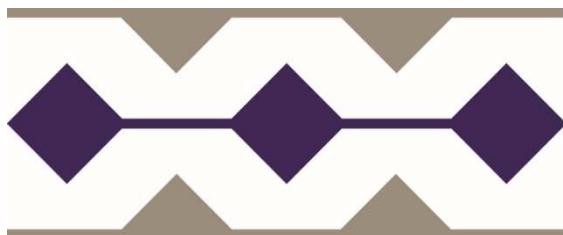
⁵ Electranix has parallelization tools available (E-Tran Plus for PSCAD) which can circumvent compatibility concerns in some cases.

**REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU**

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix C – Code of Conduct Procedures
Manual*



**Hawaiian
Electric**

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

Code of Conduct Procedures Manual

I. INTRODUCTION

The Framework for Competitive Bidding ("Framework") adopted on December 8, 2006, by the Public Utilities Commission of the State of Hawaii (the "Commission") pursuant to Decision and Order No. 23121 (Docket No. 03-0372, Instituting a Proceeding to Investigate Competitive Bidding for New Generating Capacity in Hawaii) requires that the utility develop and follow a Code of Conduct whenever a utility or its affiliate seeks to advance an energy generation resource proposal in response to a request for proposals ("RFP") issued by the Company. Section III.A.4 of the Framework required the utility to submit to the Commission for review and approval (subject to modification if necessary) a Code of Conduct prior to the commencement of any competitive bid process under the Framework. On June 7, 2007, by letter to the Commission, the Company submitted its form of Code of Conduct for Commission review and approval. By Decision and Order No. 23614 (Docket No. 03-0372), issued August 28, 2007, the Commission approved the Code of Conduct. Amendments to the Code of Conduct were approved by the Commission for Stage 1 of the Companies' 2018 Variable RFP by Order No. 35286, issued on February 20, 2018, in Docket No. 2017-0352.

This Code of Conduct Procedures Manual has been developed to outline the procedures to be followed and the policies that have been developed surrounding the implementation of the Companies' competitive bidding process for new generating capacity. The Companies' initial Code of Conduct Procedures Manual ("Manual") was approved by the Commission for Stage 1 of the Companies' 2018 Variable RFP by Order No. 35286, issued February 20, 2018, in Docket No. 2017-0352. This Code of Conduct Procedures Manual has been developed for the Companies' Variable Renewable Dispatchable Generation and Energy Storage Stage 2 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 Company Self-Build team, and others; (3) the documentation forms, including logs for any communications with proposers; and (4) other information

consistent with the requirements of the solicitation process. Requirement (2) of the section, the evaluation process in detail and the methodologies for undertaking the evaluation process for the RFP are described in detail in Chapter 4 (Evaluation Process and Evaluation Criteria) of the Variable Renewable Dispatchable Generation and Energy Storage RFP Stage 2. 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 (See Appendix I (Tariff Rule 19) of the RFP).

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

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

II. DEFINITIONS

- Affiliate – 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 – A written code developed by Hawaiian Electric Company, Inc., Maui Electric Company, Limited and Hawaii Electric Light Company, Inc. (each, a “Company” and collectively, the “Companies”) to ensure the fairness and integrity of the competitive bidding process, in particular where the host utility or its affiliate seeks to advance its own resource proposal in response to an RFP. The Code of Conduct follows the requirements described in Section IV.H.9.c of the Framework and was approved by the Commission in Decision & Order No. 23614, and amended and approved by Order No. 35286 issued on February 20, 2018, in Docket No. 2017-0352.
- Communications Log – A written record to note activities and/or information shared between the Company RFP Team or Company Self-Build Team with Shared Resources or Unassigned Company Resources, accessed via the RFP Communication Tool Kit SharePoint Site.
- Company Executive in Charge – A Company’s executive responsible for ensuring compliance with this Code of Conduct and serving as the point of contact for the Independent Observer for reporting any violations by the Company of the Code of Conduct. For any RFP of the Companies, the Company Executive in Charge shall be the Senior Vice President of Business Development & Strategic Planning. The Company’s Corporate Compliance Officer shall remain responsible for the Companies’ independent corporate code of conduct and may support compliance matters and questions arising with employees, agents and other representatives of the Company, e.g., conflicts of interest, with respect to this Code of Conduct.
- Company RFP Team – The Company personnel and outside consultants responsible for the development of the Company’s RFPs conducted under the Framework and the evaluation of bids submitted in response to these RFPs. Subject to the transfer rules specified herein, the Company RFP Team will have fixed team members who will not have any involvement with the Company Self-Build Team for the subject RFP.
- Company Self-Build Team – The Company personnel and outside consultants responsible for the development of the Company’s self-build response to the RFP. Subject to the transfer rules specified herein, the Company Self-Build Team

will have fixed team members who will not have any involvement with the Company RFP Team for the subject RFP.

- Competitive Bidding Code of Conduct Acknowledgement of Receipt (Acknowledgement) – A document that must be signed that shows acknowledgement of receipt of the Code of Conduct and a person's responsibility to comply with the Code.
- Confidential Information – Any non-public information developed and provided by the Company (i.e., proprietary system information, etc.) or Proposers during the RFP process (such non-public information may include, for example, the identity of competing Proposers, and their technical, trade or financial information). This term includes any material non-public information regarding the RFP process developed for and used during the competitive bidding solicitation process, such as the evaluation process or criteria. Confidential Information does not include public information, such as information in the Companies' public filings with the Commission.
- Director of Renewable Acquisition – The supervisor of the Division that will oversee the Company's competitive bidding process.
- Eligible Proposer – A Proposer who has met the minimum requirements and threshold requirements in the RFP necessary to remain eligible to compete in the process.
- Energy Contract Manager – The staff position(s) within the Company's Renewable Acquisition Division responsible for managing the Company RFP Team(s). The Energy Contract Manager shall be a member of the Company RFP Team he/she manages.
- Framework – The Framework for Competitive Bidding contained in Decision & Order No. 23121 issued by Commission on December 8, 2006, to establish rules for competitive bidding in response to a request for proposals when a utility seeks to acquire new generation resources.
- Independent Observer ("IO") – The neutral person or entity appointed by the Commission 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 Renewable Acquisition Division responsible for directing the resources responsible for the implementation of the competitive bidding process pursuant to the Framework. The Manager of Energy Procurement will report to the Director of Renewable Acquisition on the status of the competitive bidding process and shall be a member of the Company RFP Team.
- Non-Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal non-price related criteria as set forth in these RFPs. Non-Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Price Evaluation Team – Employees and consultants of the Company who evaluate the Proposal price related criteria set forth in these RFPs. Price Evaluation Team members will not include any Shared Resources and will be solely made up of Company RFP Team Members.
- Proposer – Entity who submits or plans to submit a proposal in response to a Company-issued RFP. An Affiliate of the Company or a Company Self-Build Team participating in the RFP and submitting a proposal shall be considered a Proposer.
- RFP – A written request for proposals issued by one of the Companies to publicly solicit bids to supply future generating capacity to the Company pursuant to the competitive bidding process established in the Framework.
- Roster – A consolidated list of members that comprise the Company RFP Team, Company Self-Build Team, Shared Resources and Unassigned Company Resources located in the RFP Communication Tool Kit SharePoint Site. Company employee names and titles and consultants in their designated role will be identified.
- Shared Resource – Company employees and consultants who, because of the scarcity of their expertise within the Company, are designated and authorized to provide information or input to both the Company RFP Team and the Company Self-Build Team (but not any Affiliate Team) and is not a resource dedicated to either team. For example, Shared Resources may include an environmental attorney and members of the Company's Risk Management Department.

- Unassigned Company Resource – Company employees unassigned to an essential team that may be called upon by the Company RFP Team and/or the Company Self-Build Team (but not any Affiliate Team) to assist in meeting unforeseen tasks for the RFP or the self-build proposal. For example, the Company RFP Team may be unable to evaluate an unforeseen technical specification included in a bid. In that event, the Company RFP team would need to request assistance from a Company employee or a consultant that is not already assigned to an essential team and possesses the specific expertise. Such personnel are intended to assist the requesting team only in an ad hoc manner, limited in scope and purpose to the particular task required.

III. STATEMENT OF OBJECTIVES

From time to time, each of the Companies will be proposing to seek power supply proposals for electric generation resources that best meet the needs of the respective Company's system. The timing for issuance of RFPs for each of the systems will be dependent upon the Commission's approval of the associated resource plan and the necessary competitive bidding procedures identified in the Framework and upon the timing of the need for capacity for each island. Each of the Companies will undertake a detailed multi-stage review and evaluation process whereby eligible proposals will be selected based upon their ability to most cost-effectively and reliably satisfy the requesting Company's resource requirements. While cost minimization is a major criterion, the Companies' objective is to select those resources which, in their opinion, represent the best value to the Companies and their customers regarding economic and technical attributes, limited risk, and flexibility for meeting their projected requirements. The individual RFPs seeking generation resources, including the Variable Renewable Dispatchable Generation and Energy Storage Stage 2 RFP, are part of the Companies' overall renewable resource procurement plan, which is based on the Companies' ongoing long range planning, but also may be revised on short notice in order to address unforeseen events such as premature equipment failures or natural events. With each successive RFP, the Companies are not only seeking to procure additional renewable energy that is required to meet the RPS goals, but also continually building off results of previous RFPs to continue to meet the above objective.

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

The Code of Conduct and this Manual address (1) communication requirements and procedures associated with the relationship between utility employees (Company RFP Team, Company Self-Build Team, Shared Resources and Unassigned Company Resources); (2) communication requirements and procedures associated with the relationship between the Company RFP Team, the Company Self-Build Team and Proposers; and (3) communication requirements associated with the relationship between Company management and the Company RFP Team.

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

IV. ORGANIZATION AND COMMUNICATION RESPONSIBILITIES

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

A. Organization

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

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

Company employees unassigned to an RFP may be called upon by the Company RFP Team, Company Self-Build Team, or both for help to meet unforeseen tasks. After completing the Code of Conduct training, these "Unassigned Company Resources" are

eligible to assist on an ad hoc basis with the requirement that all communications as an Unassigned Company Resource must be memorialized and logged in the same manner as communications with Shared Resources on the Communication Log. If an Unassigned Company Resource is called upon repeatedly for a substantial amount of assistance by a particular team, the employee should be assigned to such team or evaluated for designation as a shared resource.

B. Essential Teams

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

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

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

2. The Company Self-Build Team. The Company Self-Build Team, tasked with preparing any Company proposal to be submitted by the Company in response to a Company RFP, will consist primarily of Company employees, along with possible outside consultants with backgrounds in a number of disciplines necessary to complete a competitive proposal in response to 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 any RFP and shall have no access to, interaction or communications with Shared Resources or Unassigned Company Resources for the purpose of completing a proposal in response to any RFP. Affiliate Teams shall also be subject at all times to the terms, conditions and restrictions specified in the Company's ATRs.

4. Transfers between Teams. As members of both the Company RFP Team and the Company Self-Build Team are intended to be fixed, transfers between teams should not be permitted. However, there will be instances where a member of a particular team (whether Company RFP or Company Self-Build) transfers to a position in which he/she may be requested, as part of his/her new job responsibilities,

to participate as a member of the other team. Such employee shall not be permitted to transfer from one team to the other during the pendency of any particular RFP (or stage or phase of a particular RFP). After completion of the RFP (or stage or phase of a particular RFP) under which the employee recently participated, the employee may transfer to the other team under the following conditions: (a) the employee is prohibited from disclosing any Confidential Information known to such employee as a result of being a member of his/her former team with members of the new team he/she is joining; and (b) for a period of one (1) year, such employee shall not participate or be involved in the evaluation of any subsequent stage(s) or phase(s) of a prior RFP which such employee participated in with his/her former team.

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

C. Communications Protocols

1. Overview and General Requirements.

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

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

Each employee or consultant on the Company RFP Team, Company Self-Build Team and Shared Resources shall read, acknowledge and sign the Competitive

Bidding Code of Conduct Acknowledgement of Receipt. Unassigned Company Resources who are called upon by the Company RFP Team or Company Self-Build Team for help to meet unforeseen tasks shall also read, acknowledge and sign the Competitive Bidding Code of Conduct Acknowledgement of Receipt.

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

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

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

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

2. Communications Between the Company RFP Team and Proposers, including the Company Self-Build Team and any Affiliate Team.

During the RFP process, the Energy Contract Manager shall serve as the primary contact person for all RFP communications with Proposers. This is important from the standpoint of maintaining consistency and confidentiality of information between Proposers and the Company. For documentation and oversight purposes, all communications from Proposers must be submitted to an established website link provided by the Company (the "Company RFP website"). The IO will monitor all communications through the Company RFP website. To ensure fair and equal access to information, any Company Self-Build Team and/or Affiliate Team shall be considered a Proposer for communication purposes and any request for information from the Company Self-Build Team or Affiliate Team to the Company RFP Team shall be through the Company RFP website.

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

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

- a. Other than during Company sponsored conferences, Proposers must submit all questions to the Company RFP website or the designated RFP email address (if the Company RFP website has not been opened yet for the RFP).
- b. Questions will be reviewed and responses will be coordinated with the appropriate functional area within the Company for a response. Every reasonable effort will be made to provide responses in a timely manner.

- c. All responses, including the classification of such response, i.e., whether non-confidential or confidential as described below, will be provided to the IO for monitoring purposes via email or the PowerAdvocate messaging system. The IO may choose to comment on any response at its discretion.
- d. Depending on the questions received, responses may involve Confidential Information of the Company and/or Proposers. Release of any Company Confidential Information must be approved in advance by the Company executive authorized to release the Confidential Information. Any release of Company Confidential Information shall be accompanied by appropriate confidentiality and non-disclosure agreements, protective orders or other means required to maintain the confidentiality of the Company Confidential Information while still permitting its disclosure under circumstances deemed appropriate by the responsible Company executive. Other non-Company Confidential Information will not be shared without the prior written consent of the owner of such Confidential Information and the execution of appropriate confidentiality and non-disclosure agreements by all recipients of such Confidential Information. Responses will be categorized as follows:
 - i. Non-Confidential Responses: Questions and responses will either be posted directly on the Company RFP website (process-related questions or simple, non-substantive information) or a description of the information that can be made available will be posted and Proposers will be instructed to submit a request to the Company via the Company RFP website to receive a copy.
 - ii. Confidential Responses: Questions and a description or notice of a Confidential Information response will be posted on

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

iii. Process for Distribution of Confidential Information: Confidential Information provided in response to questions from proposers may be made available only to parties as indicated above via the following:

A. Confidential Information that is approved for exchanging on a secured access site: (1) Confidential Information may be made available on a secured website with an individual password provided to each approved Proposer; and (2) Confidential Information in documents may be transmitted to approved recipients through the Company's secure email system.

B. Confidential Information that can be made available for inspection only, but cannot be copied: There may be some types of Confidential Information that the Company may consider making available for inspection only with no copies allowed. This type of Confidential Information will be made available on Company premises for inspection only. Proposers will be advised via the Company RFP website to make arrangements with Company staff to view the Confidential Information.

C. Confidential Information that may not be released:

In the event that Proposers submit questions that require responses that the Company feels are not appropriate to provide for reasons which may include, but not be limited to, safety, security, protection of trade secrets or intellectual property rights, Proposers will be advised as such via the Company RFP website.

- e. Prior to and during the RFP, and outside of the Company RFP website protocol, developers may direct questions to the Company prior to submitting a Proposal to discuss specific questions regarding their specific Proposal. Questions shall be directed to the Company Contact for Proposals listed in RFP Section 1.6. Questions and responses that do not contain Confidential Information and which are deemed relevant to all Proposers will be published without identifying information via the Company RFP website.
- f. Once bids are received, the Company may submit information requests to Proposers to clarify their proposals or request additional information. All contacts with Proposers will be through the Company RFP website. All contacts and information exchanged will be under the oversight of the IO.
- g. A single exception to the communication process outlined above shall be instituted for the purpose of facilitating the verification of proposed project models and documentation required to perform the IRS. For this limited scope, the Company's Manager of Interconnection Services will serve as the primary contact person for all such interconnection communications with the Proposers on the Priority List, provided that all necessary confidentiality and

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

3. Communications Between the Companies and the Commission.

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

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

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

5. Communications Between the Company RFP Team and the Company Self-Build Team or any Affiliate Team.

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

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

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

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

Shared Resources may provide services to the Company RFP Team and the Company Self-Build Team (but not any Affiliate Team). Shared Resources shall be limited as much as possible to instances where Company resources cannot provide a dedicated member to the Company RFP Team and the Company Self-Build Team at the

same time and still provide the necessary functions of its area to the Company as a whole. Shared Resources are expressly prohibited from providing any information developed on behalf of the Company RFP Team to the Company Self-Build Team or any information developed on behalf of the Company Self-Build Team with the Company RFP Team, except through the formal communication process outlined above, i.e., through the Company RFP website.

Additionally, a written record of the time, date and substance of all conversations, data and written material directly or indirectly exchanged with the Company RFP Team or the Company Self-Build Team that pertain to the RFP shall be maintained on the Communications Log. The RFP Communication Tool Kit SharePoint Site will be set up and managed by the Energy Contract Manager to provide an easy to use and understand mechanism to log and memorialize these conversations.

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

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

There may be times where a Company RFP or Company Self-Build team (but not an Affiliate Team) member may need ancillary or other ministerial or administrative assistance that requires communication and/or assistance from Company personnel who are neither on any team nor considered a Shared Resource. Under those circumstances, such personnel may assist the requesting team member on an ad hoc basis upon the following conditions:

- a. The essential team member making the request must inform the Company personnel that sharing of the requested information or

assistance with the other team, be it the Company RFP or Company Self-Build Team, is expressly prohibited under the Code of Conduct.

b. The assisting Company personnel shall complete the Code of Conduct training and sign the Acknowledgement.

c. The assisting Company personnel shall be directed to the Roster provided by such requesting team member to determine and/or confirm the restrictions on communication with the other team members. The essential team member making the request will ensure the Roster is updated by the Energy Contract Manager to include the assisting Company personnel.

d. A written record of the time, date and substance of all conversations, data and written material directly or indirectly exchanged with the Company RFP Team or the Company Self-Build Team that pertain to the RFP shall be maintained on the Communication Log. The RFP Communication Tool Kit SharePoint Site will be set up and managed by the Energy Contract Manager to provide an easy to use and understand mechanism to log and memorialize these conversations.

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

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

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

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

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

In all instances, it is possible that any particular situation above may be addressed and/or resolved by the terms and conditions of the Company's internal code of conduct implemented for all employees and consultants of the Company. As

appropriate, an Approver or any other team member, Energy Contract Manager or Company executive in Charge may involve the Company's Corporate Compliance Officer for input and possible resolution under the Company's internal corporate code of conduct.

V. WHEN THE CODE OF CONDUCT BECOMES EFFECTIVE

A. No later than 30 days after the Commission opens the docket to issue an RFP covered by the Framework, the Code of Conduct for that RFP will be activated. However, if the Company Self-Build Team determines at any time that it will not pursue a self-build option for a particular RFP, the Code of Conduct may be de-activated.

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

C. Immediately upon assignment to a Company team (RFP or Self-Build), designation as a Shared Resource, or request to assist as an Unassigned Company Resource, each such employee or consultant must review this Manual, and sign the Acknowledgement. Annually, each member of the respective teams, Shared Resources and designated Unassigned Company Resources shall reaffirm their obligations to comply with the Code of Conduct and this Procedures Manual by executing an annual update to the Acknowledgement.

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

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

F. The Energy Contract Manager will be responsible for maintaining the Roster and the signed 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. No later than 30 days after the opening of the docket commencing an RFP, a Roster listing employee (with their title) and consultants in their designated role; Company RFP Team, Company Self-Build Team, Shared Resource or Unassigned Company Resource. When the IO is appointed, this Roster shall be provided to him/her. The Roster shall be placed in the RFP Communication Tool Kit SharePoint Site so that any Company personnel can access the database to determine the identity of the respective teams and Shared Resources.

B. Upon the finalization of the Roster for the RFP, the Energy Contract Manager shall verify that all employees (whether full-time, part-time, temporary, or contract) and consultants involved in the competitive bidding process, such as members of the Company RFP Team, the Company Self-Build Team, Shared Resources or Unassigned Company Resources, have acknowledged receipt of the Code of Conduct and his or her responsibility to comply with the Code of Conduct by submitting the 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 Acknowledgment.

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

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

VII. WHEN THE CODE OF CONDUCT TERMINATES

- A. The Code of Conduct for a specific RFP will terminate after the following two conditions are met when:
 - a. the final contract(s) for RFPs conducted under the Framework with the successful proposer(s) is/are executed, or when written notice of termination of the RFPs to be conducted under the Framework is provided by the Manager of Energy Procurement or his/her designee to the IO and the Commission, and
 - b. a certification of Code of Conduct compliance by all employees participating in the specific RFP process is submitted by affidavit by the Company Executive in Charge.

VIII. DOCUMENTATION FORMS

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

- Competitive Bidding Code of Conduct Acknowledgement of Receipt
- Communications Log
- Roster

IX. APPLICABILITY OF THE ATRs

Except as specifically made applicable under Section V.C.1.i of the ATRs with respect to wholesale power procurement from Affiliates, the ATRs shall not apply to RFP matters covered by the Framework, the Code of Conduct and this Procedures Manual as it relates to the Companies' interactions between the Company RFP Teams and Affiliate Teams. Reference to the ATRs in the Code of Conduct and/or this Manual are specifically for matters outside the Companies' administration of the RFP; provided, however, that such applicability may be revised as necessary and as may be directed by the Commission for any RFP.¹

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

REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

Appendix D – PowerAdvocate User Information



**Hawaiian
Electric**

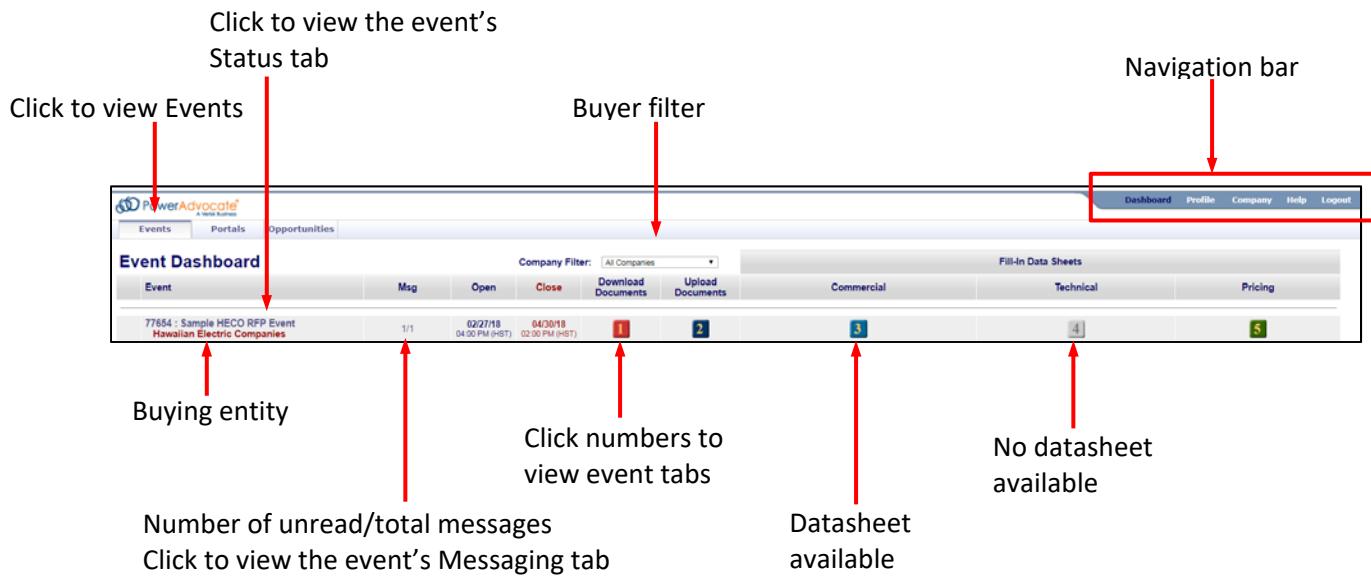
Sourcing Intelligence Quick Start for Suppliers

Logging In

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

Dashboard

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



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

Downloading Bid Packages

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



Document Description	Issue Date	Ref ID	File Name	File Size	Download
Pre_Bid_Test_Doc	01/15/18		Pre_Bid_Test_Doc.docx	11.63 KB	Download

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

Uploading Documents

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



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



Datasheets

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

The screenshot shows a navigation bar with tabs: 1. Download Documents, 2. Upload Documents, 3. Commercial Data (highlighted in orange), 4. Technical Data, 5. Pricing Data, and Messaging. Below the tabs is a message: "Save Data Your information can be changed after it is saved. If you leave this page without saving it first, you will lose all unsaved data."

Communicating with the Bid Event Coordinator /Company Contact

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

PowerAdvocate Messaging

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

The screenshot shows the Messaging tab selected in the top navigation bar. The inbox contains three items: 'Inbox (1)', 'Sent (1)', and 'Drafts (0)'. A red circle highlights the 'Create New Message' link at the top left of the inbox area. On the right, there is a 'Send email notifications?' checkbox with 'Yes' selected.

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

Getting More Information

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

The screenshot shows the navigation bar with tabs: Dashboard, Profile, Company, Help (highlighted with a red circle), and Logout.

- 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.

REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

AND

ENERGY STORAGE

ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

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



**Hawaiian
Electric**

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

This Mutual Confidentiality and Non-Disclosure Agreement (this “Agreement”) is effective as of _____, 20____ (the “Effective Date”) between [INSERT NAME OF IPP], a [State of incorporation/organization] [type of entity] (“IPP”) and Hawaiian Electric Company, Inc., a Hawai‘i corporation (“Company”). In consideration of the mutual promises contained in this Agreement, including the provision of Confidential Information (as defined below) by either party to the other hereunder, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Background

The Company has or intends to issue a Request for Proposals (“RFP”) for renewable energy generation and/or storage. 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 O‘ahu, State of Hawai‘i (“Proposal”).

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

In order to evaluate the Project, either party may from time to time provide to the other party certain Confidential Information. The parties are willing to provide such Confidential Information to each other upon the terms and conditions of this Agreement.

2. Confidential Information

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

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

results, records and budgets, business, marketing, development, sales and other commercial information and strategies;

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

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

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

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

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

3. Exclusions from Confidential Information

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

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

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

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

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

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

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

4. Non-Disclosure of Confidential Information

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

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

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

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

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

(e) Any provision herein to the contrary notwithstanding, the Company may disclose Confidential Information to the State of Hawai'i Public Utilities Commission ("Commission")

and/or the State of Hawai‘i Division of Consumer Advocacy (including their respective staffs) provided that such disclosure is made under a protective order entered in the docket or proceeding with respect to which the disclosure will be made or any general protective order entered by the Commission.

5. Required Disclosure and Notice

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

6. Return or Destruction of Confidential Information

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

7. Authority

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

8. No Representations or Warranties

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

9. No Other Obligations

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

10. Property Rights in Confidential Information

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

11. Publicly Traded Company

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

12. Remedies

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

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

13. Cumulative Remedies

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

14. Notice

(a) By delivering written notice, either party may notify the other that it no longer wishes to receive or provide Confidential Information. Any further information received or

provided by the party who received such notice following receipt of such notice, shall not be subject to the protection of this Agreement.

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

(1) Company:

By Mail:

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

Delivered By Hand or Overnight Delivery:

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

By E-mail:

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

With a copy to:

By Mail:

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

Delivered By Hand or Overnight Delivery:

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

By E-mail:

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

(2) [IPP]

By Mail:

[INSERT ADDRESS/CONTACT]

Delivered By Hand or Overnight Delivery:

[INSERT ADDRESS/CONTACT]

By E-mail:

[INSERT ADDRESS/CONTACT]

With a copy to:

By Mail:

[INSERT ADDRESS/CONTACT]

Delivered By Hand or Overnight Delivery:

[INSERT ADDRESS/CONTACT]

By E-mail:

[INSERT ADDRESS/CONTACT]

15. No Waiver

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

16. Governing Law

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

effect in which case the parties agree that any alternative dispute resolution shall take place in the State of Hawaii.

17. Attorneys' Fees and Costs

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

18. Assignment Prohibited

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

19. No Third Party Beneficiaries

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

20. Entire Agreement

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

21. Term and Survival

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

22. Severability

If any term or provision of this Agreement, or the application thereof to any person, entity or circumstances is to any extent invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of

this Agreement shall be valid and enforceable to the fullest extent permitted by law, and the parties will take all commercially reasonable steps, including modification of the Agreement, to preserve the economic "benefit of the bargain" to both parties notwithstanding any such aforesaid invalidity or unenforceability.

23. Negotiated Terms

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

24. Counterparts and Electronic Signatures

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

[Signature Page Follows]

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

HAWAIIAN ELECTRIC COMPANY, INC.
("HAWAIIAN ELECTRIC")

By: _____
Print Name: _____
Its: _____

[Insert Name of IPP]

("IPP")

By: _____
Print Name: _____
Its: _____

REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

Appendix F – Description of Available Sites



**Hawaiian
Electric**

APPENDIX F
VARIABLE RENEWABLE DISPATCHABLE GENERATION AND ENERGY STORAGE
DESCRIPTION OF AVAILABLE SITES

Land Request for Information

On December 12, 2016, the Hawaiian Electric Companies issued a Land Request for Information (“Land RFI”) seeking information on available land for potentially siting future utility scale renewable energy projects on the islands of O‘ahu, Maui, Moloka‘i, Lana‘i, and Hawai‘i. Information from responding landowners is available upon request by following the instructions at <http://hawaiianelectric.com/landrfi>. Several updates have been made to the information that was previously distributed in advance of the Companies’ last round of RFPs. These include updated hosting capacity values that take into account the current state of each of the island systems, some additional land parcels, as well as a few corrections to the Companies’ infrastructure depicted on the maps.

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

Company-Owned Site – Kahe Site

The Company is offering use of the Kahe Site for nominal consideration to site a standalone storage facility. Any Proposer proposing to use the Kahe Site shall be required to agree to specific terms and conditions for such use as provided for in an appendix to the PPA. A draft copy of the proposed form of the Terms and Conditions for Use (“TCU”) is attached as Appendix X to the PPA. Limited sections of the TCU, relating to use restrictions, security and infrastructure requirements, compliance with laws, lien restrictions and end of term obligations, shall be non-negotiable.

The Kahe Site is an undeveloped site located adjacent to the Kahe Generating Station and shown in the Appendix F Attachment 1 diagram. The site is close to an existing transmission switchyard allowing for strategic interconnection. It is located outside the 3.2 feet sea level rise exposure area and outside the tsunami evacuation zone. It is already zoned heavy industrial, making it a valuable resource on Oahu where developable land is limited.

The site, currently vacant and available to Proposers under this RFP, is approximately 9.5 acres, provided that any Proposer shall only be permitted to use as much acreage as is necessary for its Project. The interconnection point would be the Kahe Generating Station switchyard. Proposers must include the cost for interconnecting into the switchyard in their Proposals.

Upfront costs to the Proposer associated with the use of the Kahe Site include the following: (1) baseline assessments of the Kahe Site, either a Phase 1 or Phase 2 environmental assessment and, as necessary, archaeological study; and (2) applicable physical and data security requirements. Ongoing costs are customary and will be reserved in the TCU (insurance costs, security costs, etc.) or the PPA, as applicable. See the PPA and Appendix X for details on these upfront and ongoing use costs.

The specified costs above are not exhaustive, and the Proposer is encouraged to review the TCU to determine all associated use costs. Proposers should perform their own evaluation and account for all possible costs and should not rely solely on the identified costs noted above. Proposer also shall be responsible, at its sole cost and expense, for all site improvements, utilities, permits, and other required infrastructure and regulatory requirements that are necessary for use of the Kahe Site for Proposer's Project. For example, the Kahe Site is within Hawaii's Special Management Area ("SMA") and will require the Proposer to obtain a SMA permit.

Subject to confirmation from the IRS, overhead interconnection into the existing 138 kV switchyard is possible, but existing 138 kV lines may need to be relocated. Work within the switchyard to interconnect may include, but not be limited to, two (2) new 138 kV breakers, new line termination structure, extension of an existing bus, a new bus constructed, and ductlines for control cables. A grounding study will be needed to determine if the existing ground grid is sufficient. The IRS will confirm all necessary interconnection facilities.

The Company provided potential Proposers the opportunity to visit the Kahe Site on August 6, 2019. Information from the site visit will be posted to the Company's RFP website. Geotechnical reports were asked about during the site visit. The Company said it's willing to share certain reports previously done with interested Proposers, though the reports are not on the offered site but near the site. Requests for copies of these reports must be sent to the RFP email address, and the reports will be made available to Proposers only after execution of a Non-Disclosure Agreement.

The Company is also sharing a topographical diagram of the Kahe Site showing elevation lines as Appendix F - Attachment 2. Any drawings, reports, or any other information or data relating to the Site ("Site Information") is 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 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 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 Site. Proposers must satisfy itself through its own investigation as to conditions to be encountered at the Site.

Company Substation Sites

The Company plans to offer potential Proposers the opportunity to interconnect to certain substations for Proposals of standalone energy storage or Proposals paired with energy storage that intend to meet the Company's Storage Requirement, as described in Section 3.11.3 of the RFP. To maintain the integrity of the transmission system, these Proposals should either be sited on land near or adjacent to one of the following 138 kV Substations available for interconnection.

AES Substation

The AES Substation, located adjacent to the existing AES coal plant at Campbell Industrial Park, is available for interconnection at a new bay with two new circuit breakers and associated equipment with provisions for three future breakers. Overhead termination of a new 138 kV line is possible at this location; however, existing lines along the incoming roads may need to be adjusted in order to create a route to the substation. Termination of the line will require extension of the A-Bus and B-Bus, construction of a new breaker bay, construction of duct lines to the control equipment enclosure, and extension of the ground grid. The ground grid will need to be verified with a grounding study. The substation bus and structures are of a low-profile design. Two 138 kV circuit breakers, four 138 kV switches, and all associated equipment are required for the interconnection. Additionally, the 138 kV bus will need to be extended. Fifteen (15) 138 kV bus structures are required, which includes 10 pass-through structures, 4 switch structures, and 1 overhead structure. Addition of the new substation bay will require grading, backfill, gravel, driveways, fencing, and landscaping.

CEIP Substation

The CEIP Substation, located in Kapolei off of Kalaeloa Blvd., is available for interconnection at an existing open equipment bay, where the addition of one new circuit breaker is required. The existing 138kV termination structure is between the 46kV buses. Outside the substation, depending on the origin of the termination, 138 kV and 46 kV lines may need to be relocated to accommodate an interconnection. Entry to the substation would need to be underground, or existing 138 kV lines would need to be undergrounded or otherwise relocated to allow for an overhead entry into the substation. Termination of the line will require construction of duct lines and a concrete pad to mount the 138 kV circuit breaker. The 138 kV bus does not need to be extended, as it and the ground grid are already installed. The substation bus and structures are of a high-profile design. One 138 kV circuit breaker and all associated equipment are required for the interconnection. Note that a historic railroad site is located on the north side of the substation.

Ewa Nui Substation

The Ewa Nui Substation, located in East Kapolei, off of Farrington Highway, is available for interconnection at a new equipment bay with new circuit breakers and associated equipment required. The 138 kV termination structure is in the middle of the existing substation. Overhead termination of a new 138 kV line is possible at this location if the substation is expanded to the east or if terminating on the north end of the substation, depending on which direction the lines are coming from. Overhead termination of the south side of the substation, if the substation expansion is to the west, would be difficult due to the existing double circuit 138 kV lines coming from that direction. Termination of the line will require construction of additional structures to install new 138 kV equipment bays, including the steel structures and overhead bus bars. Some duct lines are existing, but additional ones will be required. The ground grid is already installed and merely needs to be tied into. The substation bus and structures are of a high-profile design. Up to eight (8) 138 kV circuit breakers can be installed to support two (2) new 138 kV lines and two (2) 138-46 kV transformers feeds. There are two options noted on the drawing if only one 138kV line needs to enter the substation. Each option requires two (2) breakers minimum.. The 138 kV bus will need to be extended to facilitate the interconnection. There are two options offered for this extension: 1) Extend Bus D; or 2) extend Bus A and Bus B. Addition of the new substation

bay(s) will require underground development, such as pad and conduit work for new structures and breakers within the substation. The Energy Corridor with existing utilities is on the south side of the substation. The Ho'opili development is to the west and east of the substation.

Halawa Substation

The Halawa Substation, located in Halawa valley , is available for interconnection at a new equipment bay with two new circuit breakers and associated equipment required. Overhead termination of a new 138 kV line is very difficult given the locations of the proposed terminations. New 138 kV lines cannot create any crossings with existing 138 kV lines within the substation; otherwise existing lines will need to be relocated. Undergrounding is also going to be difficult given the terrain surrounding the substation. The existing lines entering and within the substation are tangled and within close proximity of each other, which would require extensive work to resolve. Overhead steel structures, ground grid, and duct lines are existing. There is space at Halawa Substation (East) to install six (6) 138 kV circuit breakers to support four (4) new 138 kV lines. However, the single line drawing indicates that two of the four lines were designed for future Heeia #1 and Heeia #2. The remainder of the Halawa Substation (Center and West) was designed for an additional control equipment enclosure, two transformers, and a 138 kV switchgear. The 138 kV bus does not need to be extended to install additional circuit breakers. Only concrete pads for the circuit breakers are required. The substation is located within the State Conservation District and is an extremely archaeological and culturally sensitive area. Any new development will have to comply with current environmental requirements with regard to drainage.

Ko‘olau Substation

The Ko‘olau Substation, located in Kaneohe next to the H-3 freeway , is available for interconnection at an existing open equipment bay with physical space for expansion. Given the angle that overhead lines would have to enter the substation and terminate on the structure, the termination of a new 138 kV line may have to either be undergrounded or existing lines would have to be relocated in order to facilitate an overhead interconnection. Extensive coordination will be required during construction of a potential overhead interconnection. Termination of the line will require modification of the bus, but the substation is set up for a new 138 kV line. Construction of duct lines to the control equipment enclosure is required, and the sufficiency of the existing ground grid will need to be verified with a grounding study. The substation bus and structures are of a high-profile design. The 138kV termination structure is between the 46kV buses. The 138kV structures are at the east & west sides of the substation. The north side of the substation is bounded by private property, and the south side by Ho‘omaluhia Botanical Garden. There is not any land available to add another 138kV circuit into or out of the substation. One (1) 138 kV circuit breaker and associated equipment are required for the interconnection. The 138 kV bus will need to be modified. Duct lines will also need to be installed to accommodate new breaker control cable to the control equipment enclosure.

Additional Information

Additionally, the following links to a few publicly available resources relating to renewable energy project siting and development from the Hawaii 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.

Hawaii 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 Transportaton Fuels and Modes, and (5) Electrical Tranmission and Distribution

Hawaii Statewide GIS Program

<http://planning.hawaii.gov/gis/>

Provides Hawaii GIS data and other resources to support site identification and analysis

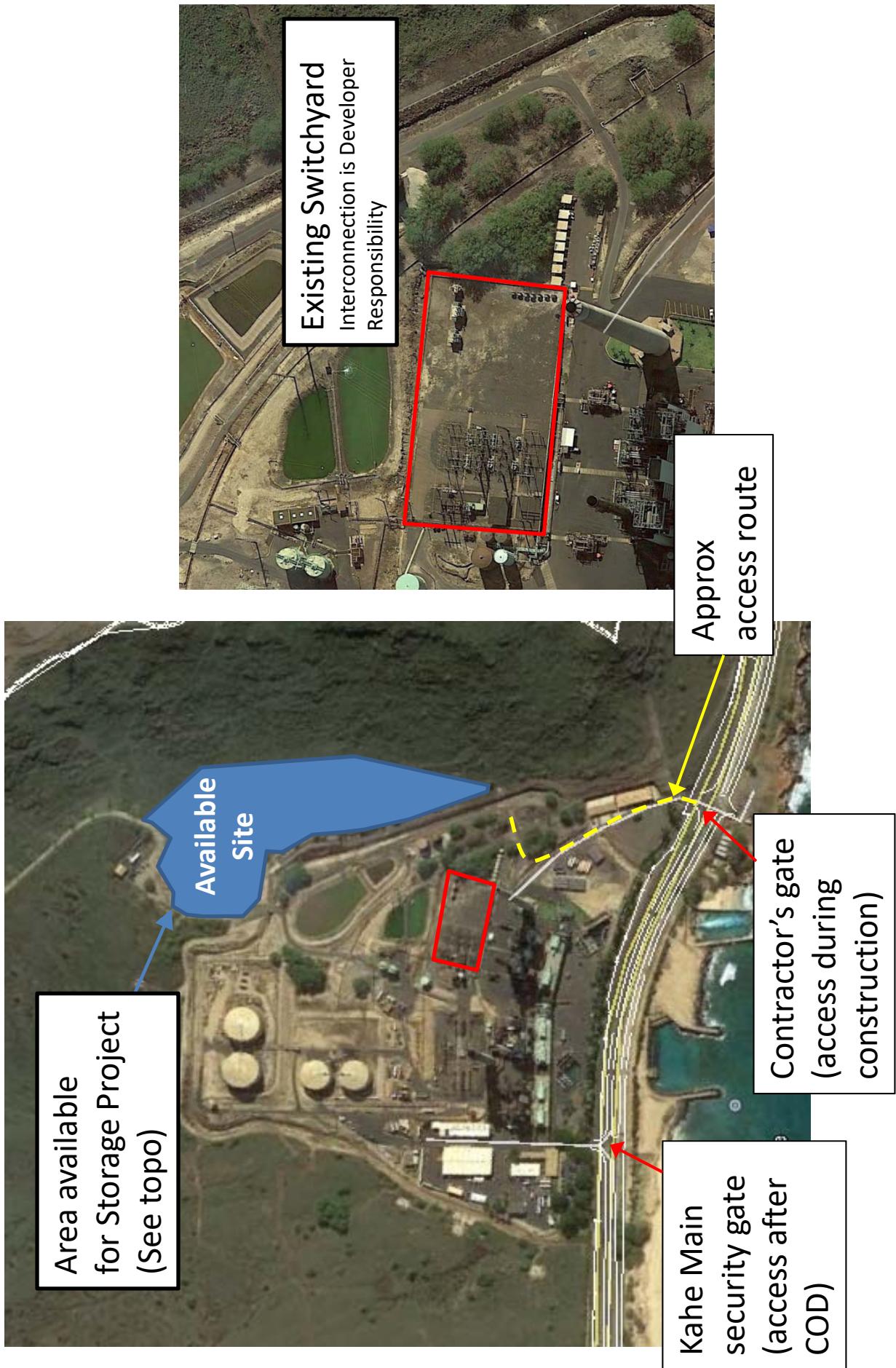
Aloha Aina: A Framework for Biocultural Resource Management in Hawai‘i’s Anthropogenic Ecosystems

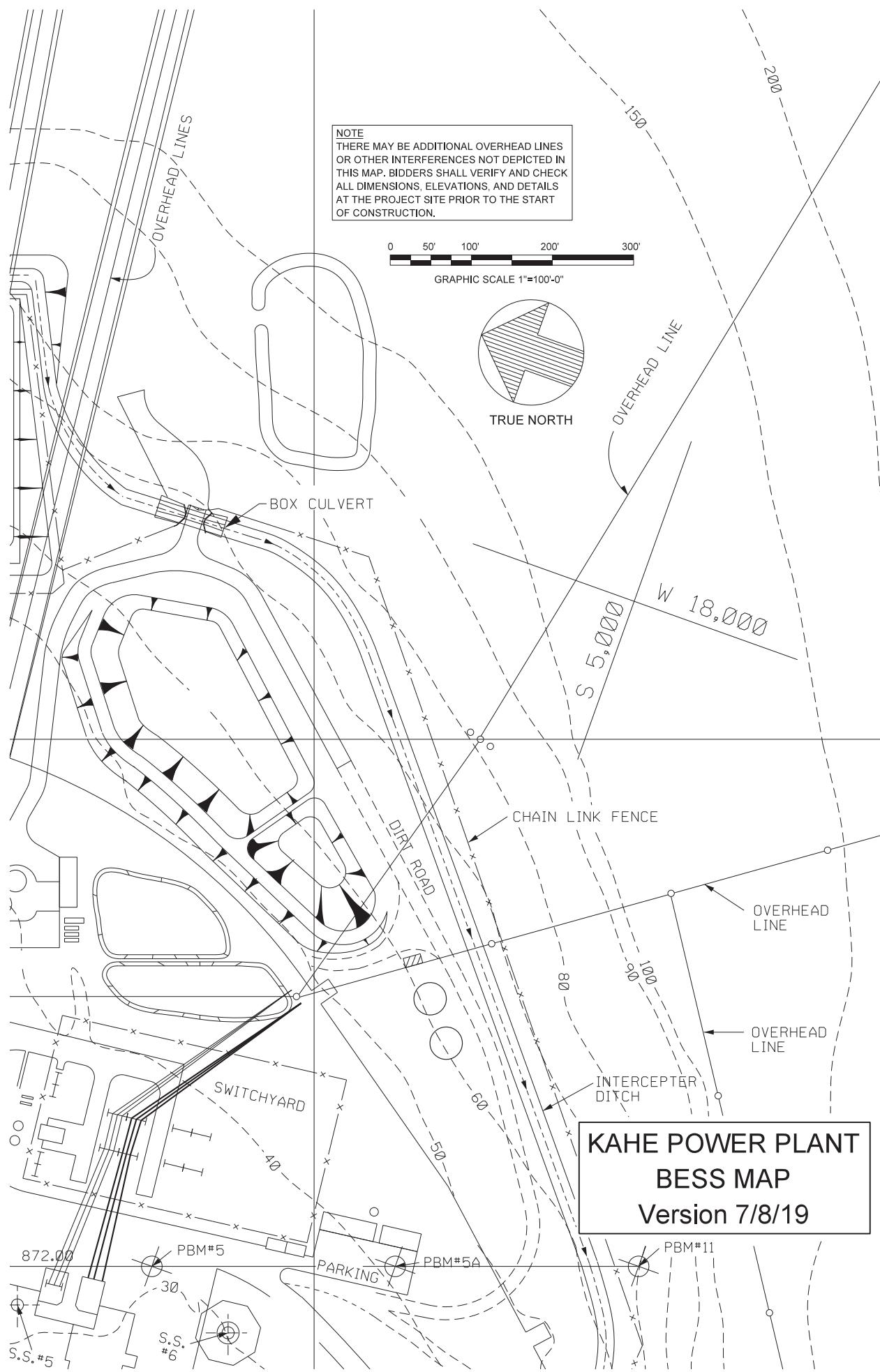
https://nmshawaiihumpbackwhale.blob.core.windows.net/hawaiihumpbackwhale-prod/media/archive/council/pdfs/aloha_aina.pdf

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 Hawaii.

Kahe Generating Station

Appendix F Attachment 1





REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix G – Self Build Option and
Self Build Option Team Certification Form*



**Hawaiian
Electric**

Appendix G - Self Build Option

Overview

To the extent that there are Self Build Option (“SBO”) Proposals to the RFP, the Company will endeavor to evaluate these SBO Proposals on a fair basis compared to third party Proposals. As described in Section 1.9 of the RFP, “[t]he Competitive Bidding Framework allows the Company the option to offer a Proposal(s) in response to this RFP (“Self-Build Option” or “SBO”). Accordingly, the Company must follow certain requirements and procedures designed to safeguard against and address concerns associated with: (1) preferential treatment of the SBO or members, agents or consultants of the Company formulating the SBO (the “Self-Build Team”); and (2) preferential access to proprietary information to the Self-Build Team.” An SBO 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 Self-Build Team will be required to submit Attachment 1 to this Appendix G, Self-Build Option Team Certification Form, acknowledging it has followed the rules and requirements of the RFP to the best of its ability and has not engaged in any collusive actions or received any preferential treatment or information providing an impermissible competitive advantage to the Self-Build Team over other proposers responding to this RFP, as well as adherence to PPA terms and milestones required of all proposers and the SBO’s proposed cost protection measures.

Pursuant to the Framework and as set forth in the RFP Schedule, the Company will require that the Proposal for the SBO(s) be submitted electronically through the Electronic Procurement Platform and a hard copy filed with the PUC a minimum of one (1) Day before other Proposals are due.

Except where specifically noted, an SBO 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 Self-Build Proposer will not be required to enter into a PPA with the Company. However, the Self-Build Proposer will be held to the proposed modifications to the RDG PPA and/or ESPPA, if any, it submits as part of the SBO in accordance with Section 3.8.7 of the RFP. Moreover, the SBO will be held to the same performance metrics and milestones set forth in the RDG PPA and/or ESPPA to the same extent as all Proposers, as attested to in the SBO’s Appendix G Attachment 1 Self Build Option Certification submittal. If liquidated damages are assessed, they will be paid from shareholder funds and returned to customers through the Purchased Power Adjustment Clause (“PPAC”).

In lieu of price components, the SBO will need to provide their 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 SBO 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 is attached as Attachment 2 to this Appendix G. An Excel

template of that file can be requested by the SBO 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 to reflect the details of the Project's Proposal. All assumptions used will be reflected in an assumptions input tab.

SBO 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 SBO 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 LEP 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 SBO Proposal(s). (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:

Transmission Line

The cost estimate includes the design, procurement, and construction of any new transmission 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 transmission line 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 transmission 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 SBO 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 SBO Project Capital Cost will be included in the Levelized Price 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 SBO 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 SBO 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 SBO Project Capital Cost will be included in the Levelized Price calculation.

The following is a narrative description of the proposed revenue requirement calculation and significant assumptions that the SBO Proposal should account for. The objective of a revenue requirement analysis is to illustrate the annual revenue requirements (ARR) for a utility SBO 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 SBO Proposal to ensure an appropriate level of customer cost protection measures are included in such proposal.

APPENDIX G ATTACHMENT 1 - SELF BUILD OPTION TEAM CERTIFICATION

Name of SBO Team Contact: _____

Unique Name of Facility: _____

This Certification of the Self Build Option (SBO) Team's Proposal for Hawaiian Electric Company, Inc., Maui Electric Company, Ltd, and Hawai'i Electric Light Company, Inc.'s (the "Hawaiian Electric Companies") Variable Renewable Dispatchable Generation and Energy Storage Stage 2 Request for Proposal (RFP) is made as of the date stated below.

A. COMPLIANCE WITH THE RFP AND CODE OF CONDUCT

The SBO Team certifies and acknowledges that it will/has:

1. Adhered to the terms of the RFP applicable to the SBO Team, including but not limited to: Section 1.7.1 (proposal submittal requirements), Section 1.7.3 (certification of non-collusion), Section 1.9 (Procedures for the Self-Build 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 SBO Team such as execution of the Model RDG PPA or Energy Storage PPA (ESPPA), 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 Part IV, Section C, therein with respect to communication with the Company RFP Team.

B. INDEPENDENT INVESTIGATION

The SBO Team further certifies and acknowledges that it will/has:

1. Submitted the SBO Proposal based on its own investigations, examinations and determinations, including assessments of any risks that could have an effect on its obligations under the SBO Proposal.
2. Carefully examined the Hawaiian Electric Companies' Renewable Dispatchable Generation and Energy Storage Stage 2 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 SBO Team.

3. Examined and understands the technical requirements, schedule and evaluation process as it is laid out under the Variable Renewable Dispatchable Generation and Energy Storage Stage 2 RFP.

C. COST PROPOSAL ACKNOWLEDGEMENTS

The Self Build Team acknowledges and agrees that:

1. Recovery for Project capital costs and O&M costs will be capped at the amount included in the SBO Team's Proposal.
2. Only actual capital costs and O&M costs will be recovered even if such actual costs are lower than the SBO Team's proposed maximum amounts.
3. Costs of developing the proposal must be included in the SBO for evaluation purposes only. Only the incremental costs of developing the SBO Team's proposal will be charged to the project and passed through to customers. Incremental costs for SBO proposals 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 PPA REQUIREMENTS AND MILESTONES

The Self Build Team acknowledges and agrees that:

1. The SBO Proposal will be consistent with the scope of work and responsibilities of the "Seller" under the terms of the applicable Model PPA excluding inapplicable terms related to commercial and legal interactions between the Seller and the Company.
2. The SBO Facility will be designed and constructed to:
 - a. Achieve the Performance Standards identified in Section 3 - Performance Standards, in Attachment B of the applicable Model PPA 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 performance metrics as specified in Article 2 of the applicable Model RDG PPA or Article 4 of the ESPPA.
 - b.1. For facilities with a photovoltaic generation component, (i) PV System Equivalent Availability Factor, and (ii) Measured Performance Ratio;
 - b.2. For facilities with a wind generation component, (i) Modified Pooled OMC Equipment Availability Factor, (ii) Performance Index, and (iii) Balance of Plant Efficiency Ratio;
 - b.3. For Storage facilities (paired storage or standalone storage), (i) Storage Annual Equipment Availability Factor, (ii) Storage Annual Equivalent Forced Outage Factor, and (iii) Storage Capacity Ratio;

- c. Pass the Acceptance Test specified in Attachment N – Acceptance Test General Criteria of the applicable Model RDG PPA or ESPPA.
- d. Pass the Control System Performance Test specified in Attachment O – Control System Acceptance Test Criteria of the applicable Model RDG PPA or ESPPA;
- e. If applicable, pass the On-line Performance Test specified in Attachment W – BESS Capacity Test of the applicable Model RDG PPA, or Attachment T - Capacity Test of the Model ESPPA;
- f. If applicable, achieve a Demonstrated Capacity equal to or greater than that indicated in the SBO Proposal as measured pursuant to Attachment W – BESS Capacity Test of the applicable Model RDG PPA;
- g. Meet the project milestones identified in the SBO 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 RDG PPA or ESPPA (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.
- h. Achieve the reporting milestones identified in the SBO 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 RDG PPA or ESPPA (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.
- i. Will be subject to the applicable liquidated damages for the PPA or ESPPA 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.
- j. Will reconfirm requirements in GO7 application and any resulting approval order for such application.
- k. 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 Self Build Option Team Certification is (are) duly authorized by the SBO Team to execute such on behalf of the SBO Team; and
2. All statements, specifications, data, confirmations and other information set out in this Self Build Option Team Certification are complete and accurate in all material respects.

IN WITNESS WHEREOF, the SBO 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 SBO Team Representative

Name of SBO Team Representative (please print)

Title of SBO Team Representative (please print)

Appendix G Attachment 2

Project Name
Summary

<u>Year</u>	<u>Revenue Requirement</u>
1	50
2	150
3	144
4	138
5	132
6	126
7	121
8	116
9	110
10	105
11	100
12	99
13	93
14	87
15	82
16	76
17	72
18	68
19	64
20	60
21	(0)
22	(0)
23	(0)
24	(0)
25	(0)
26	(0)
27	(0)
28	(0)
29	(0)
30	(0)
31	(0)
32	(0)
33	(0)
34	(0)
35	(0)
36	(0)
37	(0)
38	(0)
39	(0)
40	(0)
41	(0)
42	(0)
43	(0)
44	(0)
45	(0)
46	(0)
47	(0)
48	(0)
49	(0)
50	(0)
51	(0)
52	(0)
53	(0)
54	(0)
55	(0)
56	(0)
57	(0)
58	(0)
59	(0)
60	(0)
Total	1,992
NPV @ 3.00%	1,531
NPV @ 7.03%	1,127
NPV @ 12.00%	821

Appendix G Attachment 2

Project Name

Revenue Requirements Model

Assumptions

Manual input

HECO TY2017 Rate Case Dkt 2016-0328 Final D&O 35545

Cost of Capital Assumptions

	Weight	Rate	Weighted Average	After-Tax Weighted Average	Weighted Average Revenue Requirement	Weighted Average Gross-up for Income Taxes
Short Term Debt	1.18%	1.75%	0.02%	0.02%	0.023%	0.02%
Long Term Debt (Taxable Debt)	39.59%	5.03%	1.99%	1.48%	2.186%	1.99%
Hybrids	1.22%	7.19%	0.09%	0.07%	0.096%	0.09%
Preferred Stock	0.90%	5.37%	0.05%	0.05%	0.072%	0.07%
Common Stock	57.10%	9.50%	5.42%	5.42%	8.018%	7.31%
	100.00%		7.57%	7.032%	10.395%	9.471%

Tax Assumptions

	Effective
Federal Income Tax Rate	21.00%
State Income Tax Rate	6.40%
	25.75%

State Investment Tax Credit (ITC) 4.00%

Accelerated State ITC Amortization Period¹ 10

Public Service Company Tax 5.885%

PUC Fee 0.500%

Franchise Tax 2.500%

Composite Revenue Tax Rate 8.885% 1.09751

Project Assumptions

Capital Investment \$ 1,000

Depreciation

Expected Useful Life

MACRS Tax Life ("Tax Life")

Tax Class Life ("Class Life")

20	
15	half-year convention, table A-1
20	half-year convention, table A-8

O&M

O&M \$ -

Escalation Rate 2.0%

Notes:

1. Per HECO 2017 TY Rate Case Parties' Stipulated Settlement Letter in Docket No. 2016-0328, State ITC Amortization accelerated over a ten-year period.

Appendix G Attachment 2

\\shareencoint\\DavWWWRoot\\clients\\HF_RenAco\\Programs\\REFIDPRO1\\2019\\Oahu\\Var S2\\03\\REF_Sncr Dev\\S2 Anny G Att 2 - Template Fin Statement Rev Rev Model Rev

Appendix G Attachment 2

Project Name		Tax Depreciation Factors										Tax Depreciation																			
		Manual input	Years	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
			-																												
			3																												
			5																												
			7																												
			10																												
			15																												
			20																												
			25																												
			28																												
			30																												
			35																												
			50																												
Source: IRS Publication 946, Ta																															

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Appendix G Attachment 2

Tax Depreciation

Appendix G Attachment 2

Project Name		Revenue Requirements Model - Calculations									
Manual Input		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
O&M											
Escalation Rate	1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	
O&M	-	-	-	-	-	-	-	-	-	-	
Plant Asset Depreciation											
Book Depreciation											
Book Depreciation Rates	0.000%	5.263%	5.263%	5.263%	5.263%	5.263%	5.263%	5.263%	5.263%	5.263%	5.263%
Depreciation Expense	-	53	53	53	53	53	53	53	53	53	53
Accumulated Depreciation	-	53	105	158	211	263	316	368	421	474	
Tax Depreciation											
Tax Depreciation Rates (Straight Line)	20	2.500%	5.000%								
Tax Basis (S/L)	0.0%	-	-	-	-	-	-	-	-	-	-
Tax Depreciation Rates (MACRS)	15	5.000%	9.500%	8.550%	7.700%	6.930%	6.230%	5.900%	5.900%	5.910%	5.900%
NonRB Financed Tax Basis (MACRS)	100.0%	50	95	86	77	69	62	59	59	59	59
Tax Depreciation	50	95	86	77	69	62	59	59	59	59	59
Accumulated Tax Depreciation	50	145	231	308	377	439	498	557	616	675	
State Investment Tax Credit (ITC)											
Book											
State ITC Amortization Rate	0.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%	10.000%
Amortization of State ITC	4.00%	-	4	4	4	4	4	4	4	4	4
Accumulated Amortization	-	4	8	12	16	20	24	28	32	36	
Deferred ITC	40	36	32	28	24	20	16	12	8	4	
Tax	40										
Deferred Tax Calculation											
Book Accumulated Depreciation	-	53	105	158	211	263	316	368	421	474	
Tax Accumulated Depreciation	50	145	231	308	377	439	498	557	616	675	
Book/Tax Acc Depr Difference	(50)	(92)	(125)	(150)	(166)	(176)	(182)	(189)	(195)	(202)	
Deferred ITC	40	36	32	28	24	20	16	12	8	4	
Net Deferred Tax Asset (Liability)	(3)	(15)	(24)	(31)	(37)	(40)	(43)	(45)	(48)	(51)	
Deferred Tax Base	10	46	37	28	21	14	10	10	10	10	
Deferred Taxes - Federal	2	9	7	6	4	3	2	2	2	2	

Appendix G Attachment 2

Revenue Requirements Model - Calculations		1	2	3	4	5	6	7	8	9	10
Manual input											
Deferred Taxes - State excluding credit		1	3	2	2	1	1	1	1	1	1
Change in Deferred Taxes		3	12	9	7	5	4	3	3	3	3
Accumulated Deferred Taxes check		3	15	24	31	37	40	43	45	48	51
Change in Deferred ITC		-	-	-	-	-	-	-	-	-	-
Rate Base and Financing											
Investment: (Rate Base)											
Gross Plant		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Accumulated Depreciation		-	53	105	158	211	263	316	368	421	474
Accumulated Deferred Taxes		3	15	24	31	37	40	43	45	48	51
Accumulated Deferred ITC		40	36	32	28	24	20	16	12	8	4
Ending Net Investment		-	957	897	839	783	729	677	625	574	523
Average Net Investment		479	927	868	811	756	703	651	600	548	497
Average Financing:											
Short Term Debt		1.18%	6	11	10	10	9	8	8	7	6
Long Term Debt (Revenue Bonds)		39.59%	190	367	344	321	299	278	258	237	217
Taxable Debt		1.22%	6	11	11	10	9	9	8	7	6
Preferred Stock		0.90%	4	8	8	7	7	6	6	5	4
Common Equity		57.10%	273	529	495	463	432	401	372	342	313
Total Financing		479	927	868	811	756	703	651	600	548	497
Return on Investment											
Short Term Debt		1.75%	0	0	0	0	0	0	0	0	0
Long Term Debt (Taxable Debt)		5.03%	10	18	17	16	15	14	13	12	11
Hybrids		7.19%	0	1	1	1	1	1	1	0	0
Total Interest Expense		10	19	18	17	16	15	14	13	12	10
Preferred Dividends		5.37%	0	0	0	0	0	0	0	0	0
Net Income on Common		9.50%	26	50	47	44	41	38	35	33	30
Income Taxes											
Income Before Pref Dividends		26	51	47	44	41	38	36	33	30	27
Income Before Taxes (including ITC)		35	68	64	60	56	52	48	44	40	37
Investment Tax Credit		-	4	4	4	4	4	4	4	4	4
Income Before Taxes (excluding ITC)		35	64	60	56	52	48	44	40	36	33
Federal Income Tax		7	13	13	12	11	10	9	9	8	7
State Income Tax		2	4	4	3	3	3	3	3	2	2
State Investment Tax Credit		-	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)

Appendix G Attachment 2

Revenue Requirements Model - Calculations		1	2	3	4	5	6	7	8	9	10
Manual Input											
Total State Tax		2	0	(0)		(1)		(1)		(1)	
Total Taxes		9	14	12	11	10	9	8	7	6	5
Revenue Requirement Calculation											
Revenue Requirement Factors		0.0498	0.1497	0.1436	0.1376	0.1319	0.1264	0.1210	0.1157	0.1104	0.1050
Revenue Requirement		50	150	144	138	132	126	121	116	110	105
Revenue Taxes		4	13	13	12	12	11	11	10	10	9
Income Before Depr, Int, Inc Tax		45	136	131	125	120	115	110	105	101	96
Depreciation Expense		-	53	53	53	53	53	53	53	53	53
O&M		-	-	-	-	-	-	-	-	-	-
Interest Expense		10	19	18	17	16	15	14	13	12	10
Income Before Income Taxes		35	64	60	56	52	48	44	40	36	33
Income Taxes - Federal		7	13	13	12	11	10	9	9	8	7
Income Taxes - State		2	4	4	4	3	3	3	3	2	2
State ITC		-	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Total Income Taxes		9	14	12	11	10	9	8	7	6	5
Preferred Dividends		0	0	0	0	0	0	0	0	0	0
Net Income for Common		26	50	47	44	41	38	35	33	30	27
Book Financial Statements		check	-	-	-	-	-	-	-	-	-
Balance Sheet											
Gross Plant		1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Accumulated Depreciation		-	53	105	158	211	263	316	368	421	474
Accumulated Deferred Taxes		3	15	24	31	37	40	43	45	48	51
Accumulated Deferred ITC		40	36	32	28	24	20	16	12	8	4
Ending Net Investment		957	897	839	783	729	677	625	574	523	471
Short Term Debt		1.18%	11	11	10	9	9	8	7	6	6
Long Term Debt (Taxable Debt)		39.59%	379	355	332	310	289	268	248	227	187
Hybrids		1.22%	12	11	10	10	9	8	7	6	6
Preferred Stock		0.90%	9	8	8	7	7	6	5	5	4
Common Equity		57.10%	547	512	479	447	416	386	357	328	298
Financing		957	897	839	783	729	677	625	574	523	471

Appendix G Attachment 2

Revenue Requirements Model - Calculations		1	2	3	4	5	6	7	8	9	10
<u>Income Statement</u>											
Revenue		50	150	144	138	132	126	121	116	110	105
Revenue Taxes		4	13	13	12	12	11	11	10	10	9
Income Before Depr, Int, Inc Tax		45	136	131	125	120	115	110	105	101	96
Depreciation Expense		-	53	53	53	53	53	53	53	53	53
O&M		-	-	-	-	-	-	-	-	-	-
Interest Expense		10	19	18	17	16	15	14	13	12	10
Income Before Income Taxes		35	64	60	56	52	48	44	40	36	33
Income Taxes - Federal		7	13	13	12	11	10	9	9	8	7
Income Taxes - State		2	4	4	4	3	3	3	3	2	2
State ITC		-	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Total Income Taxes		9	14	12	11	10	9	8	7	6	5
Preferred Dividends		0	0	0	0	0	0	0	0	0	0
Net Income for Common		26	50	47	44	41	38	35	33	30	27
ROE		9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%	9.5%

Appendix G Attachment 2

Revenue Requirements Model - Calculations		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
<u>Manual input</u>											
<u>Income Tax Summary</u>											
<u>Current Taxes</u>											
Income Before Preferred Div & Taxes	35	68	64	60	56	52	48	44	40	37	
Book/Tax Depreciation Difference	(50)	(92)	(125)	(150)	(166)	(176)	(182)	(189)	(195)	(202)	
Taxable ITC	40	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	
Taxable Income State	25	(28)	(65)	(94)	(115)	(128)	(138)	(148)	(159)	(169)	
Effective Tax Rate - State	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	
Current Tax Expense (benefit) State	2	(2)	(4)	(6)	(7)	(8)	(8)	(9)	(10)	(10)	
Taxable Income Federal	24	(26)	(61)	(88)	(108)	(120)	(130)	(140)	(149)	(159)	
Tax Rate Federal	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	21.00%	
Current Tax Expense (benefit) Federal	5	(6)	(13)	(19)	(23)	(25)	(27)	(29)	(31)	(33)	
<u>Deferred Taxes</u>											
Book/Tax Depreciation Difference	50	92	125	150	166	176	182	189	195	202	
Taxable ITC	(40)	4	4	4	4	4	4	4	4	4	
Total timing difference	10	96	129	154	170	180	186	193	199	206	
Effective Tax Rate State	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	6.02%	
Deferred Tax Expense (Benefit) State	1	6	8	9	10	11	11	12	12	12	
Book/Tax Depreciation Difference	50	92	125	150	166	176	182	189	195	202	
Taxable ITC	(40)	4	4	4	4	4	4	4	4	4	
Total timing difference	10	96	129	154	170	180	186	193	199	206	
Effective Tax Rate Federal	19.74%	19.74%	19.74%	19.74%	19.74%	19.74%	19.74%	19.74%	19.74%	19.74%	
Deferred Tax Expense (Benefit) Federal	2	19	26	30	34	36	37	38	39	41	
<u>Tax Summary</u>											
Current Tax Expense (Benefit) State	2	(2)	(4)	(6)	(7)	(8)	(8)	(9)	(10)	(10)	
Current Tax Expense (Benefit) Federal	5	(6)	(13)	(19)	(23)	(25)	(27)	(29)	(31)	(33)	
Current ITC Expense (Benefit)	(40)										
Total Current Taxes	(33)	(7)	(17)	(24)	(30)	(33)	(36)	(38)	(41)	(43)	
Deferred Tax Expense (Benefit) State	1	6	8	9	10	11	11	12	12	12	
Deferred Tax Expense (Benefit) Federal	2	19	26	30	34	36	37	38	39	41	
Deferred ITC Expense (Benefit)	40	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	
Total Deferred Taxes	43	21	29	36	40	42	44	46	47	49	
TOTAL Incurred Tax Expense (Benefit) check	9	14	12	11	10	9	8	7	6	5	
	-	-	-	-	-	-	-	-	-	-	

Appendix G Attachment 2

Revenue Requirements Model - Calculations	
<u>Manual input</u>	
Total State Tax	1
Total Federal Tax	2
Total ITC	-
TOTAL Incurred Tax Expense (Benefit)	9
<i>check</i>	-

1 2 3 4 5 6 7 8 9 10

**REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU**

AUGUST 22, 2019

Docket No. 2017-0352

*Appendix H – Interconnection Facilities and
Cost Information*



**Hawaiian
Electric**

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

Tariff Rule No. 19, approved by the PUC, establishes provisions for Interconnection and Transmission Upgrades (see Appendix I). The tariff provisions are intended to simplify the rules regarding who pays for, installs, owns, and operates interconnection facilities in the context of competitive bidding. Tariff Rule No. 19 will be utilized as the basis for addressing interconnection and transmission upgrades for any projects developed through this RFP. Bidders will comply with the terms and conditions as specified therein.

To assist Bidders in assessing the impacts of location on potential projects, the per unit cost figures provided in the sections and tables below are to be used to provide an approximate estimated cost for interconnecting, including substation, communications, security, and transmission or distribution line cost to the existing Hawaiian Electric System. The per-unit cost figures below should not be used to create a detailed project estimate. A detailed project estimate typically requires a certain level of engineering to assess project site conditions and to factor in other parameters specific to the project.

The Bidder should identify the components assumed for their project and the quantity assumed for each. Each table below provides notes on the assumptions for each of the unit cost estimates. If a Bidder's proposed project requirements are different than what is assumed in the notes, the Bidder should identify each difference and provide an estimated additional cost or savings resulting from those different requirements.

2.1 Transmission & Distribution Line Interconnection Costs

Component	Description	Cost per mile
1	New 138 kV Overhead line (accessible 500' spans)	\$4,230,000
2	New 46 kV Overhead line (accessible 250' spans)	\$960,000
3	New 138 kV Overhead line (inaccessible 500' spans)	\$5,272,000
4	New 46 kV Overhead line (inaccessible 250' spans)	\$1,657,000
5	138 kV overbuild on existing 46 kV line (accessible 500' spans)	\$4,921,000
6	46 kV overbuild on existing 12 kV line (accessible 250' spans)	\$1,752,000
7	138 kV overbuild on existing 46 kV line (inaccessible 500' spans)	\$6,210,000
8	46 kV overbuild on existing 12 kV line (inaccessible 250' spans)	\$3,207,000
9	Reconductor 46kV Overhead line (accessible 250' spans)	\$1,073,000
10	Reconductor 46kV Overhead line (inaccessible 250' spans)	\$2,296,000
11	New 138 kV Underground line Dielectric Cable	\$11,556,000
12	New 46 kV Underground line	\$1,629,000

Hawaiian Electric Company

APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

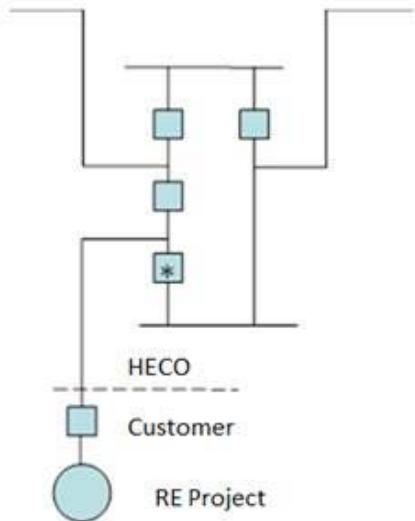
Notes:

1. Easement and/or land costs are NOT included with these estimates.
 2. EA/EIS cost are NOT included with these estimates.
 3. All estimates are provided in 2022 dollars.
 4. Components 2, 4, 6, 8, 9, and 10 assume wood pole construction.
 5. Components 1, 3, 5, and 7 assume steel pole construction.
 6. Overbuilding or reconductoring of lines assumes removal/replacement of all existing poles.
 7. All estimates are single respective circuits (i.e. single 46 kV circuit or single 138 kV circuit with single 46 kV circuit underbuild).
 8. Component 11 assumes 2 cables per phase and does NOT include duct bank and MH construction.
 9. Component 10 includes 1 cable per phase and does NOT include duct bank and MH construction.

2.2 Substation Interconnection Costs

2.2.1 Substation Interconnection Costs for generation only or generation paired with energy storage that is not intended to meet the Company's Storage Requirement

2.2.1.1 Generation only or generation paired with energy storage that is not intended to meet the Company's Storage Requirement interconnecting into new 138 kV substation



Component	Description	Cost
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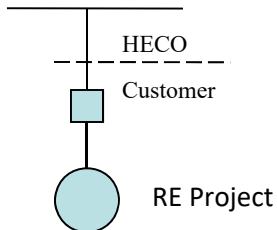
Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

1	138kV Substation - 4 breaker ring bus	\$8,713,000
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Notes:

1. Substation land that is received has been graded per Hawaiian Electric's civil and structural requirements. Costs for excavation and fill are not included in the estimates.
2. Costs are in 2022 dollars.
3. Estimate does not contain any of the following costs: Telecom, Relay Coordination Study, or Project Management.
4. Substation relay protection requirements have not been identified, so costs are based upon typical line protection relaying requirements.
5. Control enclosure and SCADA are included in cost estimates.

2.2.1.2 Generation only or generation paired with energy storage that is not intended to meet the Company's Storage Requirement interconnecting into 46kV



Component	Description	Cost
1	Tap to 46kV circuit.	\$39,000
2	46kV circuit extension if required. (Refer to table in 2.1 for per unit line extension cost.)	Varies
3	Customer owned 46kV breaker	\$1,891,000
4	Remote substation work for DTT (if required)	\$477,000

Notes (Components 1 and 2):

1. Easement and/or land costs are NOT included with these estimates.
2. EA/EIS costs are NOT included with these estimates.
3. Costs are in 2022 dollars.
4. Assumes wood pole installation for switches.

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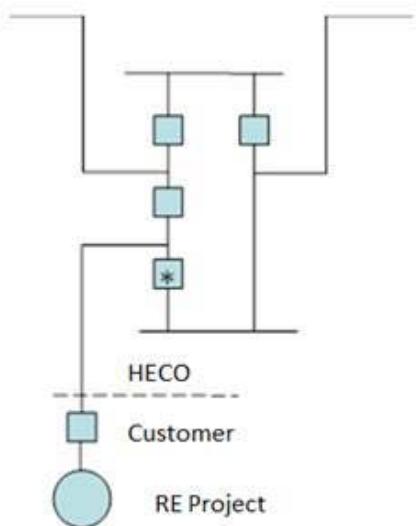
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

Notes (Components 3 and 4)

1. Estimate does not contain any of the following costs: Telecom, Relay Coordination Study, Land Cost, Environmental Assessment/Environmental Impact Statement, or Project Management.
 2. Substation relay protection requirements have not been identified, so costs are based upon typical circuit breaker and line protection relaying requirements.
 3. Control enclosure and SCADA are included in cost estimates.
 4. Substation costs for interconnection on the 12.5kV distribution system will involve equipment changes at the 46kV level to accommodate reverse flow from projects at the minimum bid size of 5MW. The scope of work will be highly dependent on location and therefore, pending IRS results, the same 46KV estimate should apply.
 5. Costs are in 2022 dollars.

2.2.2 Substation Interconnection Costs for standalone energy storage or generation paired with energy storage that intend such storage to meet the Company's Storage Requirement

2.2.2.1 Standalone energy storage or generation paired with energy storage that intend such storage to meet the Company's Storage Requirement interconnecting into a new 138kV substation



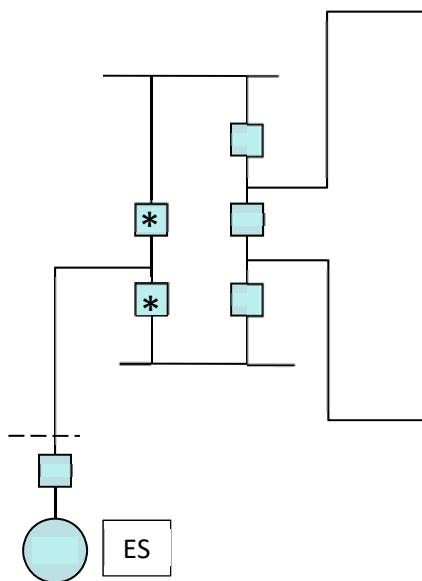
Component	Description	Cost
1	138kV Substation - 4 breaker ring bus	\$8,713,000

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

Notes:

1. 138 kV Substation configuration may vary depending on the characteristics of the proposed project. The configuration shown above is a minimum requirement. Proposers should contact the Company for additional information regarding the estimated interconnection facilities needed to satisfy the transmission planning criteria for firm generation resources.
2. Substation land that is received has been graded per Hawaiian Electric's civil and structural requirements. Costs for excavation and fill are not included in the estimates.
3. Costs are in 2022 dollars.
4. Estimate does not contain any of the following costs: Telecom, Relay Coordination Study, or Project Management.
5. Substation relay protection requirements have not been identified, so costs are based upon typical line protection relaying requirements.
6. Control enclosure and SCADA are included in cost estimates.

2.2.2.2 Standalone energy storage that intend such storage to meet the Company's Storage Requirement interconnecting into existing 138kV substation



Component	Description	Cost
1	*2 – 138 kV circuit breaker addition to Existing Switching Station (HECO)	\$4,014,000

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

Notes:

1. Existing substation has been built to accommodate the addition of this 138kV breaker-and-a-half bay, including all groundwork (grading, grounding, rockfill, driveway, etc.) and fencing. Groundwork and fencing is not included in this estimate.
2. Costs are in 2022 dollars.
3. Estimate does not contain any of the following costs: Telecom, Relay Coordination Study, Land Cost, Environmental Assessment/Environmental Impact Statement, or Project Management.
4. Substation relay protection requirements have not been identified, so costs are based upon typical circuit breaker and line protection relaying requirements.

2.3 Telecommunication Interconnection Costs

1. Point-to-point microwave: \$1,042,939 with the following assumptions:
 - a. There is radio line-of-sight clearance between the communications endpoints.
 - b. FCC licensed Microwave Frequencies are available.
 - c. There are existing structures/buildings with space available on both ends to house the radio equipment.
 - d. Telecommunications grounding standards are up-to-date at both sites.
 - e. 48 V DC power with 12 hour battery backup is available.
 - f. This estimate does not include any special site-specific permit/approval activities that may be required including, but not limited to, Neighborhood Board (s), Conservation District Use Application, Environmental Assessment, Shoreline Management Area approval, biological (endangered species or habitat) surveys, and/or cultural (archeological) surveys or the cost of any migration required for approvals to be granted.
 - g. Space is available at both ends to construct antenna towers or structures that are rated to survive a Saffir-Simpson category 4 hurricane. Cost includes 1 each 50 foot tower.
 - h. Cost to interconnect to Hawaiian Electric's existing communications network is not included.
 - i. Costs are in 2022 dollars.
2. Fiber with overbuild and new construction with the following assumptions:

Component	Description	Cost per mile
1	Fiber underbuild on existing poles (accessible 500' spans)	\$367,000
2	Fiber underbuild on existing poles (accessible 150' spans)	\$542,000

- a. No pole replacements or reframing.
- b. Costs are in 2022 dollars.
- c. 48-strand Singlemode Fiber optic cable, All Dielectric Self-Supporting (ADSS) Cable

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

3. Supervisory Control and Data Acquisition (SCADA) Communications: \$86,100 with the following assumptions:
 - a. 1.5 Mbps leased communications circuit is typically used for SCADA (Supervisory Control and Data Acquisition) applications via Fiber optics, or Ground Potential Rise (GPR) equipment where required. Hawaiian Telcom leased line costs are not included in this estimate.
 - b. Existing leased communications network is in close proximity to the substation.
 - c. Space and power will be provided in control house or cabinet.
 - d. Costs are in 2022 dollars.
4. Direct Transfer Trip equipment: \$259,977 per link with the following assumptions:
 - a. Space is provided in control house or cabinet with power, GPS timing, and grounding.
 - b. Point-to-point communication (Hawaiian Electric Fiber or Microwave) is available between the developer substation and Hawaiian Electric substation
 - c. If Hawaiian Electric communications links are unavailable, Hawaiian Telecom leased T1 is required, costs are not included in this estimate.
 - d. Costs are in 2022 dollars.

For interconnections to the Hawaiian Electric System at 12 kV or lower, data lines may be used to maintain the stability of the electric grid as specified in applicable Interconnection Requirements Studies.

2.4 Station Service Costs

Component	Description	Cost per mile
1	New 12 kV Overhead line (accessible 150' spans)	\$1,176,000
2	New 12 kV Overhead line (inaccessible 250' spans)	\$1,655,000
3	12kV underbuild on existing 46kV line (accessible 150' spans)	\$808,000
4	12kV underbuild on existing 46kV line (inaccessible 250' spans)	\$1,137,000
5	New 12kV Underground line (2 feeders)	\$1,902,000
6	Padmount service 500KVA transformer	\$87,000
7	PME9 and PME3 switches for 1-ph and 3-ph transformers	\$282,000

Notes

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

1. Easement and/or land costs are NOT included with these estimates.
2. EA/EIS cost are NOT included with these estimates.
3. All estimates are provided in 2022 dollars.
4. Components 1 and 2 assume wood pole construction.
5. Components 3 and 4 assume no poles need to be replaced.
6. Component 5 does NOT include duct bank and MH construction.

The customer shall be responsible to confirm with Hawaiian Electric Project Management to determine if independent station power is required. Meter requirements and location(s) should also be discussed with Hawaiian Electric's Customer Installation Division (CID) during the customer's design stage. The customer shall submit an Electrical Service Request/Customer Installation Form via www.hawaiianelectric.com. Please refer to the Large Customer New Service Request brochure for milestones and estimated timelines:

https://www.hawaiianelectric.com/documents/for_business/large_customer_NSC_brochure_web.pdf

Station power shall emanate from an existing 12kV distribution line to the customer's point of connection, either by overhead utility poles installed by Hawaiian Electric, or underground line extension. For underground line extensions, the customer will be responsible to install and maintain the infrastructure consisting of, but not limited to, concrete encased ducts, manholes/handholes, transformer and switchgear pads, and meter equipment.

All cost associated with this line extension shall be the responsibility of the customer/developer and shall be provided to the customer in a proposal letter from Customer Installation Division.

The customer shall also be responsible for obtaining easements for line extensions thru properties in which Hawaiian Electric does not have rights. Please note that easements must be recorded with the Hawaii Bureau of Conveyances prior to energizing service.

It is recommended that the services of a consultant be used by the customer as early as possible in this process for guidance and help in preparation of scope, development of drawings, and cost related to station power.

2.5 Security System Interconnection Costs

2.5.1 Standalone energy storage or generation paired with energy storage that interconnect into a new 138kV substation

1. Equipment/Electronics for security \$530,000 with the following assumptions:

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

- a. Civil facilities associated with security (e.g., site fencing, conduits for security systems) for the new 138 kV substation, costs are included under Items 2.2.1.1 and 2.2.2.1 above.
- b. Systems incorporated will be equivalent to the Tier 1 requirements identified in the table below for Company facilities.
- c. Costs are in 2022 dollars.

2.5.2 Standalone energy storage or generation paired with energy storage that interconnect into existing 138kV substation

1. Equipment/Electronics for security within the existing 138 kV substation \$370,000 with the following assumptions:
 - a. Existing substation has been built to accommodate the addition of this 138kV breaker-and-a-half bay, including all groundwork (e.g., grading, grounding, rockfill, driveway, etc.) and fencing. Groundwork and fencing is not included in this estimate.
 - b. Systems incorporated will be equivalent to the Tier 1 requirements identified in the table below for Company facilities.
 - c. Costs are in 2022 dollars.

2.5.3 The customer shall be responsible to incorporate security components and systems for **their facilities** that consider the Security Guidelines for the Electricity Sector: Physical Security as published by the North American Electric Reliability Corporation (NERC), available at the link noted below, and that at a minimum adhere to Company's performance requirements, outlined in Company's Physical Security Strategy (as provided by Company), for the following four security concepts.

<https://www.nerc.com/docs/cip/sgwg/Physical%20Security%20Guideline%202011-10-21%20Formatted.pdf>

- **Deter:** Deploy visible physical security measures to encourage individuals to seek other, less secure targets.
- **Detect:** Utilize state of the art physical security technologies to detect unauthorized intrusion and provide real-time alerts to monitoring personnel. Detection to include 24/7 monitoring personnel.
- **Delay:** Deploy multiple physical security countermeasures to delay an intruder's access to assets, and provide time for incident assessment and appropriate response. (See: Defense in Depth)
- **Respond:** Take immediate measures to assess, interrupt, and/or respond to the incident, including notification to Company and the use of contracted patrol personnel and/or the involvement of law enforcement assets to apprehend an intruder.

Hawaiian Electric Company
APPENDIX H - INTERCONNECTION FACILITIES AND COST INFORMATION 2019

Type of Facility	Tier One High Criticality	Tier Two Medium Criticality	Tier Three Lower Criticality
Substation	<ul style="list-style-type: none"> • FLIR camera perimeter monitoring. • Secondary perimeter intrusion detection system. • Interior Video monitoring system with motion detection. • Gunfire detection/IP intercom public address system. • Electronic card access system for control & microwave houses. • Standard 8' high security fence with 3-strand barbed wire V-top. • Interior mounted 4' high cattle fencing. • LED perimeter lighting. • All gates will be secured using a proprietary padlock system. 	<ul style="list-style-type: none"> • Video monitoring system with motion detection. • Card access on control and microwave houses. • Standard 8' high security fence with 3-strand barbed wire V-top. • Interior mounted 4' high cattle fencing. • All gates will be secured using a proprietary padlock system. 	<ul style="list-style-type: none"> • Standard 8' high security fence with 3-strand barbed wire V-top. • Interior mounted 4' high cattle fencing. • All gates will be secured using a proprietary padlock system.

REQUEST FOR PROPOSALS
FOR
VARIABLE RENEWABLE DISPATCHABLE GENERATION
AND
ENERGY STORAGE
ISLAND OF O‘AHU

AUGUST 22, 2019

Docket No. 2017-0352

Appendix I – Rule 19 Tariff



**Hawaiian
Electric**

RULE NO. 19

Interconnection and Transmission Upgrades

A. GENERAL

1. Definitions

- a. "Betterment" means and includes any upgrading to a facility made solely for the benefit of and at the election of the Company, not attributable to the interconnection requirements. The Betterment includes any provisions for future expansion which cannot be charged to replacement. It also includes any related system work beyond that required for interconnection. If an existing facility is replaced with one of greater functional capacity or capability, the difference between the upgraded facility and a replacement facility of equivalent functional capacity is considered Betterment. It does not mean the substitution of a replacement facility for an existing facility, that is, an underground facility for an overhead facility, unless otherwise provided for in the RFP.

Example 1: A substation with a three breaker scheme is required to connect the Generating Facility to the grid. If the Company installs a substation with a six breaker ring bus scheme, the difference between installing a substation with a three breaker scheme and one with a six breaker scheme would be the Betterment.

Example 2: A transmission line needs to be upgraded to accommodate a new Generating Facility. The existing line is designed to withstand a 56 mph wind speed. The project includes upgrading the facilities to withstand a 100 mph wind speed. The increase in the design to the 100 mph wind speed criteria would be the Betterment.

Example 3: A transmission line needs to be upgraded to accommodate a new Generating Facility. In response to the Company's application to upgrade the line, the Commission orders that the line be placed underground. The cost difference between the overhead upgrade and the installation of the underground facilities would not be considered Betterment.

- b. "Company's Dispatch" means the Company's sole and absolute right to control, from moment to moment, through Supervisory Control, or otherwise, and in accordance with good engineering and operating practices in the electric utility industry, the rate of delivery of energy offered by the bidder to the Company.
- c. "Company's System" means the electric system owned and operated by the Company (to include 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.

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- d. "Distribution System" means all electrical wires, equipment, and other facilities at the distribution voltage levels (such as 25kV, 12kV, or 4kV) owned or provided by the Company, through which the Company provides electrical service to its customers.
- e. "Framework" means the Framework for Competitive Bidding dated December 8, 2006, adopted by the Commission in Docket No. 03-0372, Decision and Order No. 23121, which provides the mechanism for acquiring a future energy generation resource or a block of generation resources by the Company.
- f. "Generating Facility" means a bidder or utility-owned electrical energy generation resource that is interconnected to the Company electrical grid.
- g. "Grid Connection Point" means the point at which Interconnection Facilities connect to the Company's System, normally the Company's transmission grid. Facilities from the Generating Facility to the Grid Connection Point shall be considered Interconnection Facilities (see examples given in Attachment A). The Grid Connection Point will be identified in the IRS.
- h. "Interconnection Agreement" means a contract with the bidder that specifies the terms and conditions under which Interconnection Facilities (and, in some cases, certain System Upgrades) will be designed, installed, paid for, owned, operated and/or maintained. In some instances, such terms and conditions may be included in the PPA with a bidder, instead of in a separate Interconnection Agreement.
- i. "Interconnection Facilities" means the equipment and devices required to permit a Generating Facility to operate in parallel with and deliver electric energy to Company's System and provide reliable and safe operation of, and power quality on, the Company's System (in accordance with applicable provisions of the Commission's General Order No. 7, Company tariffs, operational practices and planning criteria), such as, but not limited to, transmission and distribution lines, transformers, switches, and circuit breakers.

Example 1: A wind farm facility constructed on a neighbor island (e.g. Molokai) that exports to the Company the energy it produces would be required to install undersea transmission lines to interconnect the Generating Facility to the Company's System. The undersea transmission lines and related facilities would be considered Interconnection Facilities.

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Example 2: A proposed Generating Facility is remotely located in a region of the island where there are no existing Transmission System facilities. In this case, if the size of the Generating Facility requires that it be tied to the existing Transmission System, the new Transmission System facilities (i.e. all electrical wires, equipment, and other facilities at the transmission voltage level) constructed from the Generating Facility to the Company's existing Transmission System facilities would be considered Interconnection Facilities.

- j. "Interconnection Requirements Study (IRS)" means a study, performed in accordance with the terms of the IRS Letter Agreement and with the applicable terms of the RFP and any resulting PPA, to identify the Interconnection Facilities, System Upgrades and other system requirements and all associated costs to integrate the proposed Generating Facility with the Company's System, and includes a detailed steady-state and a dynamic analysis. The IRS is conducted by the Company or its consultant and the bidder is responsible for the cost of conducting the IRS.
- k. "Interconnection Requirements Study Letter Agreement (IRS Letter Agreement)" means the letter agreement and any written, signed amendments thereto, between the Company and the bidder that describes the scope, schedule, and payment arrangements for the IRS.
- l. "IRP" means an electric utility's Integrated Resource Plan that has been submitted to the Commission for review and approval in the utility's IRP proceeding, in accordance with the Commission's IRP Framework.
- m. "IRP Framework" means the Commission's Framework for Integrated Resource Planning, dated May 22, 1992, as amended by In re Public Util. Comm'n, Docket No. 05-0075, Decision and Order No. 22490, filed on May 26, 2006.
- n. "Point of Interconnection" means the point of delivery of Energy and/or Capacity supplied by the bidder to the Company, where the facilities owned by the bidder interconnect with the facilities owned or to be owned by the Company. The bidder shall own and maintain the facilities from the Generating Facility to the Point of Interconnection. The Company shall own and maintain the facilities from the Point of Interconnection to the Company's System (see examples given in Attachment A). The Point of Interconnection will be identified in the IRS.
- o. "PPA" means a power purchase agreement or contract by the Company to purchase firm capacity, energy, or both.

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- p. "Renewable Energy Facility" means a Generating Facility that generates electricity using renewable energy as the source.
- q. "RFP" means a written request for proposal issued by the Company to solicit bids from interested third-parties, and where applicable from the Company or its affiliate, to supply a future generation resource or a block of generation resources to the Company pursuant to a competitive bidding process.
- r. "Subtransmission System" means all electrical wires, equipment, and other facilities at the subtransmission voltage levels (such as 46kV, 35kV, or 23kV) owned or provided by the Company, through which the utility provides electrical service to its customers.
- s. "Supervisory Control" means remote monitoring and/or control of a Generating Facility's power output and interrupting device status by means of a communication channel that is acceptable to the Company. For Generating Facilities intending to export power with an aggregate export capacity greater than 250kW, computerized supervisory control may be required to ensure the safety of working personnel and prompt response to system abnormalities in case of islanding of the Generating Facility. The Company shall determine the need for supervisory control based upon the results of the initial technical screening and/or IRS. Supervisory control shall include at a minimum monitoring of: (a) gross generation by the Generating Facility; (b) feedback of Watts, Vars, WattHours, current and voltage; (c) Vars furnished by the utility; and (d) status of the interrupting device. In addition, the supervisory control will allow the Company to trip the interrupting device during emergency conditions. Monitoring will be performed by system dispatchers or operators at the Company's control center.
- t. "System Benefit" means a material increase in power flow capability or in the reliability of the Company's electrical system from a system-wide perspective.
- u. "System Upgrades" means improvements made to the Company's System, other than the Interconnection Facilities, required to provide reliable and safe operation of, and power quality on, the Company's System (in accordance with applicable provisions of the Commission's General Order No. 7, Company tariffs, operational practices and planning criteria) when the Generation Facility is interconnected with the Company's System (see Attachment A). Such improvements may include, but are not limited to, new transmission or distribution lines, reconstruction or reconductoring of existing lines, circuit breakers, switches, transformers, buses, protective devices, communications, and substation equipment and facilities.

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- v. "Transmission System" means all electrical wires, equipment, and other facilities at the transmission voltage levels (such as 138kV or 69kV) owned or provided by the utility, through which the utility provides electrical service to its customers.
2. Application of Tariff

This Tariff shall apply to an RFP issued pursuant to the Framework and Interconnection Requirement Studies arising from the RFP process. In the event that there is a conflict between any provision of this Tariff and that of an RFP issued pursuant to the Framework and reviewed by the Commission in accordance with Sections III.B.2 and IV.B.6.e. of the Framework, the provisions of the RFP shall prevail. The terms and conditions established in a PPA arising from the RFP and approved by the Commission shall ultimately control over the requirements and terms of both this Tariff and the RFP.

3. Independent Observer

As established in the Framework, the duties and responsibilities of an Independent Observer (IO) include, among other duties and responsibilities, reviewing and monitoring the Company's communications, methods, and implementation of this Tariff, the RFP and related IRS processes.

B. INTERCONNECTION STUDY PROCESS FOR COMPETITIVE BIDDING

1. RFP Package Data -- available to all prospective bidders.

RFP packages issued by the Company shall contain general and regional system information to provide prospective bidders with high level guidance relating to the Company's existing transmission infrastructure. For example, RFP packages may include information in the form of an island map with areas of the Transmission System identified that are at or near their loading limits to provide high level guidance to bidders on areas of the island with transmission constraints. These constraints may include "load pockets", which are load-driven transmission constraints as well as areas of generation-driven transmission constraints. Because transmission impacts are to a large extent specific to the characteristics of supply-side proposals, definitive transmission information cannot be provided in these maps. Detailed geographic maps of the transmission system may not be part of this information due to security concerns. Rather, a map of the island with areas of the map shaded to identify areas (rather than circuits) of transmission constraints, may be provided.

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In addition, the RFP shall include applicable transmission planning criteria that will be used in the determination of interconnection requirements and potential Transmission System impacts. The information in the bid package will provide bidders with information (a) that should help in the selection of the proposed project's characteristics, including project site, project size, and project mode of operation, and (b) to estimate the interconnection requirements associated with their Generating Facilities and the opportunity to reflect the costs of the interconnection requirements in their bids.

2. Information Requests During Bidding Process - available to all prospective bidders.

During the bidding process, if a prospective bidder requires clarification or additional technical or operational information pertaining to the Company's System, a written request with specific questions may be submitted to the Company in accordance with the requirements set forth in the RFP. The written request, specific questions, and written Company response will be provided to all bidders.

3. RFP Requirements and Threshold Criteria Screening - evaluation performed on all bids received

Each bid received will be reviewed to ensure that it satisfies all of the RFP and threshold criteria requirements. The Company will determine whether each bid conforms to the specified RFP requirements and meets the minimum threshold criteria. Applicable performance standards may be part of the threshold criteria. These performance standards may vary depending upon factors such as the size of the generating resource(s) being acquired in the RFP, the Company's ability to dispatch the Generating Facility, the operational status (e.g., as-available vs. firm) of the Generating Facility, and the fuel type of the Generating Facility (e.g., run-of-the-river hydro may have different performance standards from wind power).

4. High Level Evaluation -- performed on all bids that pass threshold screening in RFP process

- a. All bids which pass the threshold screening in the RFP process will undergo a high level evaluation consistent with the requirements identified in the RFP, which will focus primarily on basic steady-state analyses (e.g., identifying thermal line impacts, voltage impacts, and any obvious "fatal flaws").

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- b. For each bid, a high level estimate of the costs of Interconnection Facilities and required System Upgrades will be developed based solely on the high level evaluation identified in Section B.4.a. of this Tariff and on unitized cost estimates (e.g., \$/mile for 138kV line, \$/transformer).
 - c. Results of the high level evaluation and high level estimate of the costs of Interconnection Facilities and required System Upgrades will be factored into the determination of which bids make the short list based on the requirements specified in the RFP.
 - d. Basic curtailment analysis of the proposed Generating Facility and related impacts to operations of existing Generating Facilities may also be factored into the determination of which bids make the short list based on the requirements specified in the RFP.
5. Full Interconnection Requirements Study - performed only on short list bids.
- a. An IRS shall be performed only for bid(s) that have met the RFP requirements, passed the threshold criteria, and made the short list, or as otherwise specified in the RFP.
 - b. An IRS would be performed either serially starting with the bid evaluated as the most competitive at the point of the evaluation process, then proceeding to the next most competitive bid on the short list or in parallel on all or some of the short list bidders simultaneously. The determination of whether or not IRS work is to be performed serially, in parallel, or a combination of the two will be based upon factors such as resource availability, number of short list bids, RFP schedule, and relative competitiveness of one bid to others, and the availability of all information and data from bidders necessary to perform the IRS work
 - c. The Company may if practicable "bundle" IRS work for multiple short list bids into a single IRS if the bids are, among other factors, technically, operationally and geographically (e.g., size, location, technology, timing, operating characteristics, etc.) identical or sufficiently similar to each other.
 - d. The results of the IRS, including identified Interconnection Facilities, System Upgrades, Point of Interconnection, and Grid Connection Point, will be provided to the bidder.
 - e. Bidders shall be responsible for incorporating the costs of their Interconnection Facilities into their bids. The RFP may provide bidders with an opportunity to revise their pricing proposals under certain circumstances. Any pricing change, if permitted under the terms of the RFP, will prompt a re-evaluation of short list bidders in the selection of the winning bid as provided for in the RFP.

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- f. The Company may perform the analyses included in the IRS, or the IRS or parts of the IRS may be contracted to an outside consultant specializing in such analyses for complex situations or in situations where the Company does not have available resources to conduct the analyses in a time frame agreeable to the Company.
- g. The scope and cost of the IRS will depend on the complexity of the Company's System and Generating Facility that must be modeled, and the degree to which the Generating Facility will affect the Company's System.
- h. The bidder will be responsible for the cost of the IRS (or such lesser amount as the Company may specify to facilitate the processing of interconnection requests for similarly situated facilities) to be performed in order to evaluate the impacts of the Generating Facility's interconnection to the Company's System.

C. INTERCONNECTION COST AND SYSTEM UPGRADE COST ALLOCATION FOR COMPETITIVE BIDDING

1. The bidder shall be responsible for the cost of Interconnection Facilities and shall be responsible for the installation and maintenance of Interconnection Facilities from the Generating Facility to the Point of Interconnection, unless otherwise specified in the RFP.
2. Interconnection Facilities from the Generating Facility to the Point of Interconnection shall be built by the bidder, unless the Company agrees otherwise.
3. Interconnection Facilities from the Point of Interconnection to the Grid Connection Point shall be built by the Company and paid for by the bidder, unless the Company agrees or determines otherwise. The Company may elect to include Betterments to Interconnection Facilities from the Point of Interconnection to the Grid Connection Point, and such Betterments shall be paid for by the Company. The cost of Betterments to such Interconnection Facilities will not be considered in the bid evaluations. The bidder shall acquire the necessary land and easements for Interconnection Facilities from the Point of Interconnection to the Grid Connection Point, unless the Company agrees otherwise. Interconnection Facilities from the Point of Interconnection to the Grid Connection Point, if built by the bidder, shall be transferred to the Company upon completion, along with the necessary land rights and easements.

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4. The Company shall install and maintain the identified System Upgrades arising from the interconnection of the Generating Facility and shall be responsible for the cost of such System Upgrades.

- a. The Company's cost for System Upgrades will be considered as a factor in the bid evaluations.
- b. The degree to which the System Upgrades provide System Benefits and/or Betterments will be considered in the bid evaluations.

5. Standards and Interconnection Agreements

- a. Interconnection Facilities and System Upgrades owned or to be owned by the Company shall be constructed in accordance with the Company's applicable standards and in accordance with the PPA or the Interconnection Agreement, if there is a separate Interconnection Agreement.
- b. Generating Facilities and Interconnection Facilities owned by the bidder shall be constructed in accordance with applicable State and County code requirements and in accordance with the PPA or the Interconnection Agreement, if there is a separate Interconnection Agreement.
- c. The bidder's Generating Facility may be interconnected and operated in parallel with the Company's System in accordance with the terms and conditions of the PPA between the Company and the bidder, and/or the terms and conditions of an Interconnection Agreement between the Company and the bidder, if there is a separate Interconnection Agreement.
- d. The bidder will be required to furnish, install, operate, and maintain suitable and sufficient equipment, to maintain adequate records, and to follow such operating procedures, as may be specified by the Company to protect the Company's System from damage resulting from the parallel operation of the Seller's Facility, including the equipment, records and operating procedures more fully described in the PPA and/or Interconnection Agreement, if there is a separate Interconnection Agreement.
- e. Interconnection Facilities shall be designed, installed operated and maintained in accordance with good interconnection practice. The objectives of good interconnection practice include, but are not limited to,
 1. Safety - To protect the safety of utility personnel, utility customers, and the public.

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2. Reliability - To maintain the reliability of the utility system for all utility customers.
 3. Power Quality - To provide for acceptable power quality and voltage regulation on the utility system and for all utility customers.
 4. Restoration - To facilitate restoration of power on the utility system.
 5. Protect Utility and Customer Equipment - To protect utility and customer equipment during steady state and faulted system operating conditions.
 6. Protect Generating Facilities - To protect generating facilities from operation of utility protective and voltage regulation equipment.
 7. Utility System Overcurrent Devices - To maintain proper operation of the utility system's overcurrent protection equipment.
 8. Utility System Operating Efficiency - To ensure operation at appropriate power factors and minimize system losses.
- f. The bidder shall obtain, at its expense, any and all authorizations, approvals, permits, and licenses required for the construction and operation of its Generating Facility and the interconnection of its Generating Facility with the Company's System, including but not limited to environmental permits, building permits, rights of way, or easements.
 - g. Where any Company-owned Interconnection Facilities are to be located on the site of the bidder's Generating Facility, the bidder shall provide, at no expense to the Company, a location and access acceptable to the Company for all such facilities.
6. Renewable Energy Facilities
 - a. In its IRP process, the Company may propose System Upgrades, to be paid for, owned and maintained by the utility, to encourage the development of Renewable Energy Facilities.
 - b. In its IRP process, the Company may propose to pay for Interconnection Facilities between the Point of Interconnection and the Grid Connection Point, in order to encourage the development of Renewable Energy Facilities.

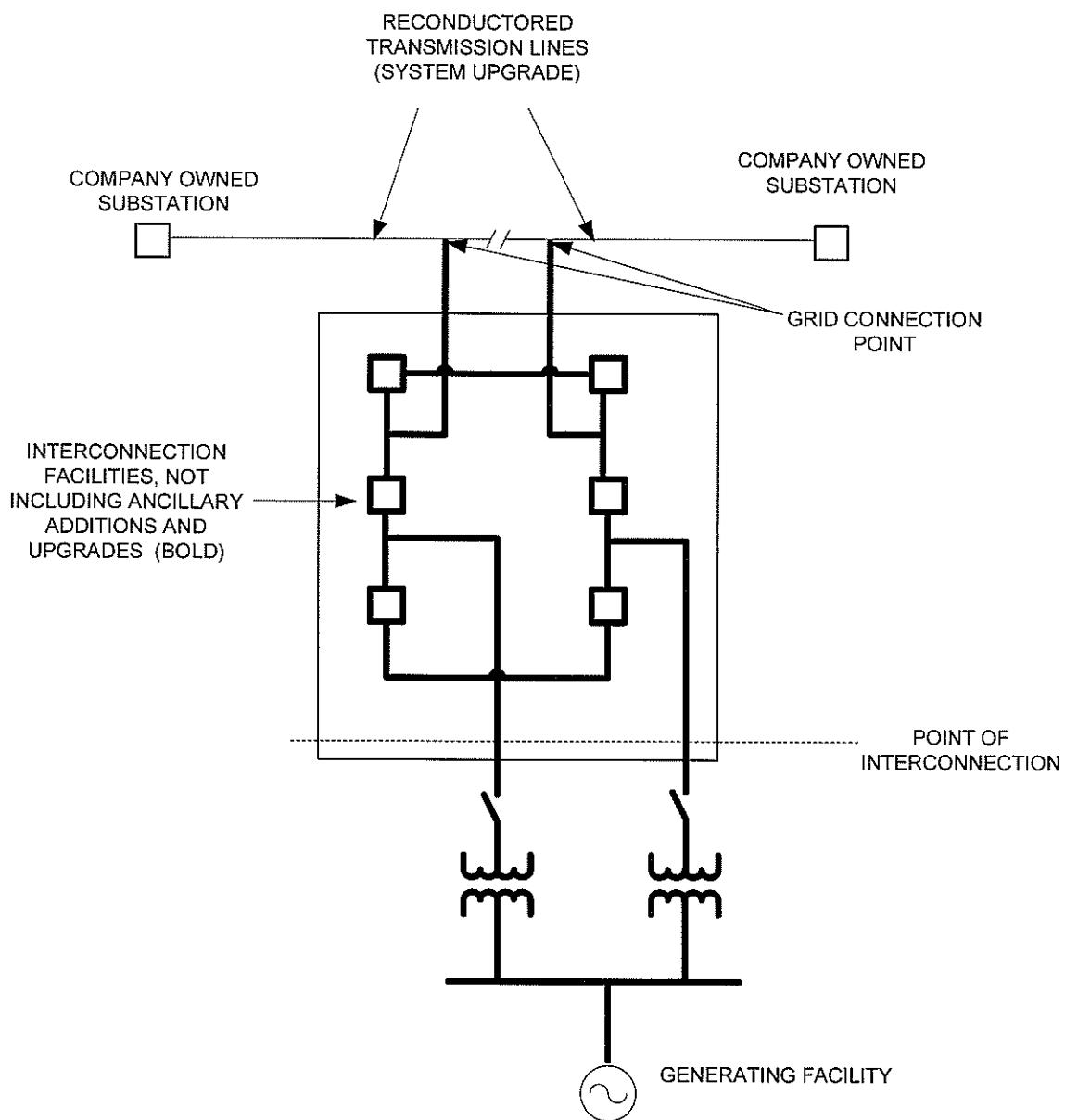
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Attachment A



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