BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAI'I

In the Matter of the Application of	)	
	)	
HAWAIIAN ELECTRIC COMPANY, INC.	)	Docket No. 2015-0389
HAWAI'I ELECTRIC LIGHT COMPANY, INC.	)	
AND MAUI ELECTRIC COMPANY, LTD.	)	
	)	
For Approval to Establish a Rule to	)	
Implement a Community-Based Renewable	)	
Energy Program, and Other Related Matters	)	
	)	

COMMUNITY BASED RENEWABLE ENERGY PROGRAM.

ATTACHMENTS 1 - 4
and
EXHIBITS A - B

VOLUME 1 OF 2

Date: November 30, 2015

Attachment 1
Summary of Revisions to Proposed Rule [XX]

Revised Tariff Section	Oct 1 CBRE Tariff	November 30 Revised CBRE Tariff	Rationale
B9	To the extent it is not otherwise determined to be cost-prohibitive, eligible customers will be allowed to buy into up to four (4) renewable energy Facilities.	Eligible customers will be allowed to buy into only one (1) CBRE Program Facility.	Administrative cost of allowing customer to participate into multiple CBRE projects was not deemed to be justified. This option can be revisited in the future.
B11 I3	Participants will pay an initial non-refundable enrollment fee to Hawaiian Electric	Participants will pay an initial non-refundable Program Cost Reimbursement Fee to the Developer Developers must pay, on a quarterly basis, the Program Cost Reimbursement Fee recovered from Participants to Hawaiian Electric within 15 days of the end of each quarter.	The Enrollment Fee has been renamed the Program Cost Reimbursement Fee to reflect that the purpose for the payment is for Participants to share in the costs to develop the software needed to qualify and enroll customers in the CBRE Program. The Program Cost Reimbursement Fee will be paid to developers and passed on to Hawaiian Electric at the end of each quarter for reimbursement. This change will allow customers to be able to finance this fee, which may have been more difficult when it was a line item on a Participant's electric bill. This change will also help to address state and federal securities issues.
B11	Participant Enrollment Fee: $66/ kW AC.	Program Cost Reimbursement Fee: $65/kW AC	The participant enrollment fee has been adjusted based on revised cost recovery calculation. See Section VIII (Proposed Accounting Treatment and Cost Recovery) of the Transmittal.
D2a	Developer Enrollment Fee: $66/kW AC	Developer Enrollment Fee: $52/kW AC of installed capacity made available for CBRE	The Developer Enrollment fee has been adjusted based on revised cost recovery calculation. See Section VIII (Proposed Accounting Treatment and Cost Recovery) of the Transmittal.
B12	$1.17/ kW per month Participant Administration Fee	$1.92/ kW per month Participant Administration Fee	The Participant Administration Fee has been adjusted based on revised cost recovery calculations and additional incremental costs. See Section VIII (Proposed Accounting Treatment and Cost Recovery)of the Transmittal.

Revised Tariff Section	Oct 1 CBRE Tariff	November 30 Revised CBRE Tariff	Rationale
C8	Surplus credits carried forward monthly with any surplus credits credit on an annual basis forfeited. See section C8 in the Tariff filed on October 1.	If the Participant's monthly net credit exceeds the eligible charges then this excess amount is surplus credit. Surplus credit will not be carried forward and will be forfeited by the Participant.	This change is to align with the Commission's DER D&O 33258 issued on October 12, 2015 in Docket No. 2014-0192.
D2b	Not specified	Except with the written consent of the Company each physical address (defined as a single residential address or a single tax map key if a commercial or industrial facility) may not have more than one Facility of the same technology type contracted under this CBRE Program.	This amendment is to ensure that the definition of Tier 1, 2 and 3 projects is clear. This will ensure that the rules for the Tier 3 CBRE RFP process are not circumvented by splitting up a Tier 3 project into a series of Tier 1 and/or 2 projects.
D5	In Section D on page 28 of the October 1 transmittal it is stated that: Participants that develop their own fully subscribed CBRE Program Facility will not be required to use the online enrollment tool, however, such projects must provide a list of Participants' interest which sum to 75% of the Facility capacity before the Small Model PPA or Large Model PPA, as applicable, is executed.	Participants that develop their own CBRE Program Facility may make an application to develop their own fully subscribed Tier 1 CBRE Program Facility. In addition to the requirements set out in Section D.2, Participants that apply to develop their own CBRE Program Facility must submit the following to Hawaiian Electric: • List of Participants, including their respective Hawaiian Electric customer account numbers, service address numbers and proposed interests in the output of the Facility. The sum of the participant's proposed interests must equal 100% of the output of the facility. • Incorporation documents, including a list of owners that matches that list of Participants. • Written confirmation that all participants are residents of the State of Hawai'i.	The section has been amended to clarify the rules to determine if a project can be considered to be developed by the participants. If the participants are developing their own CBRE Facility then it is not necessary to retain 25% of the facility output under a PPA to align the developer's incentives with the participants' interests. This option has been restricted to Tier 1 projects which is appropriate for the smaller projects that participants may develop.

Revised Tariff Section	Oct 1 CBRE Tariff	November 30 Revised CBRE Tariff	Rationale
D8	Project Selection for Tier 1 and Tier 2 will be on a first ready basis. A Project will be deemed ready once it has met the requirements described on page 4 and 5 of Exhibit B in the October 1 CBRE Transmittal.	Applications for Phase 1 Tier 1 and Tier 2 CBRE Program solar projects will be conditionally accepted subject to verification of the requirements in section D.2, section D.5 if applicable and the review for completeness as set forth in Rule 14H, if proposing to interconnect at the distribution level. Upon successfully meeting the CBRE requirements and the Rule 14H completeness review, if applicable, the project will be accepted into Phase 1 of the CBRE program.	Requirement that the Company meet the Rule 14H timeframes, where applicable, for Tier 1 and 2 CBRE facilities, in addition to the other requirements before capacity is allocated will reduce the risk of projects failing to proceed with the technical review process promptly.
H1	Not defined	All Facilities shall be designed to interconnect and operate in parallel with the Company's system without adversely affecting the operations of its customers and without presenting safety hazards to the Company's or other customers' personnel. The Facilities and the interconnection systems must be in compliance with all applicable safety and performance standards of the National Electric Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), the Company's interconnection standards and procedures provided in Rule 14, Section H, and Rule 19, as amended from time to time, and also subject to any other requirements as may be specified in the CBRE Large Model PPA or Small Model PPA.	Compliance with safety and performance standards are necessary and consistent with the boilerplate language in the Schedule FIT Tariff
H4	Not specified	Each CBRE Facility will have one interconnection point and suitable metering equipment to measure the energy output of the CBRE Facility.	This amendment is necessary to clearly define the meaning of a CBRE facility to ensure administrative efficiency.
H5	Not specified	To ensure that projects are actively moving towards completion, any project that does not adequately respond within 15 business days to Hawaiian Electric's requests for information or action may be removed from the CBRE Program.	This is consistent with the Companies' application of Order 32499 issued in Docket 2013-0192 and necessary to ensure projects continue to move towards completion.

Revised Tariff Section	Oct 1 CBRE Tariff	November 30 Revised CBRE Tariff	Rationale
I6	Not specified	Electric energy delivered to the Developer by the Company shall be billed under the Company's applicable rate schedule. Electric energy delivered to the Developer by the Company will be metered separately from the electric energy delivered by the Seller to the Company, either by use of multiple meters or a meter capable of separately recording the inflow and outflow of electricity.	Clarification required to define the billing arrangements for developers of CBRE facilities, in particular for the situation where the project consumes energy from the grid in excess of what is produced.
J1	Not specified	The Participant may not sell less than 50% of their interest in the energy output of the Facility to another Participant. If the Participant is not selling their entire interest they must retain an interest expected to offset a minimum of 25 percent of their historic energy consumption for the previous twelve months. Any payment for the transfer must be in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participation Agreement.	Limitations are required to address federal securities issues but still permit participants a limited opportunity to sell their interest to accommodate usage changes.
J2	Developer must include in the Participation agreement a right for Participant to sell their interest back to Developer in the limited circumstance that Customer no longer has an account with Hawaiian Electric.	Developer must include in the Participation Agreement a right for Participant to sell their interest back to Developer in the limited circumstances where Customer no longer has an account with Hawaiian Electric or is no longer a resident of the State of Hawai'i. The Developer must buy back the interest in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement within 30 days of the Participant's request.	CBRE Program is limited to and intended to benefit Hawaii residents so a change in residency outside of the State would necessarily result in a termination from the CBRE Program. It is appropriate that Participants have the option to sell their interest back to the Developer at a fair price if this occurs.

Revised Tariff Section	Oct 1 CBRE Tariff	November 30 Revised CBRE Tariff	Rationale
J2	Page 37 of the transmittal states: *If a Participant exercises a buy-out option, it will not be able to purchase an interest in any other CBRE Facility for a period of three (3) years.*	If a Participant exercises a buy-out option from the Developer, it will not be able to purchase an interest in any other CBRE Program Facility for a period of one (1) year.	Amendment to provide more flexibility to participants and to address state securities issues.
J3	Not specified	In the event that a Participant's principal place of residence or principal place of business is no longer the State of Hawai'i then the Participant's interest in the output of the Facility is deemed to immediately revert back to the Developer at the time Participant loses its resident/principal place of business status. The Participant must contact Developer for payment of the reverted interest. Developer must pay Participant within 30 days of Participant's request in accordance with the present repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement minus the value of any credits Participant received between the time the interest reverted back to Developer and when Hawaiian Electric was notified to stop providing credits to Participant. The date for purposes of determining the price per the schedule shall be the date the Participant lost its residency status in the State of Hawai'i.	Immediate termination is necessary to address federal securities issues.

Attachment 2

Key CBRE Oahu Tier 3 Model PPA Terms and Conditions

The Large Model PPA contains indemnification, insurance, third party evaluations and other provisions, including, provisions pertaining to the Term,[1] Seller's delivery of as-available renewable energy from the Facility, CBRE requirements, and Seller's compliance with laws, which will serve to protect Hawaiian Electric and its customers, including CBRE participants, from certain risks associated with interconnecting the Facility to Hawaiian Electric's system. Moreover, the terms and conditions of the Large Model PPA will not affect Hawaiian Electric's ability to provide electric service to its customers and is not discriminatory to other small power producers. A summary of some of the key terms and conditions of the Large Model PPA is provided below.

1. Term

a. Initial Term and Extended Term. In general, subject to Section 12.1 of the Large Model PPA, the Term of the Amended and Restated PPA commences upon the Execution Date and remains in effect for an Initial Term of twenty-two (22) years following the Commercial Operations Date. Upon the expiration of the Initial Term, the Amended and Restated PPA automatically continues in effect until terminated by either Party upon not less than ninety (90) days advance written notice to the other Party. [2]

b. Commission Approval and Associated Termination Rights. Upon the Execution Date, the Parties are required to use good faith efforts to obtain, as soon as practicable,

[1] Terms used but not defined herein shall have the meaning set forth in the Large Model PPA.
[2] See Large Model PPA §12.1 (Term).

a PUC Approval Order that does not contain terms and conditions deemed to be unacceptable by Hawaiian Electric as set forth in the Large Model PPA.[3]

The Large Model PPA includes provisions that if the Company's application for a satisfactory PUC Approval Order is denied or if a satisfactory PUC Approval Order is not obtained or within twelve (12) months of the PUC Submittal Date or within a longer period agreed to by the Parties, Hawaiian Electric or Seller may, by written notice delivered within one hundred eighty (180) days of such date, declare the Large Model PPA null and void.[4]

The Large Model PPA also requires the Seller to seek participation without intervention in the PUC docket for approval of the PPA.[5] The scope of such participation will be determined by the PUC, however, the Seller expressly agrees to seek participation for the limited purpose and only to the extent necessary to assist the PUC in making an informed decision regarding approval of the PPA. If the Seller chooses not seek participation, then Seller waives the right to claim that the information submitted and the arguments offered by the Company in support of the application requesting the PUC Approval Order are insufficient to meet Company's burden of justifying that the terms of the Large Model PPA are just and reasonable and in the public interest, or otherwise deficient in any manner for purposes of support the Commission's approval of the PPA.[6]

Additionally, if a PUC Approval Order is obtained within twelve (12) months of the PUC submittal date but that order is appealed, and a Non-appealable PUC Approval Order is

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[3] See Large Model PPA § 12.3 (PUC Approval). A satisfactory PUC Approval Order is one that satisfies the requirements of Section 29.20(A) (PUC Approval Order).

[4] See Large Model PPA § 12.6(b) (Time Period for PUC Approval).

[5] See Large Model PPA § 12.3(b) (PUC Approval).

[6] Id.

not obtained within twelve (12) months of the PUC Submittal Date, or within a longer period agreed to by the Parties, Hawaiian Electric or Seller may, by written notice delivered within ninety (90) days of such date, declare the Large Model PPA null and void.[7]

Finally, subject to the terms and conditions of Section 12.6(a) of the Large Model PPA, if the PUC Submittal Date has not occurred within 120 Days of the Execution Date, for the Large Model PPA, or such other date as Hawaiian Electric and Seller may agree, Company may, by written notice delivered within 30 Days of the expiration of such period, declare the Large Model PPA null and void if the reason the application has not been filed is (i) any one or more of the conditions set forth in Section 12.5 (Prior to Effective Date) of the Large Model PPA or (ii) Seller's failure to provide in a timely manner information reasonably requested by Company to support such application.

c. Company Right To Declare Large Model PPA Null & Void Prior to Effective Date. Pursuant to Section 12.5 (Prior to Effective Date) of the Large Model PPA, Hawaiian Electric has the right to declare the Large Model PPA null and void prior to the Effective Date for the following four reasons:

- Company reasonably determines that the description of the Facility in the Agreement and IRS no longer represent the Facility Seller is cable of constructing;
- Seller is in breach of any of its representations, warranties and covenants under the PPA, including but not limited to Section 22.2(B) or Section 3(b)(ii) of the Large Model PPA;
- Seller requests Company to stop or delay performance; or

[7] Id.

- Seller notifies Company it desires to modify the Large Model PPA or the Facility as described in the Large Model PPA and interconnection requirements study.

d. Terminations Rights upon Default. Notwithstanding any of the foregoing, the Large Model PPA may be terminated in accordance with the terms of Article15 (Events of Default).[8]

2. Energy Pricing

The pricing terms are covered in Attachment J (Energy Purchases by Company) of the Large Model PPA. Specifically, Section 1 (Price for Purchase and Rate of Delivery) of Attachment J (Energy Purchases by Company) will set forth the Contract Price for each year during the Term.

a. Hawaii State Tax Credit Price Adjustment. Seller is required to calculate the Refundable Tax Credit and Non-Refundable Tax Credit into the Contract Price based on the maximization of such credits. In the event that Seller's Facility does not gain the benefit of the Refundable Tax Credit and/or Non-Refundable Tax Credit, Seller expressly acknowledges and agrees that it shall not amend the Contract Price.

b. Other Adjustments to Energy Pricing. Hawaiian Electric is required to accept and pay for electric energy at the rates set forth in Section 1 (Price for Purchase and Rate of Delivery) of Attachment J (Energy Purchases by Company); provided, however, pursuant to Section 1 (Price for Purchase and Rate of Delivery) of Attachment J (Energy Purchases by Company) of the Large Model PPA, in any Contract Year, if the sum of the Actual Output for such Contract Year is in excess of 120% of the Annual Contract Energy for such Contract Year

[8] See Large Model PPA §12.8.

(as determined pursuant to Section 2.3 (Determination of Annual Contract Energy) of the Large Model PPA), then the price paid for such energy in excess of 120% will be 75% of the otherwise applicable Contract Price for such electric energy; provided, however that the credit rate to CBRE participants shall continue to be the price set forth in Section 1 (Price for Purchase and Rate of Delivery) of Attachment J (Energy Purchases by Company) of the Large Model PPA .

The Large Model PPA also requires Hawaiian Electric to use reasonable efforts to accept test energy that is delivered as part of the normal testing for generators, provided that Seller is also required to use reasonable efforts to coordinate such normal testing with Hawaiian Electric so as to minimize adverse impacts on Hawaiian Electric's system and operations. Hawaiian Electric will compensate Seller for test energy, as provided in Section 2.5 (Payments Prior to Commercial Operations Date) of the Large Model PPA.

3. Curtailment Block

The Large Model PPA contains curtailment block provisions. Under the Large Model PPA the block would include all Phase 1 CBRE solar and wind projects that satisfy the Block B Inclusion Conditions set forth in Section 2(e)(iii)(B) (Block B Inclusion Conditions for Block B Eligible Projects) of Attachment B (Facility Owned by Seller) of the Large Model PPA. The concept of the provision is very similar to the block curtailment set forth in previous PPAs approved by the PUC. The curtailment block concept was intended to provide a mechanism for multiple projects with anticipated commercial operation dates in close proximity to be accommodated equitably within the existing reverse chronological seniority policy. By including all eligible Phase 1 CBRE wind and solar projects in the curtailment block, all participants are able to equally assess their risks related to curtailment seniority, which would have otherwise been out of their control under the previous PPA provisions that correlate curtailment seniority with the date of the Commission's non-appealable PPA approval.

The specific block curtailment mechanisms are set forth in Section 2(e)(iii) of Attachment B (Facility Owned by Seller) of the Large Model PPA. All projects within the curtailment block will have the same curtailment seniority date and curtailment will be shared proportionally for all projects within the block. The block curtailment procedures are set forth in Attachment T (Block Curtailment Procedures) to the Large Model PPA. Attachment T to the Large Model PPA provides an explanation with illustrative examples of how curtailment would occur under the block mechanism.

4. Company's Right of First Negotiation to Purchase Facility and Other Purchase Rights

Under certain conditions in which Seller wishes to dispose of the Facility or effect a change in control of Seller, Hawaiian Electric shall have a right of first negotiation to purchase the Facility from Seller.[9] Further, in the event that Hawaiian Electric is subject to consolidation and capital lease treatment under FASB ASC 810 and 840, respectively, with respect to Seller and the Facility, in addition to such other efforts that may be taken by the Parties to eliminate such accounting treatment, the parties may agree to effectuate a sale of the Facility to the Company.[10] Such sale shall be on commercially reasonable terms at a fair market value.

Any purchase of the Facility by Hawaiian Electric shall be subject to application to the Commission for approval and, prior to consummation, formal Commission approval of such purchase on such terms and conditions satisfactory to Company.

[9] See Large Model PPA §19.1 (Sale of the Facility) and Large Model PPA Attachment P (Sale of Facility by Seller).

[10] See Large Model PPA § 24.5.

5. Modeling and Source Code Escrow.

Pursuant to Section 6 (Modeling) of Attachment B (Facility Owned by Seller) of the Large Model PPA, Seller shall provide detailed data regarding the design and location of the Facility to permit the modeling of the various systems of the Facility (each a "Required Model" and collectively, the "Required Models"). If the Required Models are not provided in the form of "Source Code" (as defined in the "Definitions" section of the PPA), Seller shall be responsible for causing the relevant Source Code for the Required Models to be deposited into a Source Code escrow account under an agreement which shall specify the specific conditions upon which such Source Code may be released to Hawaiian Electric or in the alternative establish a Monetary Escrow. Generally, such Source Code or the funds from the Monetary Escrow will be made available to Hawaiian Electric under circumstances where Required Models need to be re-built or updated and the Required Model or relevant Source Code is unavailable due to the unavailability of the applicable equipment manufacturer and/or Source Code developer.

6. Meters

Pursuant to Section 10.1 of the Large Model PPA, Hawaiian Electric will purchase, own, install and maintain a Revenue Metering Package suitable for measuring the export of electric energy from the Facility sold to the Company. The metering point will be as close as possible to the Point of Interconnection as allowed by the Company. Seller must make available a mutually agreeable location for the Revenue Metering Package, and must install, own and maintain the infrastructure and other related equipment associated with the Revenue Metering Package.

Section 10.1 of the Large Model PPA also provides that "Company shall test such revenue meter prior to installation and shall test such revenue meter every fifth (5^{th}) year

[emphasis added]. Seller shall reimburse Company for all reasonably incurred costs for the procurement, installation, maintenance and testing work associated with the Revenue Metering Package. Hawaiian Electric acknowledges that the Commission, in two separate dockets seeking approval of PPAs, required annual meter testing, consistent with the Hawaiian Electric Companies"[11] Feed-in Tariff ("FIT") Tier 3 PPA proposal that was filed in the FIT docket (Docket No. 2008-0273).[12]

Hawaiian Electric recognizes that the five-year term for meter testing in the Large Model PPA represents a departure from equivalent provisions in prior PPAs, including the FIT Tier 3 PPA. However, Hawaiian Electric respectfully submits that the departure is just and reasonable, and in the public interest for several reasons.

First, from a technical standpoint, because the Company has moved from mechanical meters to electronic meters, yearly testing of meters for projects of the size of the Project is unnecessary and impractical. The Company has found that the new electronic meters have shown to be highly accurate and reliable, and are not prone to degrade like mechanical meters. In fact, in the Company's experience, electronic meters have had an essentially 100% pass rate on testing.

Second, annual meter testing for CBRE Projects is simply not cost-effective. The largest possible size of a CBRE Project on Oahu is 35 MW compared to the size of other existing IPP projects (e.g., Kalaeloa (208 MW), AES (180 MW), and HPower (73 MW)). Given the relatively lower volume of kilowatt-hours being measured by the meter for CBRE Projects, it is

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[11] "Hawaiian Electric Companies" collectively refers to Hawaiian Electric, Maui Electric Company, Limited, and Hawai'i Electric Light Company, Inc.

[12] See Decision and Order, filed on November 18, 2011, in Docket No. 2011-0185 (approving PPA for Kapolei Sustainable Energy Park); Decision and Order No. 30712, filed on October 22, 2012, in Docket No. 2011-0384 (approving PPA for Kalaeloa Renewable Energy Park).

reasonable, from a cost-benefit perspective, to require less frequent meter testing. Importantly, the Hawaiian Electric Companies' PPAs, including this Large Model PPA, generally require IPPs to reimburse the utility for all reasonably incurred costs for meter testing. Thus, elongating the period for required meter testing under future PPAs will result in cost savings to IPPs, which may flow through to ratepayers via lower contract prices.

Third, lengthening the period for meter testing improves operational efficiencies. The current process of testing meters is time consuming, and given the performance of the electronic meters, does not yield a significant benefit. If the Company is able to move toward less frequent meter testing, this will free up the Company's internal resources, allowing personnel more time to focus on serving customers.

For all of the foregoing reasons, the Company submits that the five-year term for meter testing in this Large Model PPA is reasonable, and should be approved. The Company has implemented this policy for all CBRE Projects, as well as other recently filed and approved projects, and, on a going forward basis plans to do so for all renewable, as-available projects of similar size for all of the reasons addressed above. In addition, at the appropriate juncture, the Company plans to propose revisions, reflecting this policy, to its FIT Tier 3 PPA. The Company will continue to monitor this policy and make adjustments, when necessary, to ensure that it reflects cost-effective and technically sound requirements.

7. Compliance with Laws and Regulations

Seller is responsible for obtaining, at its expense, any and all necessary permits, government approvals and land rights for the construction and operation of the Facility, including but not limited to rights-of-way, easements or leases. Seller shall also install, operate and maintain the Facility safely and in compliance with all applicable Laws. Prior to commencement of construction of the Company-Owned Interconnection Facilities, Seller shall

provide the necessary permits, government approvals and land rights for construction, ownership, operation and maintenance of Company-Owned Interconnection Facilities.[13]

8. Site Restoration

After termination of the Large Model PPA, or if the Large Model PPA is declared null and void, if upon Hawaiian Electric's request, Seller will, at its expense, remove all (1) Company-Owned Interconnection Facilities and Seller-Owned Interconnection Facilities from the Land, and (2) restore the Land to its condition prior to construction. Hawaiian Electric may elect to remove all or part of the designated Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities itself because of operational concerns, in which case Seller will reimburse Hawaiian Electric for the cost of removal.[14]

9. Community Based Renewable Energy ("CBRE")

The Large Model PPA provides several provisions specifically required in order to implement the Company's CBRE Program. Two terms were created to address the ownership of Facility's Actual Output. The Allocated Portion refers to that portion of the Actual Output the interest in which is held by Participants. The Retained Portion refers to the portion of the Actual Output that is not included in the Allocated Portion and is, therefore, retained by Seller.[15] Section 2.2 (Payment for Electric Energy From and After the Commercial Operations Date) discusses payment for electric energy. Pursuant to this section Company shall pay Seller for the Retained Portion of the electric energy purchased under the Large Model PPA on a monthly

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[13] See Large Model PPA §§ 11.1-11.4.

[14] See §7 (Land Restoration) of Large Model PPA Attachment G.

[15] See Definitions of Large Model PPA.

basis as provided in Section 2.9 (Payment Procedures).[16] Company shall pay for the Allocated Portion of the electric energy in the form of CBRE Credits applied to the Retail Electric Bill of each Participant in an amount proportionate to the Participant Interest of such Participant for the calendar month in question.[17]

The majority of the other provisions related to the CBRE Program are found in Attachment Q (Seller's CBRE Program) of the Large Model PPA. The purpose of Attachment Q (Seller's CBRE Program) is to set forth certain requirements of the Company CBRE Program as of the Execution Date. Hawaiian Electric reserves the right to modify the requirements of the CBRE Program if Hawaiian Electric reasonably concludes that such modifications are necessary to comply with the CBRE Tariff and applicable Laws and Seller is required to comply with all such modifications.[18] This section sets forth the basic requirements for Seller in order to be eligible to participate in the CBRE Program.[19] Among such requirements, Seller is required to be organized or formed under the laws of the State of Hawaii.

Attachment Q (Seller's CBRE Program) also details the CBRE Software which will be developed for purposes of, among other things, enrolling Account Holders and administering their continued participation in the CBRE Projects and the Enrollment Tool.[20] The Large Model PPA also sets forth the eligibility requirements for Participants and Seller's

[16] See Large Model PPA § 2.2(a).

[17] See Large Model PPA § 2.2(b).

[18] See § 1 (Company CBRE Program) of Large Model PPA Attachment Q (Seller's CBRE Program).

[19] See § 2 (Basic Requirements), § 3 (Eligibility Requirements of Seller), and § 4 (Additional Eligibility Requirements of Seller) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[20] See § 5(a) (CBRE Software) of the Large Model PPA Attachment Q (Seller's CBRE Program).

obligations to verify Participant's eligibility.[21] Section 9 (Enrollment of Participants) of Attachment Q (Seller's CBRE Program) details the process of enrolling Participants in Seller's CBRE Program and requires Seller to collect a Program Cost Reimbursement Fee from Participant's. Seller is required to pass through such Program Cost Reimbursement Fee to Hawaiian Electric for the purpose of paying for the costs of the developing the Enrollment Tool on a quarterly basis.[22]

Seller is also required to enter into an agreement with Participants who purchase an interest in the Actual Output of Seller's Facility. The Company has provided a Model Customer Agreement for Seller's use. Company will attempt to secure "no action" letters from the U.S. Securities and Exchange Commission ("SEC") and the State of Hawaii Commissioner of Securities ("Securities Commissioner") indicating that these authorities would not take any action against Seller for violation of federal and state securities laws respectively. If a "no action" letter cannot be obtained from the State Securities Commissioner, Hawaiian Electric will request the Securities Commissioner to issue an interpretive order providing guidelines pursuant to which the Seller may request a non-enforcement letter from the Securities Commissioner. In the event Company is unable to obtain such no action letters or the Securities Commissioner does not issue such an interpretive order, and if Seller is unable to identify an available exemption from federal and state securities laws, Seller will be required to register the Percentage Interests before Seller can sell any Percentage Interests to Account Holders. Company reserves the right to revise the Model Customer Agreement based on changes in securities laws or information received from the SEC and/or State Securities Commissioner prior

[21] See § 6 (Eligibility Requirements for Participants to be Verified by Seller With Data Made Available by Company), § 7 (Eligibility Requirements for Participants to be Verified by Seller), and § 8 (Limitation on Size of Participant Percentages) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[22] See § 9(f) (Invoicing Seller) of the Large Model PPA Attachment Q (Seller's CBRE Program).

to the Commercial Operations Date. If Seller uses its own form of customer agreement or modifies the Model Customer Agreement, the Large Model PPA sets forth representations, warranties and covenants that must be included in such agreement. Among these is that Seller has received evidence of federal and state securities law compliance.[23]

The Large Model PPA provides that Seller must repurchase the Participant Percentages under three circumstances: (1) if Participant no longer has an account with Hawaiian Electric, (2) if the Large Model PPA is terminated due to an Event of Default by Seller or if Seller terminates the agreement for Force Majeure, and (3) if Participant loses its Hawaii Residency Status. The repurchase price shall be the price set forth in the Repurchase/Resale Price Schedule attached as Exhibit Q-1 to the Large Model PPA.[24] Participants are also allowed to sell, following the first anniversary of such Participant's Commencement Date, all or a portion of the Participant Percentage to another Account Holder of Hawaiian Electric. The resale price shall be the price set forth in the Repurchase/Resale Price Schedule attached as Exhibit Q-1 to the Large Model PPA.[25]

Section 13 (CBRE Administrator) of Attachment Q (Seller's CBRE Program) of the Large Model PPA requires Seller to designate a specific individual as CBRE Administrator for Seller's project that Participants may contact. Seller is also required to disclose specific

[23] See § 10 (Approved Form of Customer Agreement) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[24] See § 11 (Repurchase of Participant Percentages) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[25] See § 12 (Transfer of Participant Percentages) of the Large Model PPA Attachment Q (Seller's CBRE Program).

information to Participants and comply with all state and federal securities laws.[26] Seller is also required to establish and maintain an O&M Escrow. Hawaiian Electric shall collect the O&M Fee from Participants by deducting such fee from the CBRE Credits on Participants' Electric Bills. Hawaiian Electric shall deposit such O&M Fees into the O&M Escrow. Seller may only draw funds from the O&M Escrow for purposes of paying for the reasonable operating and maintenance expenses of the Facility as such expenses are incurred by Seller.[27] Finally, Seller is required to comply with all federal and state securities laws in the marketing of the Participant Percentages.[28]

10. Seller Availability

The Large Model PPA provides that if Seller's Average Annual Energy for a given three-year period is less than 90% of the Average Annual Contract Energy for that same three-year period, Seller is required to pay liquidated damages in the amount of $40/MWh of the shortfall. The portion of the liquidated damages that is equivalent to the Retained portion of the Actual Output for the Contract Year in questions shall be retained by Company as compensation for the damages incurred by Company due to he shortfall in output and the portion of the liquidated damages that is equivalent to the Allocated Portion of the Actual Output for the Contract Year in question shall be deposited by Company in to the O&M Escrow, which will have the effect of reducing the amount of the O&M Fee that would otherwise be collected by Company on behalf of Seller as a monthly deduction from each Participant's CBRE Credits.[29]

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[26] See § 14 (Additional Representations of Seller) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[27] See § 16 (O&M Escrow) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[28] See § 19 (Marketing and Sales of Participant Percentages) of the Large Model PPA Attachment Q (Seller's CBRE Program).

[29] See Model PPA § 2.3(c) (Liquidated Damages).

Attachment 3

Summary of Differences Between Tier 3 (Large) Model PPA and Tiers 1 & 2 (Small) Model PPA

CBRE Large Model PPA	CBRE Small Model PPA	Rationale
Most Terms and Conditions in the body of Large Model PPA are not negotiable Attachments are negotiated	Small Model PPA will be pre-approved; the Attachments will be updated as a result of the Technical Review / IRS "Effective Date" = "Execution Date"	• Small Model PPA will be pre-approved (similar to FIT) to expedite execution • This was part of a compromise reached with stakeholders to expedite the development of smaller CBRE Program Facilities.(See Transmittal Filing at 23-24).
PPA rate, O&M Fee and upfront payment determined by RFP	Phase I Solar: • Fixed PPA rate set at $0.13475 / kWh • Developer O&M Fee $1.14 / kWh w/2% escalation • Upfront payment $2,005 / kW Phase I Wind: PPA rate, O&M Fee and upfront payment determined by RFP (after RFI)	• Allowing the Phase 1 solar Tiers 1 and 2 to have set rates was part of a compromise reached with stakeholders to expedite the development of smaller CBRE Program Facilities in order to meet the 2016 Federal Tax Credit timelines.(See Transmittal Filing at 23-24). • See also Revised Proposed Rule Section D.4.
Applicable interconnection process as specified in the RFP and the Interconnection Requirements Study ("IRS") Letter Agreement	Added definition for "Technical Review" determined by Company's Tariff Rule 14, paragraph H ("Rule 14H") for distributed generation ("DG") projects that may not require an IRS; language in body changed from "IRS" to "Technical Review" where applicable.	• CBRE project interconnection at the DG level will be treated consistently with other DG projects

CBRE Large Model PPA	CBRE Small Model PPA	Rationale
Article 2.3: Threshold for Liquidated Damages set at 90% of 3-year rolling average of Annual Contract Energy	Threshold for Liquidated Damages set at 85% of 3-year rolling average of Annual Contract Energy	Lower threshold chose because: • Small projects have a greater uncertainty of their Annual Contract Energy • Smaller projects may be less reliable
Article 5.2: Seller required to submit a written schedule of maintenance outages which will reduce the Facility capacity by 5MW or more for the next two year period.	Schedule of all maintenance outages must be submitted to the Company	• Need visibility of planned outages even for smaller projects
Article 6.5: Forecasts of Output: Seller is required to provide via SCADA interface at the Facility real time performance data.	Added: "(or via equipment utilized to communicate with the Company's SCADA interface if SCADA is not required)"	• Addresses Tier 1 projects that will not have the same SCADA interface as the larger projects as SCADA is not required for projects <250 kW per Rule 14H.
Article 6.7 Reports, Studies and Assessment Required to be provided by Seller to Company	Added qualifier "if available"	• Such reports may not exist for smaller projects
Article 12.3, 29.20 Sets for terms regarding PUC Approval.	These section have been removed and instead it is noted that the PPA will be preapproved by the PUC.	• As noted above, the Companies have requested that the PPA for Tiers 1 and 2 be proved approved, similar to the Companies FIT program, to expedite project development.
Article 14.3 Return of Development Period Security if PUC approval is not obtained.	Removed	• Because the Tier 1 and 2 PPAs will be pre-approved this section is not required.

CBRE Large Model PPA	CBRE Small Model PPA	Rationale
Attachment B: Curtailment control – SCADA required	Same language applicable for all Tiers. Tier 2 – SCADA required Tier 1 – required to be remotely disconnected / reconnected by utility	• All projects will be required to have controls to enable curtailment to ensure reliability and safety (Tariff section G.1) • Alignment with Rule 14H SCADA thresholds which do not require the use of SCADA for projects <250 kW.
Attachment G: Sec. 7.b – Environmental Assessment – required	Change to "If requested by Company"	
Attachment K Guaranteed Project Milestones	Add milestones for: Purchase Order(s) from suppliers for equipment at 30 days after PPA execution, and photographic proof of development at 3, 6, and 9 months	Added milestones to be consistent with those identified in Transmittal Filing
Attachment Q CBRE Allocated Portion – 29% with Company option to increase up to 75%	CBRE Allocated Portion – 75%	• 29% is driven by the 10MW CBRE allocation within the 35MW PV RFP • Per the Transmittal Filing all Tier 1 and Tier 2 projects are obligated to allocate 75% of the project for CBRE

ATTACHMENT 4
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Upfront Costs

	2016	2017	2018	2019	Total Upfront Costs
SAP IT Billing System Investment	$2,473,000				**$2,473,000**
Bill Credit Processing Software	$625,000				**$625,000**
Enrollment Software	$262,500	$344,250	$1,066,410	$949,781	**$2,622,941**
Total	**$3,360,500**	**$344,250**	**$1,066,410**	**$949,781**	**$5,720,941**

Ongoing Costs

	2016	2017	2018	2019	2020	2021	2022
Bill Credit Processing Software		$16,065	$37,454	$103,468	$172,107	$175,549	$179,060
Enrollment Software		$13,388	$31,212	$86,223	$136,386	$139,114	$141,896
CBRE PPA Administration		$134,000	$136,680	$139,414	$142,202	$145,046	$147,947
Total	**$0**	**$163,453**	**$205,346**	**$329,105**	**$450,695**	**$459,709**	**$468,903**

	2023	2024	2025	2026	2027	2028	2029
Bill Credit Processing Software	$182,641	$186,294	$190,020	$193,820	$197,697	$201,650	$205,683
Enrollment Software	$144,734	$147,629	$150,582	$153,593	$156,665	$159,798	$162,994
CBRE PPA Administration	$150,906	$153,924	$157,002	$160,142	$163,345	$166,612	$169,944
Total	**$478,281**	**$487,847**	**$497,604**	**$507,556**	**$517,707**	**$528,061**	**$538,622**

	2030	2031	2032	2033	2034	2035	2036
Bill Credit Processing Software	$209,797	$213,993	$218,273	$222,638	$227,091	$231,633	$236,266
Enrollment Software	$166,254	$169,579	$172,971	$176,430	$179,959	$183,558	$187,229
CBRE PPA Administration	$173,343	$176,810	$180,346	$183,953	$187,632	$191,385	$195,213
Total	**$549,395**	**$560,383**	**$571,590**	**$583,022**	**$594,683**	**$606,576**	**$618,708**

	2037	2038	2039
Bill Credit Processing Software	$217,119	$190,155	$96,979
Enrollment Software	$175,059	$157,690	$80,816
CBRE PPA Administration	$199,117	$203,099	$207,161
Total	**$591,296**	**$550,945**	**$384,957**

EXHIBIT A

Revised Community Based Renewable Energy Tariff.

Clean Version

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COMMUNITY-BASED RENEWABLE ENERGY PROGRAM
PHASE 1

A. AVAILABILITY

1. Phase 1 of the Community-Based Renewable Energy Program ("CBRE Program") will commence on the date of Commission approval of the Phase 1 CBRE Program structure.

2. The CBRE Program will be available to all customer types including residential and commercial customers.

3. Service under the CBRE Program is available to customers who have a current electricity account with the Company and have received service at the same location for which they are requesting participation for at least 12 months at the time of enrollment and who have not received any disconnection notifications at that same location within the last 12 months.

4. Residential consumer customers are eligible if their principal place of residence is located in the State of Hawai'i.

5. Commercial customers are eligible if their principal place of business is located in the State of Hawai'i, and they are organized or incorporated under the laws of the State of Hawai'i. For any partnership or a limited liability company, each partner of such partnership, or each member and each manager of such limited liability company shall maintain his or her principal place of residence within the State of Hawai'i.

6. Entities formed by residential and/or commercial customers for the specific purpose of enrolling in the CBRE Program shall be eligible if they are organized or incorporated under the laws of the State of Hawai'i and such entities' beneficial owners all have their principal place of residence located in the State of Hawai'i. Such entity shall satisfy the historical account service requirements of Section A.3 above so long as one of the beneficial owners of such entity satisfies such requirements with respect to the designated service address for the entity.

7. Residential and commercial customers must maintain, for the duration of their participation in the CBRE program, (a) their principal place of residence or business in the State of Hawai'i and (b) an electricity account and service address on the same island as the CBRE facility which they are participating in.

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B. CUSTOMER PARTICIPATION

1. CBRE Program Participants ("Participants") will be allowed to purchase an interest in the energy output of any eligible renewable energy facility ("Facility") on the same island as their service address that is allocated CBRE Program capacity to offset their energy consumption.

2. The CBRE Program Participant will be required to enter into an appropriate CBRE Program Participation agreement (either the CBRE Program Model Participant Contract or a Developer-drafted Program Participation agreement, each referred to as a "Participation Agreement") with the Facility developer ("Developer").

3. The Participant will obtain approval of eligibility, confirm buy-in level and enroll into the CBRE Program through an online enrollment tool. The online enrollment tool will perform these tasks automatically but final approval of the Participant into a Developer's project will rest with such Developer. Only upon the Developer's approval of a Participant will the Participation Agreement be transmitted to the Participant for signature. The Participant's upfront payment will be calculated based on the Participant's portion of the total renewable energy output of the CBRE Program Facility and the Participant's Commencement Date as specified in the Participant Agreement.

4. The Participant will sign the Participation Agreement with the Developer for their interest in the output of the Facility. The customer's upfront payment, and the ongoing Operations and Maintenance ("O&M") fee per kWh, shall be specified in the Participation Agreement. Participants will be purchasing an interest in the output of energy from the Facility rather than an ownership interest in the Facility. Ownership of the Facility will remain with the Developer throughout the Facility's asset life. Participant upfront payments are paid only after the Facility is operational. The Participant will pay the upfront payment for their program interest directly to the Developer.

5. The Participant's effective kW AC (alternating current) interest in the facility will be calculated based on the Participant's portion of the renewable energy output of the CBRE Program Facility multiplied by the total capacity of the facility in kW AC.

6. Participants will be able to purchase a CBRE Program interest with an expected production of less than or equal to 100 percent of their historic energy consumption for the previous twelve months.

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7. To ensure fair access to the CBRE Program, an additional limit will be applied such that no single Participant will be able to purchase more than 20 percent of the total output of any one Facility.

8. Participants must purchase an interest in the CBRE Program Facility expected to offset a minimum of 25 percent of their historic energy consumption for the previous twelve months. The lower limit will not apply if 25 percent of the Participant's historic consumption is more than 20 percent of the CBRE Program Facility output, in which case the Participant may only purchase 20 percent of the CBRE Program Facility output.

9. Eligible customers will be allowed to buy into only one (1) CBRE Program Facility.

10. O&M fees will be deducted monthly from the Participant's electric bill. Hawaiian Electric Company, Inc. ("Hawaiian Electric") will then send all O&M fees to the Developer. The Developer's O&M fees must be paid into a dedicated trust fund and kept in escrow for Participants until they are required for CBRE Program Facility's operations and maintenance.

11. Participants will pay an initial non-refundable Program Cost Reimbursement Fee to the Developer within 30 days of the Effective Date of the Participation Agreement. The Program Cost Reimbursement Fee will be calculated based on the Participant's effective kW AC interest in the Program multiplied by $65 per kW AC excluding General Excise Tax if applicable. The Program Cost Reimbursement Fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.

12. Participants will pay a monthly administration fee paid via the Participant's electric bill to Hawaiian Electric. The monthly administration fee will be calculated based on the Participant's effective kW AC interest in the Program multiplied by $1.92. The administration fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.

13. For purposes of billing and crediting under the CBRE Program, the enrollment tool will maintain a database of Participants in the CBRE Program and their interest in each Facility.

14. Nothing in the Participation Agreement shall be deemed to alter or modify any rate schedule, charge, or condition of service established from time to time by the Hawai'i Public Utilities Commission (the "Commission") for electric service provided by Hawaiian Electric. All

such rates and charges from the customer's applicable rate schedule shall apply and remain subject to change.

C. CREDIT RATE AND O&M FEES

1. The Credit Rate for Participants will vary by technology and tier. For Phase 1, for Tiers 1 and 2, solar CBRE Program Facilities will receive the Credit Rate of 13.475 cents per kWh. The Credit Rate for Tier 3 solar CBRE Program Facilities and all Tiers of wind CBRE Program Facilities will be set competitively through a competitive solicitation process initiated by Hawaiian Electric.

2. The O&M fees will be defined in cents per kWh and will vary by technology and tier. For Phase 1, for Tiers 1 and 2, solar CBRE Program Facilities will be charged an O&M fee of 1.14 cents per kWh in the first year. The O&M fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment. The O&M fees for Tier 3 solar CBRE Program Facilities and all Tiers of wind CBRE Program Facilities will be set competitively through a competitive solicitation process initiated by Hawaiian Electric.

3. The monthly credit for each Participant will be equal to the Participant's interest in the energy output of the Facility, multiplied by the Facility's actual energy output multiplied by the appropriate credit rate per kWh.

4. The credit rate will be fixed for the term of the Participant Agreement which for Phase 1 will be the Facility life or 20 years whichever comes first.

5. The monthly O&M fee for each Participant will be equal to the Participant's interest in the energy output of the Facility, multiplied by the Facility's actual energy output multiplied by the O&M fee per kWh.

6. Participants will continue to be charged the applicable rate schedule rates for their electricity consumption. The Participant's monthly net credit shall be defined as the monthly credit less the monthly O&M fee.

7. A Participant's monthly net credit shall be applied to offset eligible charges on their electric bill. Eligible charges on the Participant's electric bill will be all light and power charges. The Participant's electric bill cannot be reduced below the sum of the minimum charge, the Green Infrastructure Fee, and any other per-customer charge for the customer's applicable rate schedule.

8. If the Participant's monthly net credit exceeds the eligible charges then this excess amount is surplus credit. Surplus credit will not be carried forward and will be forfeited by the Participant.

D. DEVELOPER PARTICIPATION

1. A CBRE Program Facility may be developed by a Developer.

2. Prior to developing a project, Developer shall submit the following to Hawaiian Electric:

   a. A Developer Enrollment Fee: $52/kW AC for the installed capacity made available for CBRE. The Developer Enrollment Fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.
   b. Demonstration of Site Control. Site Control shall be deemed to be a property interest in the land upon which the Developer's Facility shall be located sufficient to permit Developer to develop, construct and operate the Facility for the length of the term of the Developer's project. Except with the written consent of the Company each physical address (defined as a single residential address or a single tax map key if a commercial or industrial facility) may not have more than one Facility of the same technology type contracted under this CBRE Program.
   c. A Certificate of Good Standing from the State of Hawai'i Department of Commerce and Consumer Affairs.
   d. For those Facilities less than 1MW in size, an approved building permit.
   e. Proof of incorporation/formation in the State of Hawai'i.
   f. Proof that Developer's principal place of business is located in the State of Hawai'i.
   g. Any other requirements imposed by Hawaiian Electric on the Developer in the power purchase agreement to be executed by Hawaiian Electric and Developer or imposed through a request for proposals.

3. The fair market price for the upfront payment per kW AC at the commercial operation date of the facility, ongoing O&M fee per kWh, and purchased energy payment rate for each Tier 3 project for each technology and for Tier 1 and Tier 2 CBRE Program wind projects will be determined through a competitive solicitation process initiated by Hawaiian Electric. The credit rate applied to Participant's electric bills will be equal to the purchased energy payment rate for the Developer for the portion which is not subscribed by Participants.

4. For Phase 1 Tier 1 and Tier 2 CBRE Program solar projects, the Participant upfront payment will be at $2,005/kW AC at the commercial operation date of the facility, the ongoing

payment for O&M fees will be 1.14 cents per kWh in the first year and the purchased energy rate for unsubscribed energy and the credit rate for subscribed energy will be 13.475 cents per kWh.

5. Participants that develop their own CBRE Program Facility may make an application to develop their own fully subscribed Tier 1 CBRE Program Facility. In addition to the requirements set out in Section D.2, Participants that apply to develop their own CBRE Program Facility must submit the following to Hawaiian Electric:

    a. List of Participants, including their respective Hawaiian Electric customer account numbers, service address numbers and proposed interests in the output of the Facility. The sum of the participant's proposed interests must equal 100% of the output of the facility.
    b. Incorporation documents, including a list of owners that matches that list of Participants.
    c. Written confirmation that all participants are residents of the State of Hawai'i.

    Hawaiian Electric will confirm that the list of Participants hold a Hawaiian Electric Account and the Participant's 12 month historic usage. If any Participants are not Hawaiian Electric account holders or are not purchasing an interest within the allowed limits set out in Section B then the application will not be accepted.

8. Applications for Phase 1 Tier 1 and Tier 2 CBRE Program solar projects will be conditionally accepted subject to verification of the requirements in section D.2, section D.5 if applicable and the review for completeness as set forth in Rule 14H[1] , if proposing to interconnect at the distribution level. Upon successfully meeting the CBRE requirements and the Rule 14H completeness review, if applicable, the project will be accepted into Phase 1 of the CBRE program. Project selection will continue until the capacity allocation for Tier 1 and Tier 2 solar projects on each island is fully allocated or until December 31, 2016, whichever occurs first. If a project drops out after selection for inclusion in Tier 1 and Tier 2 the allocation for such project will not be refilled.

9. The upfront payment, the O&M fees and the credit rate will be required to be the same for all projects within each tier for each technology and island.

E. PROGRAM TIERS

[1] Rule 14H Interconnection of Distributed Generating Facilities with the Company's Distribution System, Appendix III Step

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There will be three CBRE Program Tiers applicable to both wind and solar resources on each island.

Tier	CBRE Program Project Size
Tier 1	≤250kW AC
Tier 2	>250kW to ≤1MW AC
Tier 3	> 1MW AC

F. CAPACITY ALLOCATION

1. There will be capacity limits for Phase 1 of the CBRE Program by technology and island.

	Solar (MW AC)		Wind (MW AC)	
	Tier 1 and 2 ≤1MW	**Tier 3 >1MW**	**Tier 1 and 2 ≤1MW**	**Tier 3 >1MW**
Oahu	5	10[2]	0	10
Hawaii Island	1	0	0	2
Maui	1	0	0	2
Molokai	0	0	0.5[3]	0
Lanai	0	0	0.5[4]	0
Total	7	10	1	14
Phase 1 Total		32 MW		

Table 2 - CBRE Program Capacity Allocation

[2] CBRE Program allocation within a 35MW AC RFP (Request for Proposal)
[3] Wind projects on Lanai and Molokai are limited to 100 kW consistent with the Decision and Order on General Principles issued September 25, 2009 in Docket No. 2008-0273 Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs.
[4] Id.

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G. CURTAILMENT

1. All projects will be required to have controls to enable curtailment to ensure system reliability and safety.

2. Projects larger than 250kW will be required to have supervisory control.

3. Projects smaller than or equal to 250kW will be required to be able to be remotely disconnected/reconnected by receiving a remote command directly from the utility or its agent(s).

4. All communications systems will require Hawaiian Electric approval.

5. All projects in Phase 1 of the CBRE Program will be curtailed as part of a curtailment block to the extent practicable and feasible.

6. Curtailment will be the Developer's risk and information about the forecast curtailment levels and supporting assumptions will be made available to Developers to assess the curtailment risk.

H. INTERCONNECTION

1. All Facilities shall be designed to interconnect and operate in parallel with the Company's system without adversely affecting the operations of its customers and without presenting safety hazards to the Company's or other customers' personnel. The Facilities and the interconnection systems must be in compliance with all applicable safety and performance standards of the National Electric Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), the Company's interconnection standards and procedures provided in Rule 14, Section H, and Rule 19, as amended from time to time, and also subject to any other requirements as may be specified in the CBRE Large Model PPA or Small Model PPA.

2. Facilities interconnected at the Distribution Level[5] that are selected will follow the applicable Rule 14H interconnection process at the time of interconnection.

[5] Distribution system (level) is defined as interconnection to electrical wires, equipment, and other facilities at the distribution voltage levels (such as 25kV(Hawaiian Electric only), 12kV, or 4kV) owned or provided by the utility, through which the utility provides electrical service to its customers.

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3. Facilities interconnecting at the Sub-Transmission and Transmission levels will follow the interconnection process applicable to their Facilities at the time of interconnection.

4. Each CBRE Facility will have one interconnection point and suitable metering equipment to measure the energy output of the CBRE Facility.

5. To ensure that projects are actively moving towards completion, any project that does not adequately respond within 15 business days to Hawaiian Electric's requests for information or action may be removed from the CBRE Program.

I. CBRE PROGRAM FACILITY DEVELOPER AGREEMENTS

1. Successful Developers must also sign a power purchase agreement with Hawaiian Electric.

2. There will be a single standard form power purchase agreement for Tier 1 and Tier 2 ("Small Model PPA") and a separate form power purchase agreement for Tier 3 ("Large Model PPA") under which certain provisions will be standard.

Developers must pay, on a quarterly basis, the Program Cost Reimbursement Fee of $65 per kW AC recovered from Participants to Hawaiian Electric within 15 days of the end of each quarter.

3. Developers must meet certain milestones to ensure CBRE Facilities are built within a specific number of months.

4. Developers are responsible for their own operation and maintenance of the Facility to ensure the Facility meets agreed performance warranties.

5. Electric energy delivered to the Developer by the Company shall be billed under the Company's applicable rate schedule. Electric energy delivered to the Developer by the Company will be metered separately from the electric energy delivered by the Seller to the Company, either by use of multiple meters or a meter capable of separately recording the inflow and outflow of electricity.

J. PROGRAM TRANSFERS

1. If a Participant wants to transfer their interest to another customer, the Developer will confirm that customer's eligibility (with respect to account status and buy-in level). The Participant may not sell less than 50% of their interest in the energy output of the Facility to another Participant. If the Participant is not selling their entire interest they

must retain an interest expected to offset a minimum of 25 percent of their historic energy consumption for the previous twelve months. Any payment for the transfer must be in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participation Agreement. Upon completion of the transfer between the Participant, the new Participant and the Developer, the new Participant will notify the utility of the transfer and the Company will confirm such transfer in the CBRE Program Participant database which will be updated by the Developer. Participants cannot transfer their interest within 12 months of the Participant's Commencement Date as specified in the Participation Agreement.

2. To the extent that a Participant may want to sell their interest back to the Developer, Developer must include in the Participation Agreement a right for Participant to sell their interest back to Developer in the limited circumstances where Customer no longer has an account with Hawaiian Electric or is no longer a resident of the State of Hawai'i. The Developer must buy back the interest in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement within 30 days of the Participant's request. If a Participant exercises a buy-out option from the Developer, it will not be able to purchase an interest in any other CBRE Program Facility for a period of one (1) year.

3. In the event that a Participant's principal place of residence or principal place of business is no longer the State of Hawai'i then the Participant's interest in the output of the Facility is deemed to immediately revert back to the Developer at the time Participant loses its resident/principal place of business status. The Participant must contact Developer for payment of the reverted interest. Developer must pay Participant within 30 days of Participant's request in accordance with the present repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement minus the value of any credits Participant received between the time the interest reverted back to Developer and when Hawaiian Electric was notified to stop providing credits to Participant. The date for purposes of determining the price per the schedule shall be the date the Participant lost its residency status in the State of Hawai'i.

4. The Developer must notify Hawaiian Electric that the Participant has sold their interest.

EXHIBIT A-1

Revised Community Based Renewable Energy Tariff.

Blacklined Version

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COMMUNITY-BASED RENEWABLE ENERGY PROGRAM
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~~COMMUNITY-BASED RENEWABLE ENERGY PROGRAM~~
~~PHASE 1~~

A. AVAILABILITY

1. Phase 1 of the Community-Based Renewable Energy Program ("CBRE Program") will commence on the date of Commission approval of the Phase 1 CBRE Program structure.

2. The CBRE Program will be available to all customer types including residential and commercial customers.

3. Service under the CBRE Program is available to customers who have a current electricity account with the Company and have received service at ~~their~~the same location for which they are requesting participation for at least 12 months at the time of enrollment and who have not received any disconnection notifications at that same location within the last 12 months.

4. Residential consumer customers are eligible if their principal place of residence is located ~~on O'ahu,~~in the State of Hawai'i.

5. Commercial customers are eligible if their principal place of business is located in the State of Hawai'i, and they are organized or incorporated under the laws of the State of Hawai'i. For any partnership or a limited liability company, each partner of such partnership, or each member and each manager of such limited liability company shall maintain his or her principal place of residence within the State of Hawai'i.

6. ~~Special purpose entities~~Entities formed by residential and/or commercial customers for the specific purpose of enrolling in the CBRE Program shall be eligible if ~~(a) their principal place of business is located in Hawai'i and~~ they are organized or incorporated under the laws of the State of Hawai'i~~,~~ and ~~(2)~~ such ~~entity's~~entities' beneficial owners all have their principal place of residence located ~~on O'ahu,~~in the State of Hawai'i. Such entity shall satisfy the historical account service requirements of Section A.3 above so long as one of the beneficial owners of such entity satisfies such requirements with respect to the designated service address for the entity.

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7. Residential and commercial customers must maintain, for the duration of their participation in the CBRE program, (a) their principal place of residence or business in the State of Hawai'i~~.~~ and (b) an electricity account and service address on the same island as the CBRE facility which they are participating in.

~~6.~~

B. CUSTOMER PARTICIPATION

1. CBRE Program Participants ("Participants") will be allowed to purchase an interest in the energy output of any eligible renewable energy facility ("Facility") on the same island as their service address that is allocated CBRE Program capacity to offset their energy consumption.

~~2.~~ The CBRE Program Participant will be required to enter into an appropriate CBRE Program Participation agreement (either the CBRE Program Model Participant Contract or ~~approved~~a Developer-drafted Program Participation agreement, each referred to as a "Participation ~~agreement~~Agreement") with the Facility developer ("Developer").

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~~3.~~2. ~~The Participant will sign the Participation~~ agreement with the Developer for their interest in the output of the Facility. The customer's upfront payment, and the ongoing Operations and Maintenance ("O&M") fee per kWh, shall be specified in the Participation agreement. Participants will be purchasing an interest in the output of energy from the Facility rather than an ownership interest in the Facility. Ownership of the Facility will remain with the Developer throughout the Facility's asset life. Participant upfront payments are paid only after the Facility is operational.

3. The Participant will obtain approval of eligibility, confirm buy-in level and enroll into the CBRE Program through an online enrollment tool. The online enrollment tool will perform these tasks automatically but final approval of the Participant into a Developer's project will rest with such Developer. Only upon the Developer's approval of a Participant will the Participation ~~agreement~~Agreement be transmitted to the Participant for signature. The Participant's upfront payment will be calculated based on the Participant's portion of the total renewable energy output of the CBRE Program Facility and the Participant's Commencement Date as specified in the Participant Agreement.

4. The Participant will sign the Participation Agreement with the Developer for their interest in the output of the Facility. The customer's upfront payment, and the ongoing Operations and Maintenance ("O&M") fee per kWh, shall be specified in the Participation Agreement. Participants will be purchasing an interest in the output of energy from the Facility rather than an ownership interest in the Facility. Ownership of the Facility will remain with the Developer throughout the Facility's asset life. Participant upfront payments are paid only after the Facility is operational. The Participant will pay the upfront payment for their program interest directly to the Developer.

5. The Participant's effective kW AC (alternating current) interest in the facility will be calculated based on the Participant's portion of the renewable energy output of the CBRE Program Facility multiplied by the total capacity of the facility in kW AC.

6. Participants will be able to purchase a CBRE Program interest with an expected production of less than or equal to 100 percent of their historic energy consumption for the previous twelve months.

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7. To ensure fair access to the CBRE Program, an additional limit will be applied such that no single Participant will be able to purchase more than 20 percent of the total output of any one Facility.

8. Participants must purchase an interest in the CBRE Program Facility expected to offset a minimum of 25 percent of their historic energy consumption for the previous twelve months. The lower limit will not apply if 25 percent of the ~~customer's~~Participant's historic consumption is more than ~~10~~20 percent of the CBRE Program Facility output, in which case the Participant may only purchase 20 percent of the CBRE Program Facility output.

~~9. To the extent it is not otherwise determined to be cost-prohibitive, eligible~~Eligible customers will be allowed to buy into ~~up to four (4) renewable energy Facilities.~~

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9. ~~PHASE~~ only one (1) CBRE Program Facility.
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10. O&M~~"~~ fees ~~per kWh~~ will be deducted monthly from the Participant's ~~monthly~~electric bill ~~credit~~. Hawaiian Electric Company, Inc. ("Hawaiian Electric") will then send all O&M fees ~~deducted from the Participant's monthly bill~~ to the Developer. The Developer's O&M fees must be paid into a dedicated trust fund and kept in escrow for Participants until they are required for CBRE Program Facility's operations and maintenance.

11. Participants will pay an initial non-refundable ~~enrollment fee to Hawaiian Electric at~~ Program Cost Reimbursement Fee to the ~~time~~Developer within 30 days of ~~enrollment and a monthly administration fee paid via the Participant's bill.~~ the Effective Date of the Participation Agreement. The ~~enrollment fee~~Program Cost Reimbursement Fee will be calculated based on the Participant's effective kW AC interest in the Program multiplied by $~~66~~65 per kW AC~~.~~ excluding General Excise Tax if applicable. The Program Cost Reimbursement Fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.

~~11.~~12. Participants will pay a monthly administration fee paid via the Participant's electric bill to Hawaiian Electric. The monthly administration fee will be calculated based on the Participant's effective kW AC interest in the Program multiplied by $1.~~17~~92. The administration fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.

~~12.~~13. For purposes of billing and crediting under the CBRE Program, ~~Hawaiian Electric~~the enrollment tool will maintain a database of Participants in the CBRE Program and their interest in each Facility.

~~13.~~14. Nothing in the Participation ~~agreement~~Agreement shall be deemed to alter or modify any rate schedule, charge, or condition of service established from time to time by the Hawai'i Public Utilities Commission (the "Commission") for electric service provided by Hawaiian Electric. All such rates and charges from the customer's applicable rate schedule shall apply and remain subject to change.

C. CREDIT RATE AND O&M FEES

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1. The Credit Rate for Participants will vary by technology and tier. For Phase 1, for Tiers 1 and 2, solar CBRE Program Facilities will receive the Credit Rate of 13.475 cents per kWh. The Credit Rate for Tier 3 solar CBRE Program Facilities and all Tiers of wind CBRE Program Facilities will be set competitively through a competitive solicitation process initiated by Hawaiian Electric.

2. The O&M fees will be defined in cents per kWh and will vary by technology and tier. For Phase 1, for Tiers 1 and 2, solar CBRE Program Facilities will be charged an O&M fee of 1.~~11~~14 cents per kWh in the first year. The O&M fee will be escalated at 2% per year for inflation~~.~~ commencing 12 months after the first CBRE Program Facility is available for enrollment. The O&M fees for Tier 3 solar CBRE Program Facilities and all Tiers of wind CBRE Program Facilities will be set competitively through a competitive solicitation process initiated by Hawaiian Electric.

3. The monthly ~~energy~~ credit for each Participant will be equal to the Participant's interest in the energy output of the Facility, multiplied by the Facility's actual energy output multiplied by the ~~credited~~appropriate credit rate per kWh.

The credit rate will be fixed for the term of the

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4. Participant Agreement which for Phase 1 will be the Facility life or 20 years whichever comes first.

~~4.~~5. The monthly O&M fee for each Participant will be equal to the Participant's interest in the energy output of the Facility, multiplied by the Facility's actual energy output multiplied by the O&M fee per kWh. ~~The monthly O&M fee will be deducted from the monthly energy credit.~~

~~5.~~6. Participants will continue to be charged the ~~normal retail~~applicable rate schedule rates for their electricity consumption ~~and the~~. The Participant's monthly ~~energy~~net credit shall be defined as the monthly credit less the ~~Participant's~~ monthly O&M ~~fees will be applied to the eligible charges on their energy bill~~fee.

~~6. The credit rate will be fixed for the term of the contract which for Phase 1 will be the Facility life or 20 years whichever comes first.~~

7. A Participant's ~~credits can only~~monthly net credit shall be ~~used~~applied to offset eligible charges on their ~~energy~~electric bill. Eligible charges on the Participant's electric bill will be all light and power charges. ~~Light and power charges~~The Participant's electric bill cannot be reduced below the sum of the minimum charge, the Green Infrastructure Fee, and any other per-customer charge for the customer's applicable rate schedule.

~~8. If the Participant's credits exceed the eligible charges then this excess is surplus credits. Surplus credits that arise during a given 12-month period may be carried forward to be applied against future Eligible Charges during that same 12-month period. If there are unused surplus credits that remain at the end of such 12-month period, Hawaiian Electric will calculate the amount (if any) by which the total of all the Eligible Charges during the 12-month period exceed the total of the customer's credits that were applied during such 12-month period, which is the Eligible Excess for such 12-month period. If the total of the Eligible Excess for such 12-month period is equal to or greater than the unused surplus credits, then the full amount of the unused surplus credits will be applied to the customer's account. If, however, the Eligible Excess for such 12-month period is less than the unused surplus credits, the customer's account will be credited for an amount equal to the Eligible Excess. The remaining portion of the unused surplus credits shall be forfeited.~~

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8. If the Participant's monthly net credit exceeds the eligible charges then this excess amount is surplus credit. Surplus credit will not be carried forward and will be forfeited by the Participant.

D. DEVELOPER PARTICIPATION

1. A CBRE Program Facility may be developed by a Developer.

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2. Prior to developing a project, Developer shall submit the following to Hawaiian Electric:

   a. A Developer Enrollment Fee: ~~$66~~$52/kW AC for the installed capacity made available for CBRE. The Developer Enrollment Fee will be escalated at 2% per year for inflation commencing 12 months after the first CBRE Program Facility is available for enrollment.
   ~~b. Demonstration of Site Control~~
   b. Demonstration of Site Control. Site Control shall be deemed to be a property interest in the land upon which the Developer's Facility shall be located sufficient to permit Developer to develop, construct and operate the Facility for the length of the term of the Developer's project. Except with the written consent of the Company each physical address (defined as a single residential address or a single tax map key if a commercial or industrial facility) may not have more than one Facility of the same technology type contracted under this CBRE Program.
   c. A Certificate of Good Standing from the State of Hawai'i Department of Commerce and Consumer Affairs.
   d. For those Facilities less than 1MW in size, an approved building permit.
   e. Proof of incorporation/formation in the State of ~~Hawaii~~Hawai'i.
   f. Proof that Developer's principal place of business is located in the State of ~~Hawaii~~Hawai'i.
   g. Any other requirements imposed by Hawaiian Electric on the Developer in the power purchase agreement to be executed by Hawaiian Electric and Developer or imposed through a request for proposals.

3. The fair market price for the upfront payment per kW AC at the commercial operation date of the facility, ongoing ~~payment~~O&M fee per kWh, and purchased energy payment rate for each Tier 3 project for each technology and for Tier 1 and Tier 2 CBRE Program wind projects will be determined through a competitive solicitation process initiated by Hawaiian Electric. -The credit rate applied to Participant's electric bills will be equal to the purchased energy payment rate for the Developer for the portion which is not subscribed by Participants.

4. For Phase 1 Tier 1 and Tier 2 CBRE Program solar projects, the Participant upfront payment will be at $2,005/kW AC at the commercial operation date of the facility, the ongoing

payment for O&M fees will be 1.14 cents per kWh in the first year and the purchased energy rate for unsubscribed energy and the credit rate for subscribed energy will be 13.475 cents per kWh.

5. Participants that develop their own CBRE Program Facility may make an application to develop their own fully subscribed Tier 1 CBRE Program Facility. In addition to the requirements set out in Section D.2, Participants that apply to develop their own CBRE Program Facility must submit the following to Hawaiian Electric:

   a. List of Participants, including their respective Hawaiian Electric customer account numbers, service address numbers and proposed interests in the output of the Facility. The sum of the participant's proposed interests must equal 100% of the output of the facility.
   b. Incorporation documents, including a list of owners that matches that list of Participants.
   c. Written confirmation that all participants are residents of the State of Hawai'i.

   Hawaiian Electric will confirm that the list of Participants hold a Hawaiian Electric Account and the Participant's 12 month historic usage. If any Participants are not Hawaiian Electric account holders or are not purchasing an interest within the allowed limits set out in Section B then the application will not be accepted.

~~4.~~8. Applications for Phase 1 Tier 1 and Tier 2 CBRE Program solar projects will be conditionally accepted subject to verification of the requirements in section D.2, section D.5 if applicable and the review for completeness as set forth in Rule 14H[1] , if proposing to interconnect at the distribution level. Upon successfully meeting the CBRE requirements and the Rule 14H completeness review, if applicable, the project will be accepted into Phase 1 of the CBRE program. Project selection will continue until the capacity allocation for Tier 1 and Tier 2 solar projects on each island is fully allocated or until December 31, 2016, whichever occurs first. If a project drops out after selection for inclusion in Tier 1 and Tier 2 the allocation for such project will not be refilled.

~~5.~~9. The upfront payment, ~~ongoing payment~~the O&M fees and the credit rate will be required to be the same for all projects within each tier for each technology and island.

E. PROGRAM TIERS

[1] Rule 14H Interconnection of Distributed Generating Facilities with the Company's Distribution System, Appendix III Step

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There will be three CBRE Program Tiers applicable to both wind and solar resources on each island.

Tier	CBRE Program Project Size
Tier 1	≤250kW AC
Tier 2	>250kW to ≤1MW AC
Tier 3	≥ 1MW AC

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F. CAPACITY ALLOCATION

1. There will be capacity limits for Phase 1 of the CBRE Program by technology and island.

	Solar (MW AC)		Wind (MW AC)	
	Tier 1 and 2 ≤1MW	**Tier 3 ≥1MW**	**Tier 1 and 2 ≤1MW**	**Tier 3 ≥1MW**
Oahu	5	10[2]	0	10
Hawaii Island	1	0	0	2
Maui	1	0	0	2
Molokai	0	0	0.5[3]	0
Lanai	0	0	0.5[4]	0
Total	7	10	1	14
Phase 1 Total		32 MW		

Table 2 - CBRE Program Capacity Allocation

[2] CBRE Program allocation within a 35MW AC RFP (Request for Proposal)
[3] Wind projects on Lanai and Molokai are limited to ~~100kW as per~~100 kW consistent with the Decision and Order on General Principles issued September 25, 2009 in Docket No. 2008-0273~~.~~ Instituting a Proceeding to Investigate the Implementation of Feed-in Tariffs.
[4] Id.

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G. CURTAILMENT

1. All projects will be required to have controls to enable curtailment to ensure system reliability and safety.

2. Projects larger than 250kW will be required to have supervisory control.

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3. Projects smaller than or equal to 250kW will be required to be able to be remotely disconnected/reconnected by receiving a remote command directly from the utility or its agent(s).

4. All communications systems will require Hawaiian Electric approval.

5. All projects in Phase 1 of the CBRE Program will be curtailed as part of a curtailment block to the extent practicable and feasible.

6. Curtailment will be the Developer's risk and information about the forecast curtailment levels and supporting assumptions will be made available to Developers to assess the curtailment risk.

H. INTERCONNECTION

1. All Facilities shall be designed to interconnect and operate in parallel with the Company's system without adversely affecting the operations of its customers and without presenting safety hazards to the Company's or other customers' personnel. The Facilities and the interconnection systems must be in compliance with all applicable safety and performance standards of the National Electric Code (NEC), the Institute of Electrical and Electronics Engineers (IEEE), the Company's interconnection standards and procedures provided in Rule 14, Section H, and Rule 19, as amended from time to time, and also subject to any other requirements as may be specified in the CBRE Large Model PPA or Small Model PPA.

~~1.~~2. Facilities interconnected at the Distribution Level[5] that are selected will follow the applicable Rule 14H interconnection process at the time of interconnection.

~~2.~~3. Facilities interconnecting at the Sub-Transmission and Transmission levels will follow the interconnection process applicable to their Facilities at the time of interconnection.

[5] Distribution system (level) is defined as interconnection to electrical wires, equipment, and other facilities at the distribution voltage levels (such as 25kV ~~HECO~~(Hawaiian Electric only.), 12kV, or 4kV) owned or provided by the utility, through which the utility provides electrical service to its customers.

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4. Each CBRE Facility will have one interconnection point and suitable metering equipment to measure the energy output of the CBRE Facility.

5. To ensure that projects are actively moving towards completion, any project that does not adequately respond within 15 business days to Hawaiian Electric's requests for information or action may be removed from the CBRE Program.

I. CBRE PROGRAM FACILITY DEVELOPER AGREEMENTS

1. Successful Developers must also sign a ~~Power Purchase~~power purchase agreement with ~~the Company~~Hawaiian Electric.

2. There will be a single standard form ~~Power Purchase~~power purchase agreement for Tier 1 and Tier 2 ("Small Model PPA") and a separate form ~~Power Purchase~~power purchase agreement for Tier 3 ("Large Model PPA") under which certain provisions will be standard.

Developers must pay, on a quarterly basis, the Program Cost Reimbursement Fee of $65 per kW AC recovered from Participants to Hawaiian Electric within 15 days of the end of each quarter.

3. Developers must meet certain milestones to ensure CBRE Facilities are built within a specific number of months.

4. Developers are responsible for their own operation and maintenance of the Facility to ensure the Facility meets agreed performance warranties.

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5. Electric energy delivered to the Developer by the Company shall be billed under the Company's applicable rate schedule. Electric energy delivered to the Developer by the Company will be metered separately from the electric energy delivered by the Seller to the Company, either by use of multiple meters or a meter capable of separately recording the inflow and outflow of electricity.

J. PROGRAM TRANSFERS

1. If a Participant wants to transfer their interest to another customer, the ~~utility~~Developer will confirm that customer's eligibility (with respect to account status and buy-in level). The Participant may not sell less than 50% of their interest in the energy output of the Facility to another Participant. If the Participant is not selling their entire interest they must retain an interest expected to offset a minimum of 25 percent of their historic energy consumption for the previous twelve months. Any payment for the transfer must be in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participation Agreement. Upon completion of the transfer between the Participant, the new Participant and the Developer, the ~~utility~~new Participant will ~~note the~~ notify the utility of the transfer and the Company will confirm such transfer in the CBRE Program Participant database~~.~~ which will be updated by the Developer. Participants cannot transfer their interest within 12 months of ~~signing~~the Participant's Commencement Date as specified in the Participation ~~agreement~~Agreement.

2. To the extent that a Participant may want to sell their interest back to the Developer, Developer must include in the Participation ~~agreement~~Agreement a right for Participant to sell their interest back to Developer in the limited ~~circumstance that Customer no longer has an account with Hawaiian Electric~~circumstances where Customer no longer has an account with Hawaiian Electric or is no longer a resident of the State of Hawai'i. The Developer must buy back the interest in accordance with the preset repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement within 30 days of the Participant's request. If a Participant exercises a buy-out option from the Developer, it will not be able to purchase an interest in any other CBRE Program Facility for a period of one (1) year.

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3. In the event that a Participant's principal place of residence or principal place of business is no longer the State of Hawai'i then the Participant's interest in the output of the Facility is deemed to immediately revert back to the Developer at the time Participant loses its resident/principal place of business status. The Participant must contact Developer for payment of the reverted interest. Developer must pay Participant within 30 days of Participant's request in accordance with the present repurchase/resale price schedule based on a straight line depreciation method outlined in the Participant Agreement minus the value of any credits Participant received between the time the interest reverted back to Developer and when Hawaiian Electric was notified to stop providing credits to Participant. The date for purposes of determining the price per the schedule shall be the date the Participant lost its residency status in the State of Hawai'i.

~~3.~~4. The Developer must notify Hawaiian Electric that the Participant has sold their interest ~~so that the CBRE Program Participant database may be updated.~~.

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EXHIBIT B

Draft Request for Proposals for

Solar Project(s) up to 35 MW

DRAFT 11/30/15

HAWAIIAN ELECTRIC COMPANY

DRAFT REQUEST FOR PROPOSALS FOR

SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

JANUARY _____, 2016

This Request for Proposals ("RFP") is a DRAFT only. While Hawaiian Electric has requested a waiver from the Competitive Bidding Framework in order to accelerate the RFP process, Hawaiian Electric intends to employ a competitive bidding process to obtain additional capacity consistent with the Competitive Bidding Framework. As outlined in Tariff Transmittal 15-09 filed October 1, 2015, Hawaiian Electric will file the initial draft RFP with the State of Hawai'i Public Utilities Commission ("PUC"). Then, similar to the process employed in the Competitive Bidding Framework, Hawaiian Electric will obtain input from prospective Proposers and other stakeholders through a Technical Conference as described in the draft RFP and will modify the draft RFP according to the stakeholder input in order to foster a robust competitive process. The proposed final RFP will be submitted to the State of Hawai'i Public Utilities Commission for approval and is subject to further revision based upon direction received from the PUC. After approval by the PUC, Hawaiian Electric will issue the final RFP. The proposed schedule for the foregoing process is set forth in this draft RFP at Chart 1.

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Chapter 1

Introduction and General Information

1.1 Definitions

"Annual Contract Energy" has the meaning set forth in the Model PPA.

"ASC" means the FASB Accounting Standards Codification.

"BAFO Information" has the meaning set forth in Section 4.6.1.

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

"CBRE Software Tool" means the interface to be used to, among other things, enroll and track Customers in the CBRE Program through the Customer enrollment tool and to apply the amount of credits to be disbursed to CBRE Program Customers through the bill processing tool.

"Commercial Operations" has the meaning set forth in the Model PPA.

"Commercial Operations Date" means the date on which a Generator facility first achieves Commercial Operations.

"Company" means Hawaiian Electric Company, Inc.

"Company-Owned Interconnection Facilities" has the meaning set forth in the Model PPA.

"Competitive Bidding 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.

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

"Credit Rate" means the PPA rate.

"Customer" means the holder of a Hawaiian Electric account who has entered in to a Customer Agreement with a Developer.

"Customer Agreement" means the agreement between the Developer and the Customer, which is in the form of the Model Customer Agreement or another form of agreement provided in conformance with the procedure set forth in Section 2.7.

"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.

"Developer" has the meaning set forth in the Model Customer Agreement.

"Developer Enrollment Fee" means the non-refundable fee of $52/kW dedicated to CBRE that each Proposer chosen for the Short List is required to submit for each Proposal.

"Eligibility Requirements" has the meaning set forth in Section 4.2 herein.

"Facility" shall have the meaning set forth in the Model PPA.

"FASB" means Financial Accounting Standards Board.

"FASB ASC" means Financial Accounting Standards Board Accounting Standards Codification.

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

"Generator" means a generator of solar energy as contemplated in this RFP.

"Grid Connection Point" means the point at which Interconnection Facilities connect to the Hawaiian Electric System.

"Hawaiian Electric" means Hawaiian Electric Company, Inc.

"Hawaiian Electric 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.

"Interconnection Facilities" means the equipment and devices required to permit a Facility to operate in parallel with, and deliver electric energy to, the Hawaiian Electric System, such as, but not limited to, transmission lines, transformers, switches, and circuit breakers. Interconnection Facilities includes Company-Owned Interconnection Facilities and Seller-Owned Interconnection Facilities.

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

"Interconnection Requirements Study" or "IRS" means a study, performed in accordance with the terms of the IRS Letter Agreement and with the Model PPA (Article 4 - Company-Owned Interconnection Facilities and Attachment G - Company-Owned Interconnection Facilities), to assess, among other things, the projected interaction of the Facility with the Hawaiian Electric System.

"IRS Letter Agreement" means the letter agreement and any written, signed amendments thereto, between Hawaiian Electric and Proposer/Seller that describes the scope, schedule, and payment arrangements for the Interconnection Requirements Study, including the Company's costs to

develop the preliminary design and cost estimate for the Company-Owned Interconnection Facilities .

"kV" means kilovolt.

"kW" means kilowatt.

"kWh" means kilowatt hour.

"Land Rights" has the meaning set forth in the Model PPA.

"Model Customer Agreement" means the agreement attached as Appendix C to this RFP.

"Model PPA" means the Model Renewable Power Purchase Agreement attached as Appendix B to this RFP.

"MW" means megawatt.

"MWh" means megawatt hour.

"O&M" means operation and maintenance.

"O&M Fee" has the meaning set forth in the Model Customer Agreement.

"Operating Period Security" has the meaning set forth in the Model PPA, Section 14.4 (Operating Period Security).

"Performance Standards" means those standards of performance as required or desired by Hawaiian Electric, as described in Chapter 2 of this RFP and the Model PPA.

"Point of Interconnection" has the meaning ascribed to it in the Model PPA.

"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.

"PPA Rate" means the price for the purchase of energy as set forth in the PPA.

"Project" means a Project 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.

"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 hereto as Appendix A.

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

"RFP" means this Request for Proposals.

"RFP Schedule" means the schedule set forth in Chart 1 of this RFP.

"Self-Build Option" means a Proposal submitted by Hawaiian Electric that is responsive to the resource need identified in the RFP.

"Self-Build Team" means agents of Hawaiian Electric who are developing Self-Build Option proposals.

"Seller" has the meaning set forth in the Model PPA.

"Seller-Owned Interconnection Facilities" shall have the meaning set forth in the Model PPA.

"Short List" means the group of Proposals selected by Hawaiian Electric as set forth in Section 4.5.

"Site" means the real property on which a Project, or any portion thereof, is situated.

"Site Control" has the meaning set forth in Section 4.3 herein.

"Threshold Requirements" has the meaning set forth in Section 4.3 herein.

"Upfront Payment" has the meaning set forth in the Model Customer Agreement.

Any capitalized term not defined in this RFP shall have the definition as set forth in the Model PPA or the Model Customer Agreement.

1.2 Purpose of the Request for Proposals ("RFP")

1.2.1 Hawaiian Electric Company, Inc. ("Hawaiian Electric") seeks Proposals for the supply of greater than one (1) megawatt up to thirty-five (35) megawatts ("MW") of solar-generated capacity to be delivered to the Hawaiian Electric System on the Island of O'ahu in the State of Hawai'i, under contract terms to be negotiated between Hawaiian Electric and the Proposer.

1.2.2 The Renewable Portfolio Standards ("RPS") mandate that Hawaiian Electric generate or purchase certain amounts of its net electricity sales over time from qualified renewable energy resources. Those requirements are established at 30% by 2020, 40% by 2030, 75% by 2040, and 100% by 2045. See HRS §269-92. Under the RPS, supply-side resources that are qualified to meet RPS requirements include renewable energy generated or produced by solar power.

1.2.3 The primary purpose of this RFP is to obtain solar capacity to enable Hawaiian Electric to continue to transform O'ahu's power supply portfolio from oil-based generation to renewable-based generation in a manner that will continue to lower costs for all customers. The additional solar energy capacity will simultaneously provide an allocation

of that capacity for the implementation of Phase 1 of the Community-Based Renewable Energy ("CBRE") Program created pursuant to Act 100 (SLH 2015).

1.2.4 The primary objective of the CBRE Program is to give all Hawaiian Electric customers the opportunity to experience and derive benefit from cost-effective local solar development. Therefore, the Project must allocate a minimum of 29% of the Facility output for the CBRE Program. Furthermore, due to the unique needs of the CBRE Program, Proposers must meet certain criteria as set forth in Section 4.2 and Section 4.3.

1.2.5 The Projects to be awarded pursuant to this RFP will provide generation to be included in the CBRE Program Tier 3 for O'ahu, as described in further detail in Tariff Rule [XX], a copy of which is attached hereto as Appendix F. The Proposers who execute PPAs pursuant to this RFP will also interface with the enrollment tool and bill processing tool that enable the Customers to participate in the CBRE Program.

1.2.6 Through this RFP, Hawaiian Electric is soliciting solar generation capacity for a least-cost, best fit option to (1) continue to progress toward the RPS requirement of 100% renewable generation sources in 2045 and reduce Hawaii's dependence on oil, (2) reduce costs for all customers, and (3) increase options for Hawaiian Electric customers to participate in and benefit from solar generation.

1.2.7 Proposers shall submit a proposal for a Power Purchase Agreement ("PPA") at a Proposer-controlled Site. If the Company moves forward with its Self-Build Proposal, Proposers have the option of submitting a proposal for the West Loch Site or any potential Alterative Company Offered Sites as described in Section 2.8 below. Successful Proposers will own and operate the Facility and will be responsible for all costs including project development, completion of an Interconnection Requirement Study ("IRS"), land acquisition,[1] permitting, financing, construction of the solar facility and all Interconnection Facilities, and operations and maintenance. In addition, successful Proposers must be capable of interfacing with the enrollment tool and the bill processing tool being developed by Hawaiian Electric.

1.2.8 The CBRE Program is designed to allow eligible Customers the opportunity to receive the benefits of community-based renewable energy to offset[2] their personal monthly energy consumption by purchasing an interest in the energy production (kilowatt-hours or "kWh") from a renewable energy facility for a period of twenty years. This CBRE Program is an important initial step to increase consumer awareness of and access to the benefits of renewable energy for those who are not able to, or choose not to, install renewable energy resources on their own. Under the CBRE Program, Customers will have the option to purchase an interest in energy production of a Facility or Facilities at a level that is expected to offset up to 100 percent of their historic average kilowatt-hour energy consumption for the previous twelve months. Customers will be required to purchase an interest equal to at least 25% of their historic average kilowatt-hour energy

[1] See Section 2.8 regarding land acquisition for the West Loch Site.
[2] The amount that Customers will offset will depend on their percentage buy in level and their monthly energy consumption level and any monthly fees, such as O&M fees, owed.

consumption for the previous twelve months.[3] An additional limit will be imposed such that no single Customer will be able to purchase more than twenty percent of the total output of any single CBRE Program Facility.

1.2.9 In an effort to achieve simplicity for Customers, the upfront payment[4] per kW, credit rate per kWh, and O&M Fee per kWh will be required to be the same for all Projects awarded pursuant to this RFP.

1.2.10 Hawaiian Electric reserves the right to request any Proposer on the Short List to reduce its project size to fall within the capacity limit in order to allow that project to proceed.

1.3 Communications Between Hawaiian Electric and Proposers

1.3.1 All pre-Proposal contact with prospective Proposers and other interested parties will be via the Hawaiian Electric website, electronic bidding platform and email only, and email to Hawaiian Electric must be sent to the address specified in Section 1.4 below (the "RFP Email Address"). Prospective Proposers may submit written requests for additional information only via email to Hawaiian Electric at the RFP Email Address. Questions sent to any other email address will not receive a response. Frequently asked questions submitted by prospective Proposers and the answers to those questions may be posted on the Hawaiian Electric website or sent by email to persons who submit a Notice of Intent to Propose form ("NOI"). Hawaiian Electric reserves the right to only respond to comments and questions it deems are appropriate and relevant to the process, in its sole discretion.

1.3.2 Proposals shall be submitted electronically through the RFP Email Address. Alternatively, Hawaiian Electric may elect to use an electronic platform for Proposals to be submitted. If an electronic platform is utilized, detailed instructions will be included in the final RFP submitted to the PUC. No hard copies of the Proposals will be required or accepted.

1.3.3 After submission of Proposals, all contacts between Hawaiian Electric and Proposers will be coordinated by the Energy Contract Manager identified in Section 1.4. During this post-Proposal submission period, Hawaiian Electric may have communications and meetings with individual Proposers for purposes of clarifying Proposals. Similar meetings and communications may also be held with individual Proposers selected to the Short List as well as those Proposers that advance to the Final Award Group.

1.3.4 Each Proposer must execute a NOI and Confidentiality Agreement in the forms attached hereto as Appendix Q and Appendix G, respectively. Any information that is deemed confidential will be transmitted to the requesting party via the RFP email address and/or the electronic platform, if one is utilized, only after receipt of such fully executed Confidentiality Agreement. Confidential information will only be provided on a limited basis.

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[3] Subject to the additional limit of 20% of the total output of the CBRE Facility in which the Customer is participating.

[4] Developers may choose to provide finance options for the upfront payment such as leases.

1.3.5 Except as expressly permitted herein, any unsolicited contact by a Proposer or prospective Proposer with personnel of Hawaiian Electric or any Hawaiian Electric affiliate pertaining to this RFP is prohibited and may constitute grounds for disqualification.

1.3.6 Further information regarding communications and procedures governing this RFP can be found in the Procedures Manual attached hereto as Appendix J.

1.4 Hawaiian Electric Contact for Proposals

The Energy Contract Manager and primary contact for this RFP is:

Greg Shimokawa
Energy Contract Manager
Hawaiian Electric Company, Inc.
Central Pacific Plaza Building, 21st Floor
220 South King Street
Honolulu, Hawai'i 96813

RFP Email Address: cbrerfp@hawaiianelectric.com

1.5 Proposal Submittal Requirements

1.5.1 Detailed requirements regarding the form and organization of the Proposal are set forth in Chapter 3 of this RFP. Proposals shall be submitted in the form of the Proposer's Response Package attached hereto as Appendix A (Proposer's Response Package) pursuant to Chapter 3 of this RFP.

1.5.2 By submitting a Proposal in response to this RFP, each Proposer certifies that the Proposal has been submitted in good faith and without fraud or collusion with any other person or entity. Proposer shall submit with each Proposal a signed Certificate of Non-Collusion in the form attached hereto as Appendix M.

1.6 Transmission and Distribution System

1.6.1 The purpose of Hawaiian Electric's transmission system is to deliver generated power to the distribution systems and ultimately to the customer.

1.6.2 Hawaiian Electric's transmission and distribution system consists of 138,000 volt (138 kV) transmission lines, 46,000 volt (46kV) subtransmission lines, and 12,500 volt (12 kV) distribution lines, transmission substations, distribution substations, and an energy management system.

1.6.3 Electrical power from Hawaiian Electric and Independent Power Producer ("IPP") generation units are typically sent through transmission lines to transmission substations. The power is then sent to distribution substations where it is transformed to distribution voltages for distribution to customers.

1.6.4 The impact to the transmission and distribution system of a generating resource is highly dependent on many variables such as geographic location, circuit configuration, transmission and distribution line capabilities, growth rates, and customer use.

1.6.5 Information regarding the relative loading of distribution circuits can be found in Appendix K (Transmission Constraint Information) to this RFP, which Proposers may reference when deciding where to target their Project development. This information is being provided for reference only. Proposers should perform their own evaluation of project locations and Hawaiian Electric does not guarantee any project output or ability to connect based on such information.

1.7 Waiver of Competitive Bidding Framework

This RFP is not subject to the Competitive Bidding Framework, pursuant to Tariff Transmittal 15-09 filed October 1, 2015. However, Hawaiian Electric is amenable to the assignment of an Independent Observer if deemed necessary or advisable by the PUC.

1.8 Procedures for a Self-Build Option

1.8.1 Consistent with the principles set forth in the Competitive Bidding Framework, Hawaiian Electric will have the opportunity to offer a Proposal in response to this RFP (the "Self-Build Option"). With regard to the preparation of the evaluation of the Self-Build Option, Hawaiian Electric will follow certain procedures designed to safeguard against and address concerns associated with preferential treatment or preferential access to information, which procedures are set forth in the Procedures Manual attached hereto as Appendix J. Among other things, the personnel of Hawaiian Electric who will perform the evaluation of the Proposals (the "Evaluation Team") will deal at arms-length with the personnel preparing the Self-Build Option (the "Self-Build Team") in evaluating the Self-Build Option, and no preferential treatment or preferential access to information will be provided to the Self-Build Team by the Evaluation Team.

1.8.2 In addition, Hawaiian Electric will release certain details of the Proposal for the Self-Build Option to only prospective Proposers who have submitted a NOI and executed a Confidentiality Agreement prior to the due date for Proposals.

1.9 Proposal Limitations

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

- The RFP does not commit or require Hawaiian Electric 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. Hawaiian Electric reserves the right, in its sole discretion, 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.

- Hawaiian Electric reserves the right, in its sole discretion, to request additional information from any or all Proposers relating to their Proposals or to request Proposers to clarify the contents of their Proposals.

- Hawaiian Electric reserves the right, in its sole discretion, to solicit additional Proposals from Proposers after reviewing the initial Proposals. Other than as provided herein, no Proposer will be allowed to alter its Proposal or add new information to a Proposal after the due date for submission of Proposals.

- All material submitted in response to this RFP shall become the sole property of Hawaiian Electric, subject to the terms of the Confidentiality Agreement executed between Proposer and Hawaiian Electric.

1.10 Required PUC Approvals

Anticipated PUC approval requirements that will govern any PPA resulting from this RFP are set forth in Section 12.3 of the Model PPA.

1.11 No Protest

No Proposer or other person will have the right to protest or appeal any award of a Project made by Hawaiian Electric.

Chapter 2

Resource Needs and Requirements

2.1 Attributes of the Resources Requested

2.1.1 The following attributes are considered necessary for this Project:

- Project must be located on O'ahu
- Proposer will determine project site
- Maximum size of project will be 35 MW AC and projects must be greater than 1 MW AC
- Each generating unit will provide photovoltaic solar power
- Project will interconnect to Hawaiian Electric's grid
- Proposer will build and finance the desired facility and propose a complete turnkey community-based renewable energy solar program as further described herein (finance, construction, marketing, sales, administration (including use of the Customer enrollment tool and the bill processing tool), operations and maintenance)
- Term of the PPA will be 22 years
- Proposer will operate and maintain the facility for the term of the PPA
- Proposer will operate the CBRE solar program for 20 years
- Proposer will pursue all available applicable tax credits and, if available, will adjust its Proposal pricing accordingly to pass the benefit of the tax credits on to participating Customers (see Model PPA, Attachment J).

- Proposer will generate and administer a Customer Agreement with the participating Customers in the form attached hereto as Appendix C, or otherwise in conformance with this RFP. The contractual relationship established shall be between the Customer and the Proposer, not Hawaiian Electric. The Customer under the Customer Agreement must be a Hawaiian Electric account holder and a resident of the State of Hawai'i.
- Payments for energy under the PPA will be made by Hawaiian Electric to the Seller as set forth in the Model PPA, net of the credit applied by Hawaiian Electric to Customers. The credit will be accomplished via a credit mechanism on the Customer's Hawaiian Electric bill.
- Seller will designate Hawaiian Electric as its agent for purposes of the Customer enrollment tool and bill processing tool.
- Project must meet the Performance Standards described herein.

2.2 Performance Standards

Proposals must meet the attributes set forth in this RFP and the Performance Standards identified in the Model PPA, including but not limited to those set forth in Attachment B of the Model PPA, which include but are not limited to reactive power control, reactive amount, ramp rates, power fluctuation rate, and ride-through requirements.

2.3 Pricing Formula Requirements

2.3.1 Proposer's Response Package shall include the following pricing:

- PPA Rate/Credit Rate in cents per kWh
- Upfront payment in dollars per kW AC
- O&M fee in cents per kWh

2.3.2 Proposer's Response Package shall include the completed Levelized Cost of Energy ("LCOE") Calculator as set forth in Appendix L. Hawaiian Electric will use the LCOE Calculator to determine the Customer's LCOE relative to the Customer's Credit Rate, as an indication whether Customers will receive a threshold benefit over the term of the Customer Agreement.

2.3.3 Metering shall be provided by Seller as set forth in the Model PPA.

2.3.4 Seller shall cooperate to allow Hawaiian Electric to issue a bill credit to Customers at the PPA rate, including designating Hawaiian Electric as its agent to receive data to apply the bill credit through the bill processing tool. Seller shall be a licensee of the CBRE Software Tool to the extent necessary to accomplish Customer enrollment, bill credit, and other requirements of the Customer Agreement. No refunds for credits generated in excess of usage will be issued to Customers nor will excess credits be allowed to be carried over to the next month. Further information regarding the relationship between Seller/Developer, Customer, and Hawaiian Electric is set forth in the Model Customer Agreement and Model PPA.

2.4 Contract Energy

Proposers are required to provide their proposed Annual Contract Energy for each year from their Projects in their Proposals on the pricing sheets in the Proposer's Response Package. Each Proposer shall supply the assumptions and supporting documentation used to determine its Annual Contract Energy. Section 2 of the Model PPA provides provisions for the purchase and sale of energy, rate for purchase and sale, and billing and payment.

2.5 Contract Size

Proposals should provide for PPAs greater than one (1) MW and no larger than thirty-five (35) MW. Proposals that provide for PPAs of 35 MW or less with incremental phases increasing to larger than 35 MW will be considered nonresponsive.

2.6 Power Purchase Agreement

2.6.1 Hawaiian Electric and the successful Proposer(s) will execute a PPA in the form attached hereto as Appendix B ("Model PPA"), subject to modifications as mutually agreed by the parties in the contract negotiation process. The term of the PPA shall be for a period of twenty-two (22) years from the Commercial Operations Date. Proposers shall own and operate the Project for the term of the PPA and shall be responsible for all costs including Project development, Site and Land Rights acquisition, permitting, financing, construction of the generating facility, and operations and maintenance as further described in the Model PPA.

2.6.2 Proposers who elect to modify the Model PPA as part of their proposals shall provide a red-line version of the Model PPA with their suggested changes and revisions as a component of their Proposals. In order to facilitate this process, Hawaiian Electric will make available electronic versions of the Model PPA. Hawaiian Electric will review and consider the requested changes and reflect the suggested changes in the overall risk assessment associated with the evaluation of each Proposal. Proposers are strongly discouraged from proposing fundamental changes to the risk allocation set forth in the Model PPA. The following sections of the PPA are not negotiable and Proposers who submit proposals showing revisions to these sections are subject to disqualification: Article 1, Article 2, Article 3, Article 7, Article 8, Article 9, Article 11, Article 12.3, Article 14, Article 15, Article 16, Article 17, Article 18, Article 20, Article 21, Article 22, Article 25, Article 26, Article 27, Section 29.15, Sections 2 and 3 of Attachment B, Attachment C, Attachment H, Attachment I, Section 3 of Attachment J, Attachment M, Attachment T, and Attachment U. Changes to the above sections will be allowed to accommodate the results of the IRS and or changes in law that occur prior to the Execution Date. Although Hawaiian Electric is unlikely to consider substantive changes to Attachment Q, the Company will receive Proposer input to this attachment.

2.6.3 Proposals that do not include proposed revisions to the attached Model PPA shall be deemed to have accepted the Model PPA terms.

2.7 Customer Agreement

2.7.1 The Model Customer Agreement is attached as Appendix C to this RFP. Hawaiian Electric makes no representation or warranty that the Model Customer Agreement and the transactions described therein comply with federal or state securities laws, and Proposers are advised to obtain their own legal advice regarding the Model Customer Agreement and the CBRE Program. However, Hawaiian Electric will be applying for a "no action" letter from the U. S. Securities and Exchange Commission ("SEC"), indicating that the SEC would not take any enforcement action against Developer (as defined in the Model Customer Agreement) for violation of the registration requirements of the "Securities Act of 1933" and "Securities Exchange Act of 1934" (collectively, the "Act") based on such Developer's use of the form of the Model Customer Agreement. In the event the SEC does not grant Hawaiian Electric's request for a no-action letter, Proposer will be required to identify an available exemption from registration. Hawaiian Electric will also seek a "no action" letter from the State of Hawai'i Commissioner of Securities ("Securities Commissioner"), indicating that the Securities Commissioner would not take any enforcement action against Developer for violation of any State of Hawai'i securities laws based on such Developer's use of the form of Model Customer Agreement, or in the alternative, Hawaiian Electric will request the Securities Commissioner issue an interpretive order providing guidelines pursuant to which the Developer may request a non-enforcement letter from the Securities Commissioner, which non-enforcement letter will allow Developer to offer and sell to the potential Customers the interest in the energy production from Developer's facility ("CBRE Program Interest") without registration using the form of Model Customer agreement. In the event Hawaiian Electric is unable to obtain a no-action letter from the Securities Commissioner and the Securities Commissioner does not issue an interpretative order,

Proposer will be required to either identify an available exemption from registration or register the CBRE Program Interest with the Securities Commissioner in compliance with State of Hawai'i securities laws before Developer can sell any CBRE Program Interest to potential Customers. Hawaiian Electric reserves the right to revise the Model Customer Agreement based on changes in securities laws or information received from the SEC and/or State Securities Commissioner prior to a project's Commercial Operations Date (as defined in the Model PPA).

2.7.2 If Proposers desire to modify the Model Customer Agreement or use their own form of Customer Agreement, Proposers must note this in their Proposals. If a Proposer desires to use its own and/or a modified form of the Customer Agreement, and Proposer's project is selected, prior to Hawaiian Electric submitting the executed PPA for PUC's approval, Proposer must provide evidence of federal and state securities compliance. Evidence of federal securities compliance may include: a certification by Proposer certifying that Proposer has obtained (i) a no action letter from the SEC, or (ii) a legal opinion from a State of Hawai'i licensed attorney opining that the offering of the CBRE Program Interests and its form of Customer Agreement are in compliance with all applicable federal securities laws under the available exemption claimed. A copy of the no-action letter or legal opinion must be maintained in the Developer's records and be made available to purchasers of the CBRE Program Interest. Evidence of state securities compliance may include: a certification by Proposer certifying that Proposer has obtained (i) a no-action letter from the Securities Commissioner, (ii) a legal opinion from a State of Hawai'i licensed attorney opining that the offering of the CBRE Program Interests and its form of Customer Agreement are in compliance with all applicable state securities laws under the available exemption claimed, or (iii) a non-enforcement letter from the Securities Commissioner, providing that the Developer may offer and sell the CBRE Program Interest without registration. A copy of the no-action letter, legal opinion or non-enforcement letter must be maintained in the Developer's records and be made available to purchasers of the CBRE Program Interest. If Proposer is unable to provide evidence of federal and state securities compliance as described hereinabove by the time Hawaiian Electric is otherwise ready to submit the PPA to the PUC for approval, Proposer will be required to use the Model Customer Agreement and if there are no available exemptions under State of Hawai'i securities laws, register the offering of the CBRE Program Interest with the Securities Commissioner.

2.7.3 Proposers that do not state a desire to use their own form of Customer Agreement shall be deemed to have accepted the Model Customer Agreement terms and to have agreed to use the Model Customer Agreement in their relations with Customers.

2.8 West Loch Site

2.8.1 As an alternative to a site identified by the Proposer, Hawaiian Electric has identified a potential Site located at West Loch that is a strategic location and where Hawaiian

Electric may be able to negotiate a lease.[5] This West Loch Site is described in Appendix I[6] attached hereto (the "West Loch Site"). Proposers may propose to situate their Project at the West Loch Site.[7]

2.8.2 The West Loch Site is to be leased by Hawaiian Electric from the U. S. Department of the Navy. The Seller on the West Loch Site will be required to execute a sublease with Hawaiian Electric for use of the West Loch Site and will be responsible for assuming all payments and other obligations under the lease.

2.8.3 Further information and requirements regarding the West Loch Site are set forth in Appendix I.[8] Proposers proposing to locate at the West Loch Site must provide the additional information requested in the Technical Information section of the Proposer's Response Package.

2.9 Fees

2.9.1 The following fees have been approved by the PUC for Phase 1 of the CBRE Program:

- Program Cost Reimbursement Fee (per kW AC): $65, excluding General Excise Tax, if applicable, payable by Customer to Developer. Developers must pay Hawaiian Electric, on a quarterly basis, the Program Cost Reimbursement Fee recovered from Participants by check within 15 days of the end of each quarter.
- Developer Enrollment Fee (per kW AC): $52 for the installed capacity made available for CBRE, payable by Developer to Hawaiian Electric by check.
- Customer Monthly Administration Fee (per kW AC per month): $1.92, payable by Customer to Hawaiian Electric through the Customer's Hawaiian Electric bill.

[5] Hawaiian Electric is in the process of negotiating this lease with the U.S. Department of the Navy and plans to have secured such lease prior to issuance of the RFP. Hawaiian Electric will update this draft RFP prior to its issuance to provide further details on the site and lease after completion of the lease agreement. Company reserves the right to remove the offer of the West Loch Site if Company is unable to negotiate a lease for such site prior to the issuance of the RFP.

[6] To be populated upon completion of lease negotiations and prior to issuance of this RFP.

[7] In addition to the West Loch Site, Company is also currently evaluating other potential sites that could be offered to Proposers ("Alternative Company Offered Sites"). If Alternative Company Offered Sites are identified by the Company, the Alternative Company Offered Sites locations and details will be included in the RFP prior to issuance and will be described in detail in an appendix attached hereto. If Alternative Company Offered Sites are offered, Proposers may propose to situate their Project at an Alternative Company Offered Site, provided, however, that Projects proposed at an Alternative Company Offered Site meet all requirements for such site which will be set forth in this RFP at the time of issuance.

[8] To be populated upon completion of lease negotiations and prior to issuance of this RFP.

2.9.2 The PUC has also approved the following categories of fees for Phase 1 of the CBRE Program:

- Customer Upfront Fee (dollars per kW AC), payable by Customer to Developer through the Customer enrollment tool. The amount of the Customer Upfront Fee will be determined through this RFP process and set forth in the Customer Agreement and the PPA of each Developer.
- Customer Monthly O&M Fee (cents per kWh AC per month), payable by Customer to Developer. This payment shall be deducted by Hawaiian Electric from the amount of credit owed to Customer on its monthly Hawaiian Electric bill and Hawaiian Electric will deposit such payments, to the extent paid by Customer and collected by Hawaiian Electric, to an escrow account established for such purpose for the benefit of Developer. The amount of the Customer Monthly O&M Fee will be determined through this RFP process and set forth in the Customer Agreement and the PPA of each Developer.

2.9.3 The proposed fees set forth above are for the first year of Phase 1. These fees, other than the customer upfront fee, will be adjusted for inflation at the rate of Two Percent (2%) per annum. Such annual increase shall occur on the anniversary of the Commercial Operations Date for the first Project in the CBRE Program to achieve Commercial Operations. All fees include revenue taxes.

2.10 Interconnection to the Hawaiian Electric System

2.10.1 The fundamental purpose of this RFP is to effectively deliver additional renewable energy to the Hawaiian Electric System. Therefore, the means of interconnection between a proposed Project and the Hawaiian Electric System is an important consideration for all Proposers. The Proposers' proposed Interconnection Facilities shall be compatible with the Hawaiian Electric System. Proposers shall demonstrate that all proposed Projects adequately consider their impacts on the performance and reliability of the Hawaiian Electric System.

2.10.2 The Interconnection Facilities (*i.e.*, the equipment and devices required to permit a facility to operate in parallel with, and deliver electric energy to the Hawaiian Electric System, such as, but not limited to transmission lines, transformers, switches, and circuit breakers) includes both: (1) Seller-Owned Interconnection Facilities; and (2) Company-Owned Interconnection Facilities.

2.10.3 The Proposer's proposed Interconnection Facilities shall be compatible with the Hawaiian Electric System and must meet the requirements set forth in the IRS and the Model PPA, as may be revised to reflect the results of the IRS. The Proposer shall be responsible for all costs related to the design and installation of all Interconnection Facilities. The control and coordination requirements of the power flow from the Generator(s) will be determined by the IRS and may consist of fiber optic communications facilities provided by the Proposer to the Point of Interconnection. Alternate control will be required and may consist of interconnection with Hawaiian Electric's microwave system.

2.10.4 Tariff Rule 19, a copy of which is attached hereto as Appendix D, 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. Hawaiian Electric uses the breaker-and-a-half scheme for its transmission switching station as shown in Attachment A of Tariff Rule 19. Proposers should follow this scheme for purposes of their estimates.

2.10.5 Tariff Rule 14H, a copy of which is attached hereto as Appendix E, establishes provisions regarding Interconnection and Distribution Upgrades. Tariff Rule 14H will be utilized as the basis for addressing interconnection and distribution upgrades for any Project developed through this RFP.

2.10.6 Selecting a site for new generation and / or transmission line terminus has cost impacts to the Hawaiian Electric System. The Proposer shall be responsible for all costs required to interconnect a Project to the Hawaiian Electric System, including all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities.

2.10.7 Hawaiian Electric has developed information on transmission constraints associated with likely areas of interconnection and includes identification of system generation stations, high load density, and areas nearing capacity limits set forth in Hawaiian Electric's planning criteria. See Appendix K (Transmission Constraint Information).

2.10.8 Proposers are required to include in their pricing proposal all costs for interconnection and transmission upgrades or distribution upgrades expected to be required between their Facility and their proposed Point of Interconnection. See Appendix H (Interconnection Cost Information). Selected projects will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. No adjustments to energy pricing will be permitted as a result of the actual final costs.

2.10.9 For Proposals selected to the Final Award Group, Hawaiian Electric will complete an IRS at the Proposer's expense with, among other things, power systems analysis and identification of equipment, costs, and schedule to evaluate the upgrades necessary to interconnect the proposed Project into the Hawaiian Electric System, individually or on a portfolio basis. The Proposer must provide all Proposal information required to complete the IRS no later than 15 days after notification is provided of selection to the Final Award Group, as described in Appendix P. The IRS process is further described in Section 4.12 of this RFP. The IRS will provide information including, but not limited to, an estimated cost and schedule of the Company's scope of work for the required Interconnection Facilities for the project. The IRS must be completed and incorporated into the final executed PPA.

2.10.10 Hawaiian Electric will not allow Proposers to design, construct, own, or operate any of what are defined in Tariff Rule 19 as the Company-Owned Interconnection Facilities.

2.10.11 Proposers are required to provide a Single Line Diagram with their proposal as requested in the Proposer's Response Package.

2.11 O'ahu Excess Energy Provisions

The Facility will be subject to active energy power control implementation for excess energy conditions. Appendix O (Curtailment Information) provides information regarding excess energy conditions on Hawaiian Electric's grid.

2.12 Decommissioning

Proposers shall be responsible for the decommissioning of the Project and the restoration of the Site upon the expiration of the PPA. Decommissioning responsibilities shall include developing and implementing a program for the recycling to the fullest extent possible, or otherwise proper disposal, of installed infrastructure. Proposer shall describe its decommissioning plan, including programs for recycling of installed infrastructure, if any, and how the respondent will guarantee the Site is returned to its original ecological condition in the event of default by the Proposer.

Chapter 3

Instructions to Proposers

3.1 Schedule for the Proposal Process

Chart 1 sets forth the schedule for the proposal process (the "RFP Schedule"). Hawaiian Electric reserves the right to revise the RFP Schedule as necessary. Changes to the RFP Schedule will be emailed to Proposers who have submitted a NOI.

Chart 1
RFP Schedule

Milestone	Schedule Dates
(1) PUC approves Tariff Rule XX	January 2, 2016[9]
(2) Draft RFP is posted	5 business days after (1)[10]
(3) Written questions for Technical Conference due	15 days after (2)
(4) Technical Conference	15 days after (3)
(5) Written comments from attendees at Technical Conference due	15 days after (4)
(6) Proposed Final RFP and Model PPA filed with PUC	Up to 60 days after (4)
(7) PUC approves Final RFP and Model PPA	30 days after (6)[11]
(8) Final RFP is issued	5 business days after (7)
(9) Proposal for Self-Build Option is due and made available to potential Proposers	30 days after (8) at 4:00 pm HST
(10) Final date for receipt of Notice of Intent to Propose and executed Confidentiality Agreement	45 days after (8) at 4:00 pm HST
(11) All other Proposals due	60 days after (8) at 4:00 pm HST
(12) Selection of Short List	45 days after (11)
(13) Decision whether to conduct BAFO posted and publication of BAFO Information	15 days after (12)
(14) Self-Build Option BAFO due (if any)	5 days after (13)
(15) Other Proposers' BAFOs due (if any)	5 days after (14)
(16) Selection to fill 35 MW Capacity	15 business days after (15)
(17) Price Match due	5 business days after (16)
(18) Selection of Final Award Group	15 days after (17)
(19) Deadline for Receipt of IRS Data Submittal	15 days after (18)

[9] Date will be revised depending upon actual date of PUC approval of Tariff Rule XX.

[10] This schedule assumes minimal changes to the Draft RFP as a result of the PUC decision on proposed Tariff Rule XX.

[11] The PUC will be requested to approve the Proposed Final RFP and Model PPA within 30 days of filing.

3.2 Notice of Intent to Propose

Prospective Proposers must submit a NOI within the time shown on the RFP Schedule. Hawaiian Electric will only provide updates regarding this RFP to prospective Proposers who submit a NOI. Persons who submit a NOI are not obligated to submit a Proposal. Proposers are responsible for providing the Company with any updates to the NOI if Proposer information changes during the RFP process. The NOI should be in the form attached as Appendix Q and emailed to the RFP Email Address set forth in Section 1.4.

3.3 Technical Conference

Hawaiian Electric will hold a Technical Conference (meeting or webinar) to describe the RFP for prospective Proposers. Prospective Proposers who submitted an NOI will be invited to attend. Prospective Proposers may submit written questions in advance regarding the proposed RFP to the RFP Email Address set forth in Section 1.4. Hawaiian Electric will attempt to answer such questions during the Technical Conference, and no answers to questions will be sent or posted prior to the Technical Conference. Hawaiian Electric will respond only to questions it deems relevant and reserves the right not to respond to all questions. Hawaiian Electric will aim to address questions during the Technical Conference and may, but is not required to, post or send select written responses subsequent to the Technical Conference. In the event a conflict exists between any oral and written response, the written response shall control.

3.4 Preparation of Proposals

3.4.1 Each Proposer shall be solely responsible for reviewing the RFP (including all attachments and links) and for thoroughly investigating and informing itself with respect to all matters pertinent to this RFP, the Proposer's Proposal and Proposer's anticipated performance under the PPA.

3.4.2 Proposers shall rely only on official information provided by Hawaiian Electric in this RFP when preparing their Proposal. Hawaiian Electric will rely only on the information included in the Proposals and additional information from Proposers solicited by Hawaiian Electric to evaluate the Proposals received.

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 review of the RFP documents, attending meetings with Hawaiian Electric, Site visits, third-party consultant consultation, and investigation and informing itself with respect to matters pertaining to its Proposal and this RFP, and the same shall not be reimbursed by Hawaiian Electric to any Proposer, including the selected Proposer(s).

3.4.4 Each Proposal shall contain the full name and business address of the Proposer and shall be signed by an authorized officer or agent[12] of the Proposer. All Proposals submitted

[12] Proposer's officer or agent must be authorized, in writing, via Proposer's organizational documents (i.e., Articles of Incorporation, By-laws, etc.), resolution or similar documentation.

shall become the property of Hawaiian Electric.

3.5 Organization of the Proposal

The contents of the Proposals shall be organized as set forth in Appendix A, Proposer's Response Package. If Hawaiian Electric elects to utilize an online response platform, further instructions will be issued but the content of Proposer's Response Package on the online response platform will be consistent generally with Appendix A.

3.6 Project Description

3.6.1 Proposers must agree to provide open and complete access to their books and project financial information and provide a project description including the following:

- Proposed interconnection point
- Layout of system
- Single line and Three line diagrams with a wet stamp by a registered PE in Hawai'i
- Details of major equipment
- Project pro forma with supporting documentation and proposed project finance structure

3.6.2 Proposers must also provide the following information in their Proposer's Response Package template:

- PPA/Credit rate - independent of subscription level and without any price escalation
- Upfront payment per kW AC for Customers
- O&M fee per kWh
- If Proposer is willing, it may provide an option, to increase the CBRE Program allocation above 29% up to 75% (percentage to be selected by Proposer) of the Facility output. Such capacity would only be increased during the term of the PPA if Hawaiian Electric determines that there is a need for additional CBRE Program capacity
- Annual energy production (MWh) of Facility for the term of the PPA, including relevant supporting information and assumptions used such as solar irradiance resource measurements, energy production studies, warranted levels of annual degradation to PV modules, and related information
- Projected hourly annual energy production profile of Facility (8760 hours/year)
- Standard Customer LCOE data entered into the calculator provided in Appendix L
    - The calculator template will be used to calculate LCOE for Customers for each bid based on the upfront and ongoing payment proposed to ensure that bids can be compared on a common basis. The LCOE will be calculated using the Hawaiian Electric discount rate of 8.076%.
    - The Customer LCOE must meet the threshold rate as indicated in the calculator to ensure that the project will also be an attractive offer to potential CBRE Program Customers.

3.6.3 All proposal information must be independent of changes to state or federal investment tax credit policies.

3.6.4 The PPA rate must be less than Company's long run on-peak avoided cost over the term of the Project. The Company will determine its long run on-peak avoided cost and will evaluate each Proposal's compliance with this criteria during the evaluation process, including the Self-Build Option.

3.7 General Instructions to Proposers

3.7.1 Proposals must be submitted by email to the email address or electronic bidding platform set forth in Section 1.4 herein by the date and time shown in the RFP Schedule. No confirmation, either automatic or manual, will be sent by Hawaiian Electric. It is the Proposers' responsibility to ensure that its Proposal is received by Hawaiian Electric. Any Proposal received after the due date for submission of Proposals shall be rejected.

3.7.2 All Proposals must be prepared in accordance with the procedures and format specified in the RFP. Proposers are also required to respond to all questions and provide all information requested in the RFP. This process is intended to provide an orderly, consistent and fair evaluation of the Proposals. All responses to this RFP shall be submitted in the English language.

3.7.3 It is the Proposer's sole responsibility to advise the Energy Contract Manager of conflicting requirements, ambiguities, omission of information, or the need for clarification prior to submitting a Proposal and before the due date for submission of Proposals.

3.7.4 Proposals that are not included on the Short List will be released when the Short List is established. All other Proposals must remain valid through the selection of the Final Award Group, and if included in the Final Award Group, through the signing of the PPA and approval by the PUC.

3.8 Opening of Proposals

Proposals will be opened after the proposal due date at such date and time as Hawaiian Electric deems appropriate. The Proposers shall not be present for the opening of proposals.

3.9 Confidentiality

3.9.1 Each prospective Proposer must submit an executed Confidentiality Agreement in the form attached hereto as Appendix G by the date specified in the RFP Schedule. The form of the Confidentiality Agreement is not negotiable. Information designated as confidential by Hawaiian Electric will be provided on a limited basis and only those prospective Proposers that have submitted a Confidentiality Agreement will be considered.

3.9.2 Proposers must clearly identify all confidential information in their Proposals. However, Proposers should take care to designate as confidential only those portions of their

Proposals that genuinely warrant confidential treatment. Hawaiian Electric discourages the practice of marking each and every page of a Proposal as "Confidential." Hawaiian Electric will make reasonable efforts to protect any such confidential information that is clearly marked as "Confidential." Hawaiian Electric reserves the right to release any information, even if marked Confidential, to its agents or contractors for the purpose of evaluating the Proposal.

3.9.3 Hawaiian Electric will file a motion with the PUC for the issuance of a Protective Order to protect confidential information provided by Proposers to Hawaiian Electric. A copy of the Protective Order, once approved and issued by the PUC, will be provided to Proposers. Proposers should be aware that Hawaiian Electric may be required to share certain confidential information contained in Proposals with the PUC and the parties to any docket instituted by the PUC regarding the CBRE program, 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 shall be provided Proposals from any other Proposer or any other information contained therein or provided by or with respect to any other Proposer, except as expressly stated herein with respect to the Self-Build Option and the Best and Final Offer.

3.10 Exceptions

3.10.1 As set forth above, if Proposers are proposing modifications to the Model PPA, Proposers are required to submit a red-lined copy of the document. Proposers are encouraged to state the rationale for their proposed exceptions.

3.10.2 Proposers are discouraged from proposing changes to the risk allocation set forth in the Model PPA.

3.10.3 Modifications to the PPA provisions previously identified in Section 2.6.2 are not allowed and such provisions will not be subject to negotiation.

3.10.4 Hawaiian Electric shall have the right to reject any Proposal or evaluate it unfavorably based on the nature of the exceptions to the Model PPA proposed by a Proposer.

3.10.5 As set forth above, Proposers must indicate if they do not intend to use the Model Customer Agreement.

3.11 Initial Evaluation

Proposals that meet the Eligibility Requirements and Threshold Requirements will then be subject to a price and non-price analysis. The results of the price and non-price analysis will be a relative ranking and scoring of all eligible proposals. Based on the initial evaluation of the price-related and the non-price-related criteria as described above, Hawaiian Electric will select an initial Short List from the Proposals submitted.

3.12 Best and Final Offer Process

In an effort to obtain the best value for its customers, Hawaiian Electric may elect to conduct a modified Best and Final Offer process as described in Section 4.6 herein. The Best and Final Offers of the Proposals will be subject to a more detailed assessment. The detailed evaluation will also include a risk assessment of the Proposals to assess in more detail the viability of each proposal as well as a sensitivity analysis of key factors influencing project economics.

3.13 Price Match Process

In an effort to obtain the best value and achieve simplicity for Customers, the Customer upfront payment per kW, PPA rate/credit rate per kWh, and O&M Fee per kWh will be required to be the same for all Projects awarded pursuant to this RFP. Proposers selected for the Short List will be required to match the PPA rate/credit rate, Customer upfront payment and O&M fee of the lowest priced Proposal selected to the Short List. If there is a Best and Final Offer process, such price match shall occur after such process. In the event that a Proposal selected to the Short List is not willing to agree to match the price of the lowest priced Proposal, the Proposal will be withdrawn from the Short List. In the event that there are not enough Proposals on the Short List willing to price match the lowest priced proposal to provide a minimum of the 10 MW of Phase 1 CBRE capacity sought by this RFP, the Company reserves the right to request the Proposals selected to the Short List to match the price PPA rate/credit rate per kWh, and O&M Fee per kWh of a size (MW) weighted average determined by the pricing of the highest ranked Proposals necessary to provide 10 MW of Phase 1 CBRE capacity.

3.14 Requests for Additional Information

Hawaiian Electric reserves the right to request additional information from Proposers at any time during the RFP process. Proposers that are not responsive to such information requests may be eliminated from further consideration.

3.15 Credit Requirements Under the PPA

3.15.1 Proposers with whom Hawaiian Electric concludes contract negotiations of a PPA are required to post Development Period Security and Operating Period Security as described in the Model PPA.

3.15.2 The Development Period Security and Operating Period Security identified in the Model PPA are minimum requirements. Proposers may offer to post higher levels of Development Period Security and Operating Period Security in Proposer's Response Package. The amounts of Development Period Security and Operating Period Security

offered may be considered by Hawaiian Electric during the evaluation process set forth in this RFP. Proposers may not propose an amount lower than set forth in the Model PPA.

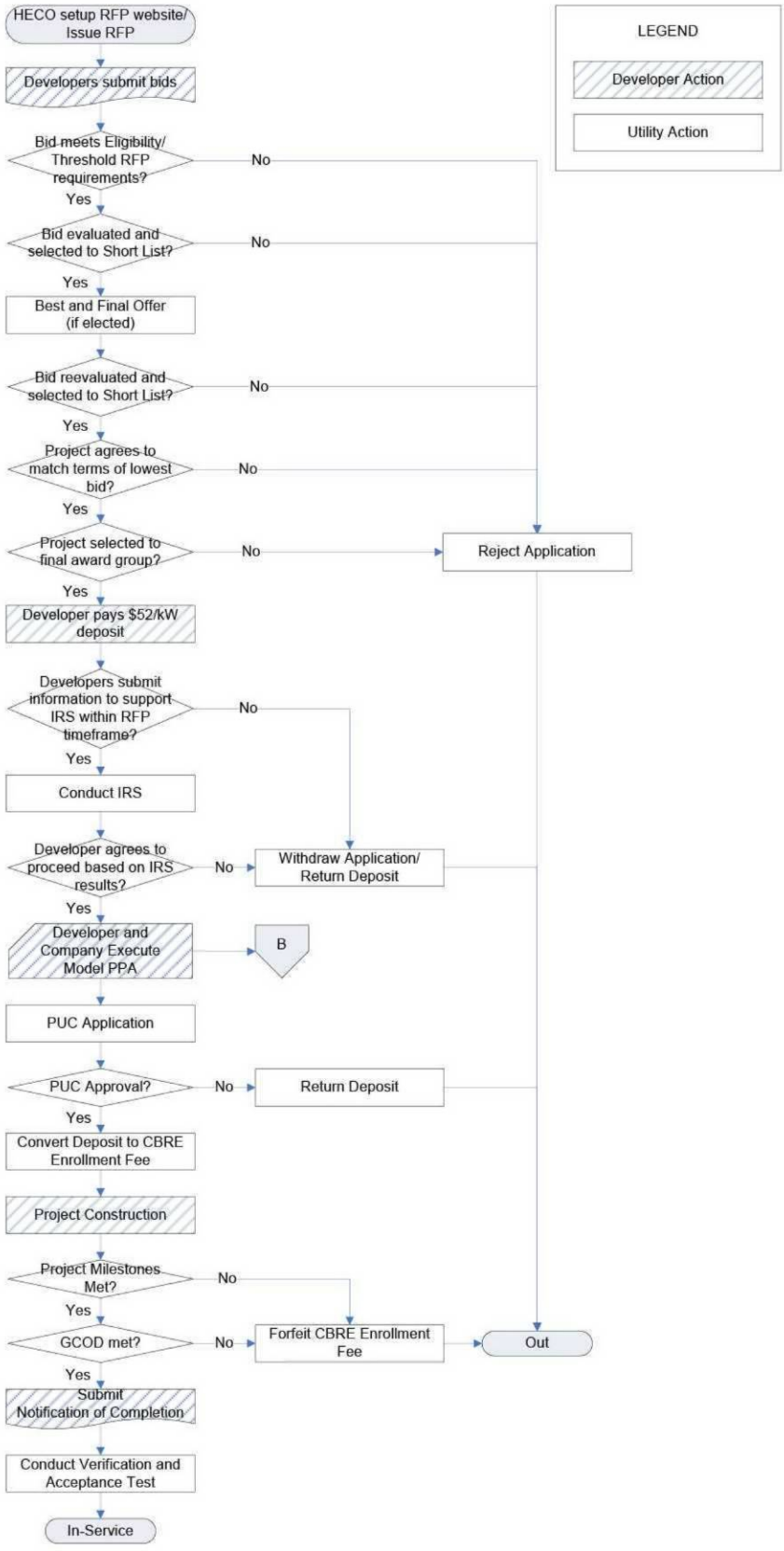
Chapter 4

Evaluation Process and Evaluation Criteria

4.1 Proposal Evaluation and Selection Process

Once the proposals are received, the proposals will be subject to a consistent and defined review, evaluation and selection process. This Chapter will provide a detailed description of each stage of the process along with the requirements of Proposers at each stage. Chart 2 sets forth the flowchart for the proposal evaluation and selection process.

Chart 2 – Tier 3 CBRE Project Workflow



4.2 Eligibility Requirements

4.2.1 Each Proposal will be reviewed to ensure that it meets the following Eligibility Requirements. Failure to meet any of these requirements could lead to disqualification of the Proposal from further review and evaluation.

- The Proposal must be received on time. Proposals received after the established due date will be subject to disqualification.
- All Proposals must be organized according to the structure identified in Chapter 3 and consistent with the structure of the Response Package. Failure to provide all requested information may be cause for disqualification.
- The Proposal must be signed and certified by an officer or other authorized person of the Proposer.
- The Proposal must not be conditional in a manner not permitted by the RFP.
- The Proposal must not contain material omissions.
- The Proposal must not contain misrepresentations.
- There must not have been, in Hawaiian Electric's sole determination, illegal or undue attempts by or on behalf of the Proposer or others to influence the Proposal review process.
- Hawaiian Electric is satisfied, in its sole discretion, that the Proposer is capable of meeting its financial obligations with respect to its Proposal for reasons including, but not limited to, Proposer's credit rating or creditworthiness.
- Hawaiian Electric is satisfied, in its sole discretion, that the Proposer is capable of fully and timely implementing its Proposal.
- Proposers have fully executed the agreements or other documents required pursuant to this RFP.
- The Proposal demonstrates Site Control.
- The Proposal allocates a minimum of 29% of the Facility output for the CBRE Program (*e.g.*, 10 MW of total 35 MW).
- Proposer is or will form a Seller incorporated or organized under the laws of the State of Hawai'i.
- Proposer's principal place of business is in the State of Hawai'i or Proposer will form a Seller with its principal place of business in the State of Hawai'i.
- Proposer must be deemed to be doing business within the State of Hawai'i or Proposer will form a Seller deemed to be doing business within the State of Hawai'i. Generally, if Seller maintains its principal place of business within the state and meets the 80% financial threshold test (derives 80% of its gross revenues in Hawai'i; has 80% of its assets in Hawai'i; uses 80% of its net proceeds from sales made within the state for the operation of its business within the state), then it will be deemed to be doing business within Hawai'i. The 80% financial threshold test does not include the activities of the Seller's parent entity but does include any subsidiaries.
- Proposer provides a certificate of good standing from the State of Hawai'i Department of Commerce and Consumer Affairs.
- Proposer provides Federal and State tax clearance certificates for Proposer.
- Proposer's Customer LCOE meets the threshold rate as indicated in the LCOE Calculator.

4.2.2 Hawaiian Electric may waive non-material deviations in a Proposal that are merely a matter of form, and not substance, and the correction of which would not be prejudicial to other Proposals.

4.3 Threshold Requirements

Bids 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 financial accounting consequences for Hawaiian Electric. 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, 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 Hawaiian Electric moves through the remainder of the RFP process. To meet this Site Control requirement, Proposers must either provide documentation indicating that they own the Site on which the Project will be situated, hold a leasehold interest in the Site for a term at least equal to the term of the PPA, have an executed option agreement to purchase the Site or to lease the Site for a term at least equal to the term of the PPA. Where government or publicly-owned lands are part of the Site or are required for the successful implementation of the Proposal, Proposer must provide a credible and viable plan, including evidence of steps taken to date of Proposal, to secure all necessary rights-of-way, including but not limited to sufficient progress toward approval of the government agency or other body with authority to grant such approval (as demonstrated by records of the agency) and reasonable assumptions regarding pricing and scheduling for securing such rights-of-way. Proposals that do not demonstrate Site Control will be rejected.

- **Experience of the Proposer**

The Proposer, its affiliated companies, partners, and / or contractors and consultants on the Proposer's Project team shall have experience in the development and operation of at least one (1) electricity generation project similar in size, scope, and structure to the Project being proposed by Proposer. Hawaiian Electric will consider a Proposer to have reasonably met this Threshold Requirement if the Proposer can provide sufficient information to demonstrate that the member of the project team whose experience is being identified to meet this threshold criterion has a firm commitment to provide services to the Proposer.

- **Financial Compliance**

This Project must not cause Hawaiian Electric to be subject to consolidation and capital lease treatment as set forth in Financial Accounting Standards Board (FASB) Accounting Standards Codification ("ASC") Topic 810 ("Consolidation") and 840 ("Leases"),

respectively, 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 Hawaiian Electric to verify such conclusion, that the proposal will not: (1) trigger a capital lease accounting treatment under FASB ASC 840 or; (2) result in the Seller under the PPA being a Variable Interest Entity ("VIE") that would trigger consolidation of the Sellers's finances on to Hawaiian Electric's financial statements under FASB ASC 810. Hawaiian Electric will perform a preliminary consolidation and capital lease assessment based on the Proposals received. If Hawaiian Electric believes that the Proposal may be subject to such treatment, it will inform the Proposer and either may request additional information or work with the Proposer to structure its agreement to avoid the capital lease and consolidation treatment. Hawaiian Electric reserves the right to allow a Proposal to proceed through the evaluation process through selection of the Short List and work with the Proposer on this issue. If Hawaiian Electric believes, in its discretion, that Hawaiian Electric and the Proposer cannot resolve consolidation and capital lease issues during the RFP process, Hawaiian Electric reserves the right to reject the Proposal as nonconforming to the Threshold Requirements. A final consolidation and capital lease assessment will be performed prior to execution of a PPA.

- **Credit / Collateral Requirements**

Proposers shall agree to post Development Period Security and Operating Period Security as set forth in Section 3.15 (Credit Requirements Under the PPA) of this RFP.

If a Proposer has any doubt as to whether its Project will meet the Threshold Requirements, the Proposer shall seek clarification from Hawaiian Electric in advance of submitting a Proposal. In any event, Proposers should provide a description of the Project and an explanation as to why the Proposer believes the project meets the Threshold Requirements.

4.4 Initial Evaluation – Price and Non-Price Analysis

Proposals that meet the Threshold Requirements will then be subject to a price and non-price analysis. 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. Hawaiian Electric will maintain separate evaluation teams to evaluate the price-related and non-price-related criteria.

4.4.1 Initial Evaluation of the Price Related Criteria

4.4.1.1 The price-related evaluation will be based on the criteria set forth in Appendix N. Preference will be given to Proposers able to provide energy to Hawaiian Electric at the lowest possible cost.

4.4.1.2 Proposer must provide a price for the purchase of the energy in cents per kWh (AC) units. Proposal pricing must include all costs for which Proposer intends to seek compensation.

4.4.1.3 Hawaiian Electric will evaluate the price-related criteria of the Proposals by assessing the proposed cost of the delivered energy and operating characteristics of the proposed Project. All eligible Proposals will be initially evaluated on the basis of their Proposal price and proposed price formula and operational performance factors in the initial price evaluation. The price evaluation will be based on the Proposer's proposed PPA price. For conducting this analysis, Hawaiian Electric will rank the Proposals with respect to their price and award evaluation points in accordance with the relative rankings.

4.4.2 Initial Evaluation of the Non-Price Related Criteria

The non-price-related evaluation will be based on the criteria set forth in Appendix N.

4.5 Selection of the Short List

Based on the initial evaluation of the price-related and the non-price-related criteria as described above, Hawaiian Electric will select a Short List from the Proposals submitted. While the total price and non-price rankings will serve as the basis of evaluation, Hawaiian Electric reserves the right to select a Short List that could include a diversity of resource characteristics, project types, and other options. Hawaiian Electric reserves the right to determine the number of projects selected to the Short List.

4.6 Best and Final Offer

4.6.1 In an effort to obtain the best value for its customers, Hawaiian Electric may, but is not obligated to, conduct a modified Best and Final Offer process. Within the time specified on Chart 1, the following information (the "BAFO Information") from every Proposal selected to the Short List will be made available to all of the Proposers who met the Eligibility Requirements and Threshold Requirements:

- PPA Price/Credit Rate
- Upfront Payment
- O&M Fee
- Maximum Potential Amount of CBRE Allocation for the Project

Proposers name, site location, and project size will not be disclosed at this time.

4.6.2 Within the time specified on Chart 1, the Proposers on the Short List may modify their Proposals as to the BAFO Information only, which shall be their Best and Final Offer. If a Proposer does not modify its Proposal, the original Proposal will be deemed its Best and Final Offer.

4.6.3 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.

4.6.4 Hawaiian Electric will proceed with the detailed evaluation of the Best and Final Offers as described in Section 4.7 herein.

4.6.5 The Self-Build Option, if selected to the Short List, will also have the same opportunity to provide a Best and Final Offer in accordance with the terms of this RFP. The Best and Final Offer for the Self-Build Option will be due prior to the Best and Final Offers for all other Proposers, as specified on Chart 1.

4.7 Detailed Evaluation

4.7.1 The Best and Final Offers of the Proposals will be subject to a more detailed assessment. The detailed evaluation will also include a risk assessment of the Proposals to assess in more detail the viability of each proposal as well as a sensitivity analysis of key factors influencing project economics.

4.7.2 The objective of the detailed evaluation is to select the Proposal(s) which provide the greatest value consistent with Hawaiian Electric's objectives and requirements as set forth in this RFP. The preferred Proposal(s) do not necessarily have to be the lowest cost option(s) or have the most favorable non-price factor evaluation. Hawaiian Electric prefers viable Projects which provide a low-cost with limited risk and that provide resource diversity, operational reliability, operational flexibility, and the ability to meet system operational requirements.

4.7.3 During the detailed evaluation, a fatal flaws analysis will be conducted to disqualify any Proposal that is deemed to be substantially insufficient in two or more of the non-price evaluation factors.

4.7.4 During the detailed evaluation process, Hawaiian Electric may elect to have face-to-face meetings with Proposers to better assess the Proposals and the status of the proposed Project(s). The detailed evaluation will also include a risk assessment of the Proposals to assess, in more detail, the viability of each Proposal as well as a sensitivity analysis of key factors influencing Project economics, if applicable. Hawaiian Electric will also review, in detail, any exceptions to the Model PPA proposed by Proposers in order to assess the risk associated with contract execution.

4.7.5 Hawaiian Electric will select and rank alternative resource plans (or portfolios) by minimizing total utility system costs. In the detailed evaluation stage, Hawaiian Electric may also conduct sensitivity analysis of key market drivers such as sales forecasts.

4.8 Selection of 35 MW of Projects

Company will select Proposals from the Short List based on its evaluation to fulfill the 35 MW Capacity of this RFP. These Proposals will be required to Price Match as set forth in Section 4.9 below. Proposers who do not provide conformation of acceptance of the Price Match will be removed from the Short List, and Hawaiian Electric reserves the right to select the next highest ranked Proposal from the Short List, if needed, to fulfill any remaining available capacity.

4.9 Price Match

Per the time frames identified in Chart 1, within 5 days after a Proposal is selected to fulfill the 35 MW Capacity of this RFP as set forth in Section 4.8, the Proposer must provide confirmation of acceptance of the Price Match. To achieve simplicity for Customers, the upfront payment per kW, credit rate per kWh, and O&M Fee per kWh will be required to be the same for all Projects awarded pursuant to this RFP as set forth in Section 3.13 (Price Match Process) herein.

4.10 Selection of the Final Award Group

Based on the results of the detailed evaluation and Price Match, Hawaiian Electric will select a Final Award Group from which to begin contract negotiations. All Proposers will be notified at this stage of the evaluation process whether their Proposal is included in the Final Award Group. However, Proposal evaluation results and rankings will not be disclosed to the Proposers in the Final Award Group. Selection to the Final Award Group and/or entering into contract negotiations does not guarantee execution of any contract.

4.11 Developer Enrollment Fee

Proposers selected to the Final Award Group are required to tender a Developer Enrollment Fee of $52/kW of that portion of the Contract Capacity (as defined in the Model PPA) made available to Proposer's CBRE Program as of the date of payment set forth in Chart 1, which portion is 29% of the Contract Capacity. If the portion of Proposers Project made available to the CBRE Program is subsequently increased as provided for in Attachment Q, Section 2 of the Model PPA, Proposer shall pay to Company, within 30 Days of such increase, the Developer Enrollment Fee for the additional portion of the Contract Capacity that is made available to Proposer's CBRE Program as a result of such increase. As provided in the CBRE Tariff, the dollar value of the Developer Enrollment Fee per kW shall increase by 2% annually beginning on the first anniversary of the date the first CBRE Project achieves commercial operations. Submittal of an additional Proposal for a separate Site would constitute a separate Proposal and require an additional Developer Enrollment Fee.

4.12 Interconnection Requirements Study

Hawaiian Electric will complete Interconnection Requirements Studies (IRS) for the Final Award Group to assess the costs of system upgrades necessary to integrate the Projects into the Hawaiian Electric System. Proposer must be prepared to provide data necessary for the IRS within fifteen (15) days after notification of selection for the Final Award Group, as identified in Appendix P. Failure to provide all necessary data within the time specified is grounds for elimination from the Final Award Group. Proposer will pay for the IRS. The IRS will address, among other things, potential voltage limit violations, limitations on short circuit capability for breakers, identified instability, and power flow issues that may arise with interconnection. The IRS provides information including, but not limited to, an estimated cost for required Interconnection Facilities for a particular Project. Proposer will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. No adjustments to pricing will be permitted as a result of the actual final costs.

Each Proposal in the Final Award Group will require a new IRS, including any Proposal at a Site where an IRS might have been previously performed in connection with other RFPs or proposed PPAs.

4.13 Contract Negotiation Process

4.13.1 Proposers selected for the Final Award Group will be required to indicate, in writing, to the Energy Contract Manager whether they intend to proceed with their Proposals within five (5) business days of being notified by Hawaiian Electric of its intent to enter into contract negotiations. Proposers who elect to remain in the Final Award Group will be required to keep their Proposal valid through the award period.

4.13.2 Hawaiian Electric's goal is to complete contract negotiations within three (3) months of notification of intent to enter into contract negotiations.

4.13.3 The Developer Enrollment Fee of $52/kW AC will be refundable to Proposers that do not proceed to a signed PPA.

4.13.4 The project must meet a guaranteed commercial operation date as stated in the executed PPA. Projects that do not meet these milestones will forfeit their Developer Enrollment Fee of $52/kW AC, in addition to any other remedies available under the PPA.

4.13.5 Hawaiian Electric's parent company, Hawaiian Electric Industries, Inc. has entered into an Agreement and Plan of Merger with NextEra Energy, Inc. ("NextEra Energy") dated December 3, 2014 ("Merger Agreement"). The Merger Agreement provides certain consent rights to NextEra Energy, including the right to consent to Hawaiian Electric entering into a power purchase agreement. Any power purchase agreement negotiated by the Company with selected Proposers will be subject to consent from NextEra Energy prior to execution, per the terms of the Merger Agreement.

4.14 Regulatory Approval of PPA

Any signed PPA resulting from this RFP is subject to PUC approval as described in the Model PPA, including Section 12.3 thereof.

EXHIBIT B
APPENDIX A

Proposer's

Response Package

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix A – Proposer's Response Package

January xx, 2016

Hawaiian Electric

Table of Contents

***Instruction to Proposers*:**

[Hawaiian Electric may elect to use the services of a third-party electronic platform as facilitator of the RFP process, in which case all Proposals and all relevant information must be submitted via the designated platform, as is described in the Final RFP or addenda thereto, and failure to do so may result in disqualification from the RFP process. No paper Proposals will be accepted. If an electronic platform is used, Proposers are requested to observe response structure, file naming convention, RFP documents and submittals, as identified on the platform. The platform will be configured to be as close as possible to the structure of this Appendix A, but formatting on the platform may vary from Appendix A.

All terms used in this Appendix are consistent with the definitions included in the RFP, unless otherwise noted.

Items that are not applicable to a specific Proposer or project type must be clearly marked N/A and a brief explanation must accompany each item so marked.

Proposers must clearly identify all confidential information in their Proposals, as described in more detail in Section 3.9, Confidentiality, of the RFP.

1.0 Commercial Information Requirements

1.1 Required Forms

Proposer must submit an original hard copy of each of the following forms, as well as upload a copy of each of the completed forms.

- Mutual Confidentiality and Non-Disclosure Agreement (Appendix G to the RFP)
- Certificate of Proposal Certification and Non-Collusion (Appendix M to the RFP)

1.2 Proposal Summary / Contact Information

1.2.1 Project Summary

Proposer must provide the following summary information about their Proposal.

- Project Name
- Proposed Commercial Operations Date
- Proposer Entity Name
- Project Site / Location
- Project City or Town
- Proposed Point of Interconnection

1.2.2 Project Contact

Proposer must provide the contact information below for Proposer's primary point of contact.

- Name
- Title
- Address
- Phone Number
- Mobile Phone Number (if different)
- Email Address
- Facsimile Number

1.2.3 Project Characteristics

Proposer must provide the following summary information about their Proposal's characteristics.

- Contract Capacity (MW AC) of generation facility
- Gross and Net MW AC Capability of the generation facility

- Estimated Life of generation facility and interconneciton facilities
- Principal Equipment Manufacturer, and model number of inverters proposed at generation facility
- Principal Equipment Manufacturer and model number of PV modules proposed at generation facility
- Initial Annual Contract Energy (MWh)
- Annual Energy Production (MWh) (if different from ACE)
- Number of inverters
- Rated output of PV modules (kW DC)
- Rated output of inverters (kW AC)
- PV array design characterisitcs (i.e. fixed tilt, multi-axis tracking)
- Annual Capacity Factor
- Annual degradation factor of generation facility and major components (inverters, PV modules)

1.3 Executive Summary of the Proposal

- The Proposer is required to provide an executive summary of the Proposal. The Proposer must include an approach and description of the important elements of the Proposal consistent with, and in the order of, the sections outlined in the Table of Contents included in the Proposer's Response Worksheet. Proposer must provide sufficient information to clearly demonstrate how its Proposal conforms to the eligibility and threshold requirements specified in Sections 4.2, Eligibility Requirements, and 4.3, Threshold Requirements, of the Final RFP.
- Proposer must describe the status of project development activities to date.

Commercial Information Requirements

1.4 Financial / Legal

Proposers are required to provide responses to all questions below. Proposers are required to demonstrate the financial viability of their project. Proposers must provide the following information:

1.4.1 Identification of Equity Participants

- Who are the equity participants in the project (or the equity partners' other partners)?
- Proposer company profile information
    - DUNS Number
    - Dun & Bradstreet Rating
    - Tax ID Number
    - If applicable, was Proposer incorporated/formed in Hawai'i?
    - If applicable, in what year was Proposer incorporated/formed?
    - Is Proposer's principal place of business Hawai'i?
    - Does the Proposer have any government ownership?
    - Certificate of Good Standing from the State of Hawai'i Department of Commerce and Consumer Affairs
- If the Proposer has a parent entity, please answer the questions below about the parent entity.
    - Parent entity profile information
        - DUNS Number
        - Dun & Bradstreet Rating
        - Tax ID Number
        - If applicable, in which state was parent entity incorporated/formed?
        - If applicable, in what year was parent entity incorporated/formed?
        - Is parent entity's principal place of business Hawai'i?
        - Does the parent entity have any government ownership?

1.4.2 Evidence that the Project will be Financed, including assumptions

- How will the project be financed?
- Is there a written commitment from the equity participants? If so, please provide a copy with confidential information redacted if necessary.
- Discuss and/or provide supporting information on any project financing guarantees.

- Does the Proposer envision any conditions precedent to project financing other than execution of the Power Purchase Agreement or any other applicable project agreements and State of Hawai'i Public Utilities Commission approval of the Power Purchase Agreement and other agreements?
    - If yes, please describe such conditions precedent to project financing and Proposer's plan to address them.
- Describe the implication of the Federal Production Tax Credits or Investment Tax Credits (or similar incentives) on the viability of the project.

1.4.3 Proposer's Organizational Structure

- Please provide a description of the Proposer's organizational structure and associated responsibilities on the project from a financial and legal perspective, including any general and limited partners, providers of capital, and percentage interest of each party.

Name of General Partner, Limited Partners, and Other Investors	**Ownership Percentage**
Name 1	
Name 2	
Name 3	
Name 4	
Total	

1.4.4 Approach and Plan for Project Financing

- Provide a description of the financing plan for the project, including construction and term financing. The financing plan must address information contained in the pro forma economic model (requested in Section 3.0 CBRE Program Support and Pricing Information of this Appendix A), such as:
    - The project's projected financial structure;
    - Expected sources of debt and equity financing;
    - Estimated capital cost; and,
    - Evidence the project is financeable.
- In addition, the financing plan must address the estimate of development costs and financing of development costs. The Proposer must identify and estimate the elements of the development cost. <u>All Proposers are required to provide this information</u>.
- Proposer is required to state to the best of its knowledge, and provide supporting information to allow Hawaiian Electric to verify such conclusion, that its Proposal will not (1) trigger a capital lease

accounting treatment under FASB ASC 840 or (2) result in a Developer being a Variable Interest Entity (as defined in FASB ASC 810) that would trigger consolidation of such party's finances onto Hawaiian Electric's financial statements under FASB ASC 810.

1.4.5 Project Financing Experience of the Proposer

- Provide documentation illustrating the experience of the Proposer in securing financing for projects of similar size and technology. For each project provide the following information:
    - Project name and location
    - Project type and size
    - Date of construction and permanent financing
    - Commercial Operations Date
    - Proposer's role(s) in financing of project.
    - Interconneciton voltage and description of interconnection facilities.
    - Off-taker, term of interconnection agreement, financing structure, and major pricing terms.

1.4.6 Evidence of the Proposer's Financial Strength

Hawaiian Electric reserves the right to request additional financial documents and bank references, as needed.

- Provide evidence that the Proposer has the financial resources and financial strength to complete and operate the project as planned.
- Please submit Proposer's audited annual reports containing the balance sheets, income statement, and statement of cash flows for the three (3) most recent fiscal years and quarterly report for the most recent quarter ended.
- Please list the current credit rating from Standard & Poor's and Moody's for the Proposer, affiliates, partners, and credit support provider.

1.4.7 Evidence that the Proposer can Provide the Required Securities

- The Proposer must demonstrate its ability (and/or the ability of its credit support provider) to provide the required securities, including its plan for doing so (including type of security, sources of security and a description of its credit support provider).
- Provide a description of any current credit issues regarding the Proposer or affiliate entities raised by rating agencies, banks, or accounting firms.
- Proposers must agree to provide Development Period Security and an Operating Period Security as set forth in the Model PPA.

1.4.8 Disclosure of Litigation and Disputes

- Proposers must disclose any litigation, disputes, and status of any lawsuits or dispute resolution related to projects owned or managed by them or any of their affiliates.

1.4.9 Financial Pro Forma

- Provide pro forma income and cash flow statements conforming to Generally Accepted Accounting Principles for the project for the term of the proposed Power Purchase Agreement in the format of the PV Facility Pro Forma Cash Flow 2.4 Microsft Excel spreadsheet included as Attachment 1 to this Appendix A.. These statements are more detailed and are in addition to the economic information requested in Section 3.0, CBRE Program Support and Pricing Information Requirements of this Appendix A.

1.5 Redline Version of the Form Agreements

To the extent a Proposer takes any exceptions to the form agreements applicable to its Proposal, such Proposer is required to upload redlined versions in Microsoft Word format of the applicable documents. This includes the Model Power Purchase Agreement (PPA) (Appendix B to the Final RFP)

In the event the Proposer does not upload redlines of the applicable form agreements, Hawaiian Electric will assume the terms in such form agreements are agreeable to the Proposer.

1.6 Environmental and Land Use Permits

This section addresses environmental, social, and land use issues associated with project(s) siting and operations. The purpose of this section is to identify environmental, social, and land use planning, permitting, and approval requirements, long and short term impacts, and measures that may be required to mitigate these impacts.

- Identify and explain any State Land Use Reclassifications necessary for Proposal siting and operations, and the associated processing/approval timeframes.
    - Provide a description of the current or previous use of the site
- Identify all required discretionary and non-discretionary land use and environmental permits and approvals required for development, financing, construction and operation of the Proposal, including but not limited to zoning changes, Environmental Assessments and/or Environmental Impacts Statements.
    - Provide a listing of Federal, State, and Local agencies and authorities having jurisdiction over the issuance of such permits and approvals.
- Proposers must provide a preliminary environmental assessment of the site, which includes the identification and analysis of potential short and long term impacts associated with the Proposal – including direct, indirect, and cumulative impacts associated with development, construction, operation, and maintenance. If alternatives have been or will be considered, those should be discussed. The assessment shall also include Proposer's short and long term plans to mitigate such impacts and an explanation of the mitigation strategies for, but not limited to, each of the major environmental areas as presented below:
    - Soils
    - Topography and geology
    - Solid waste
    - Hazardous waste
    - Natural habitats and ecosystems

- Flora/Fauna/vegetation
- Other natural resources

- Proposers must also provide a preliminary assessment of other potential short and long term impacts resulting from the Proposal – including direct, indirect, and cumulative impacts associated with development, construction, operation, and maintenance. The assessment shall include an identification and analysis of impacts, including, but not limited to, the areas listed below. If alternatives have been or will be considered, those should be discussed. The assessment shall also include an explanation of mitigation strategies for identified impacts. Where further assessment, permits, and approvals are required, those should be identified, along with the agency with jurisdiction over any required permits or approvals.
  - Existing and surrounding land uses
  - Area businesses and residences
  - Cultural / Historical resources[1]
  - Archaeological sites
  - Aesthetic/visual
- Proposers are required to provide conceptual plans for siting, studies/assessments, permits, and approvals, including a schedule which identifies the sequencing of activities and critical path.
  - A narrative explaining the basis for the assumed timeline shall also be provided. In addition, Proposers shall also describe situations where a planning, permit, or approval process for one aspect of the total project may influence the timing for other aspects of the project (*e.g.,* a case where one permit is contingent upon completion of another permit or license).

1.7 Community Outreach and Community Benefits Plan

- Identify a detailed plan for community outreach and communications to gain support for or acceptance of the proposed project, which must include the Proposer's plan for working with the community during project development and construction to provide project information and address local or community issues. The plan should address, but not be limited to, the following items:
  - Identify communities and other stakeholders that may be affected by the proposed project. How will they be affected? What mitigation strategies will the Proposer implement?
  - How will affected communities and the general public be informed about the proposed project? Describe, at a minimum, the frequency of communication, source of information, and outlets utilized.

[1] 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. In seeking certain state land use approvals, Hawai'i law (HRS § 343) requires parties to 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. Proposers must provide as much information as possible to allow Hawaiian Electric to understand the considerations.

Commercial Information Requirements

- Will the affected communities and the general public be given an opportunity to provide the developer with feedback and comments on the proposed project? What will the developer do with the feedback and comments received?

- Provide any documentation of local community support or opposition including any letters from local organizations, newspaper articles, or communications from local officials.
- Provide the long term outreach plan for maintaining information flow to stakeholders and communities.
- Identify anticipated or negotiated investment in the community and other community benefits that Proposer proposes to provide in connection with the project.
- Proposers must provide an estimate of the value in dollars of the community benefits proposed by it (including the cost to Proposers providing the benefits and details to support how those costs were developed).

2.0 Technical Information Requirements

2.1 Project Operational Requirements – Generation

Proposers must provide the following information regarding the project operational parameters for proposed renewable generation. If not applicable to the specific technology, the Proposer must respond with an N/A.

2.1.1 *Design and Operating Information*

- Provide a project design description, including configurations and maps
- Identify the Initial Annual Contract Energy (as defined in the Model PPA (Appendix B to the RFP)), as well as the annual energy production capability of the project
- Provide an hourly production profile for a typical year of mature operations, including the associated assumptions and sources of the profile

2.1.2 *Auxiliary Power Information*

- Proposer must list the maximum auxiliary power requirements for:
    - Start-up
    - Normal Operations (from generator)
    - Normal Operating Shutdown
    - Forced Emergency Shutdown
    - Maintenance Outage

2.1.3 *Capability of Meeting Performance Standards*

The Proposer shall confirm that the proposed generation facility can comply with the Performance Standards contained inSection 3 of Appendix B to the Model PPA (Appendix B to the Final RFP), as well as in RFP Section 2.2, Perfromance Standards. To the extent the Performance Standards cannot be achieved, the Proposer must specify and provide an explanation of why they cannot be met. Alternately, provide the Proposer's ability to exceed the Performance Standards and explain with detail and basis.

2.1.4 *Coordination of Operations*

- Provide a description of the control facilities required to coordinate generator operation with and between the Hawaiian Electric System Operator and the Hawaiian Electric System.
    - Provide a description of the equipment and technology used to implement curtailment and communicate with Hawaiian Electric regarding curtailment.
- Include a description of the control and protection requirements of the generator and the Hawaiian Electric System.

2.2 Engineering and Technology

This section includes questions pertinent to the engineering design and project technology. Proposers must provide sufficient detailed information to inform Hawaiian Electric about the specific technology or equipment including the track record of the technology and equipment The preliminary engineering plan must include the following information, at a minimum.

- Name of principal engineering firm responsible for generation facility major equipment considered or expected to be used
- Equipment vendors selected/considered
- Operational control of facility (SCADA/AGC/Power quality factors (VAR, LVRT, ramping capabilities, etc.))
- Provide a design description of control and equipment strategy to accommodate intermittent generation.
- Provide name of expected key equipment suppliers and information that illustrates and discusses the proposed equipment and technology, lead times for delivery to Hawai'i to support commercial operation, and suppliers' prior experience with equipment operation in isolated, tropical island environments.
- Please identify similar equipment by the same manufacturer that are presently in commercial operations, including the number installed, location of installation, installed capacity, estimated generation, and operating information including number of years in operation, capacity factors, outage information and other relevant data to confirm the viability of the technology in Hawai'i.

2.3 Project Management / Experience

Proposers are required to demonstrate project experience in Hawai'i and management capability to successfully develop and operate the project proposed. Hawaiian Electric is interested in a project team that has demonstrated success in projects of similar type, size, and technology and can demonstrate an ability to effectively work together to bring the project to commercial operation in a timely fashion.

- 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), provide statements that list the specific experience of the firm in: developing, financing, designing, constructing, owning, operating, and maintaining renewable energy generating facilities, or other projects of similar type, size and technology, and any evidence that the project participants have worked jointly on other projects.
    - Proposer must demonstrate the project team's experience and capabilities in successfully developing and executing other similar projects in isolated tropical utility systems similar to Hawaiian Electric.
- Identify those member(s) of the team the Proposer is submitting to meet the experience Threshold Requirements and demonstrate the member(s) firm commitment to provide services to the Proposer.
- 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

- 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.
- Provide a listing of all photovoltaic, wind or other renewable energy 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:
    - Name of the project
    - Location of the project
    - Project type, size and technology
    - Commercial operation date
    - Description of the project
    - Description of successfully executed Long Term PPA, including identifying the term and parties
    - Capacity factor, availability factor, and reliability of the generation unit, for the past three years
    - Offtaker (if applicable)
    - Current ownership
    - A minimum of four references, with the contact name, current addresses, telephone number, and relationship with the Proposer and with the related project
    - Schedule duration for execution and whether final execution time was consistent with initial target schedule (if not, identify why and identify duration of delay)
    - Identify key outside contractors used in project execution
    - Describe significant problems encountered in development and execution and any "lessons learned" and how these will be applied to the Proposer's current Proposal
    - Describe any operational issues since Commercial Operations Date such as deratings, extended outages, equipment failures, etc. Include in the description length of time asset production was impacted, owner response plan and execution, and current status of project
- With regard to the Proposer's project team, identify and describe the entity responsible for the following (if known) and/or the current status of these relationships:
    - Technology Supplier
    - Construction Period Lender
    - Operating Period Lender

- Operating and Maintenance Contractor
- Financial Advisor
- Environmental Consultant
- Public Relations Advisor
- Owner's Engineer
- EPC and/or Construction Contractor
- Quality Assurance Manager
- Transmission Consultant
- Legal Counsel

2.4 Siting

This section of the Proposer's Response Worksheet addresses siting and right-of-way issues.

- Demonstrate how the Proposer has met the Threshold Site Control, identified in RFP Section 4.3 Threshold Requirements.
- Provide a Tax Map Key ("TMK") map of the Generator site that clearly identifies the location of the site, the total acreage, the Point of Interconnection, and the relationship of the site to other local infrastructure. In addition to providing the required map, provide a site layout plan which illustrates the proposed location of all equipment and facilities on the site.
- Provide a detailed description including site sketches of how the facility will be interconnected to the Hawaiian Electric System (above-ground or underground) and a description of the rationale for the interconnection route.
- Identify whether the site and interconnection route are near cultural resources and implications for project completion and mitigation strategies.
- Evidence of right to use site.
    - Does the project have a right to use the site (e.g., by virtue of ownership, or by option agreement on the land rights obtained from the owner)?
    - Does the project need any entitlements to use the site?
    - Include any relevant documentation (e.g., option agreement on the site, or evidence of actual lease or purchase of site).
- Provide evidence that the site and interconnection route are properly zoned. If they are not currently zoned properly, identify present and required zoning and/or land use designations and provide a permitting plan and timeline to secure the necessary approvals.

- 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 and easement acquisition, and describe the plan for securing the necessary rights-of-way, including the proposed timeline.
- Provide location of and description of substations relative to the Point of Interconnection, meteorological tower, and communications systems.

2.5 Energy Resource Plan

Proposers are required to provide an energy resource for their project, which provides Hawaiian Electric with the necessary information to conduct an evaluation of the project's proposed generation profile consistent with the energy resource utilized by the Proposer. Proposers must therefore provide detailed information demonstrating that the operating performance and conditions proposed are supported by the availability of the solar resource. Proposers must provide energy profiles, performance curves, energy resource studies completed by independent consultants, and/or other relevant supporting documentation.

- Provide an assessment of the available solar resource and the projected production profile for the project, as well as the proximity to the site, as applicable. Identify anticipated generation by hour and month for at least a one-year period, expected monthly capacity factors, and describe any trends in generation capability over time. Also describe the methodology and in-house or consulting expertise used to arrive at the generation estimates.
- Provide a forecast of the available electrical output capacity by month for a typical year including consideration of the effects of ambient temperature on plant performance.
- Provide a description of the Proposer's real-time resource data and approach to delivering such data to Hawaiian Electric to support Hawaiian Electric's ability to produce a real-time forecast for operations as well as a day ahead system forecast and hourly forecasts for all variable generation facilities on Hawaiian Electric's System.
    - Provide a description of equipment, as well as plans to install and maintain such equipment, necessary to provide sufficient data to Hawaiian Electric to allow Hawaiian Electric to produce accurate forecasts.
- If a Proposer expects to produce any product in addition to the electrical output to be sold to Hawaiian Electric, please identify the product and the expected annual level of output.
- Description of sources of insolation data. Provide any resource assessment studies prepared by independent consultants.
- Identify number of years of solar data and its accuracy.
- Provide a description and summary of all collected solar data for the proposed site supporting the project's expected capacity factor and operations.
- Indicate where the data was collected, how long data was collected and its proximity to the proposed site.
- In addition to the above, if offering solar thermal, provide the number of hours of storage available.

2.6 Project Schedule and Construction Execution Plans

- Proposers are required to provide a project schedule in MS Project 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 permitting, interconnection, and all other important elements outside of the direct construction of the project. For each project element, list the start and end date. 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 Hawaiian 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.
    - Identify the elements on the critical path. The schedule must include, at a minimum, facility contracts, construction, siting, environmental permitting (anticipated submittal and approval), cultural resource implications and mitigation plans, community outreach plan, energy resource assessment, financing, engineering, procurement, local permits and any other requirements that could influence the project schedule, and the Commercial Operations Date. The project schedule must include dates for submittal of engineering and design for review and approval, all construction management events and construction and applicable reporting milestone events specified in the Model PPAand/or other agreements.
    - Proposer must provide the construction execution strategy. This must include identification of contracting/subcontracting plans, modular construction, safety plans[2], quality management plan, labor availability, likely manufacturing sites and procurement plans, and similar projects where these construction methods have been used by the Proposer.

[2] 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.

Generator Proposal

- Provide a scope of work of all required interconnection facilities, consistent with the provisions included in Attachment B and Attachment G to the Model PPA (Appendix B to the RFP)
- Single-Line Diagram – The Proposer shall provide preliminary single-line diagram(s) for the generation and interconnection facilities as described below.
    a. The single-line diagram(s) should include:
        i. Transformers - for main and generator step up transformer(s), show:
            1. Transformer voltage and MVA ratings.
            2. Transformer impedance(s).
                a. Transformer winding connections and grounding. If neutrals are grounded through impedance, show the impedance value.
        ii. Breakers:
            1. Proposed technology
            2. Voltage, continuous current and interrupting capability ratings.
            3. The trip speed (time to open)
        iii. The protective relaying and metering for the generators, buses, and all other main substation equipment.
        iv. For the potential transformers, indicate the type, quantity, ratio, and accuracy rating.
        v. For the current transformers, indicate the type, quantity, ratio, and accuracy rating, and thermal rating factor.
        vi. 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.
        vii. The generator(s) voltage, impedances, and MVA ratings.
        viii. The generator grounding method. If the generator is not solidly grounded, provide the grounding method details and equipment ratings.
    b. Forecasting and monitoring equipment and communication interface
        i. Site map
        ii. Power schematic diagram(s)
        iii. Communication interface block diagram, including primary and backup communication
- Proposer shall provide a plan map of the facilities with location identified by the O‘ahu Tax Map Key map, preliminary footprint dimensions and layout, renewable generator interconnection, as well as the Hawaiian Electric substation proposed for interconnection to the Hawaiian Electric System.

- Provide a description of the Proposer's interconnection plan including routing and a description of overhead (above-ground) and/or underground facilities, including elevations/depth, style of tower or description of buried cable construction, materials and protection,.
- Provide a list of the major materials for the proposed interconnection plan, including:
    - For new lines – poles, conductors, cables, cable splices, and cable terminators;
    - For new switching station(s) - circuit breakers, bus conductors, and protective relays; and,
    - For communication facilities - fiber optic cables and microwave equipment.
- Proposers must identify the time requirements estimated to interconnect the project to the Hawaiian Electric System.

2.7 Operation and Maintenance

Operations and maintenance is as an important element of successful project operations. Hawaiian Electric is interested in projects that can demonstrate that the maintenance plan, level of funding and calculation assumptions for determining the Proposer's CBRE Partipcant O&M Fee, and any other mechanism for funding that will ensure reliable operations during the term of the contract.

- Provide an operation and maintenance plan for the project that demonstrates the long term operational viability of the proposed project. The plan must include a discussion of the staffing levels proposed for the project and location of such staff, the expected role of the Proposer (Owner) or outside contractor, scheduling of major maintenance activity, maintenance funding levels, and the plan for testing equipment. Also state whether the Proposer would consider 24-hour staffing, explain how this would be done, and identify any cost impacts that are not included in the Proposal.
- 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.
- Indicate whether or not the project sponsor is willing to coordinate the maintenance schedule for the project with the annual maintenance schedule of Hawaiian Electric.
- Proposer must provide a staffing plan and identify any issues that may need to be considered or may limit coordination, in addition to mitigation strategies for those issues.
- Describe the status of the Proposer in securing any operation and maintenance agreements or contracts. Include a discussion of the Proposer's plan for securing a long-term operation and maintenance contract.
- Provide examples of the Proposer's experience with operation and maintenance services for other similar projects.

3.0 CBRE Program Support and Pricing Information

3.1 PPA Pricing Information

- PPA Energy Payment Rate ($/kWh)
- Identify Annual Contract Energy (MWh) – note, this value should not be the same in every year of the contract term

Contract Year	Contract Energy (a)
1	
N	
22	

To the extent that the Proposer's pricing proposal is based on equipment and contract pricing that is significantly higher than prices recently seen in mainland markets, the Proposer is requested to justify the higher price in their Proposal for a Hawai'i-based project. Please identify specific factors that contribute to any differences in prices or costs for Hawai'i versus the mainland.

3.2 CBRE Program Pricing Information

- Partcipant Upfront Fee ($/kW)
- Participant O&M Fee ($/kWh)
- Option to increase CBRE Program Allocation – Proposals are required to allocate a minimum of 29% of their energy output to be purchased by Participants through the CBRE program. However, bidders are encouraged to identify an increased portion of the project's output (not to exceed 75%) that could be allocated to CBRE Participants if program demand is greater than available capacity.

PV Facility Pro Forma Cash Flow 2.4

Inputs: Project assumptions to be inserted in cells with white backgrounds. If necessary, please clearly note any changes to values in cells without white backgrounds

Plant Design	
Plant Capacity, MWp (DC)	0.00
Plant Capacity, MWe (AC)	0.00
Production in Yr 1, kWh (AC)	0
Annual Degradation	0.00%
Percent Production Curtailed	0.00%
Net Yr 1 Production, kWh (AC)	0
Plant Life, Years	0
Tracking	Choose one...
PV Module Type	Choose one...
Inverter Type	Central

PPA Price	
PPA Price, $/kWh	0.0000
PPA Term, Years	0
PPA Escalator	0.00%
PPA Escalation Term, Years	0

*If you use the Other EPC Cost category, please describe what it represents below:

EPC Costs	$/Wp	$
Module	$0.00	$0
Inverter	$0.00	$0
Structural BOS		
Module Racking	$0.00	$0
Tracking Structures	$0.00	$0
Foundations	$0.00	$0
Electrical BOS		
Electrical Equipment	$0.00	$0
Wiring	$0.00	$0
Labor		
Structural	$0.00	$0
Electrical	$0.00	$0
Design/Eng./Proj. Mgmt.	$0.00	$0
Civil	$0.00	$0
Miscellaneous		
Substation upgrades	$0.00	$0
Medium Voltage Gear	$0.00	$0
SCADA	$0.00	$0
Fencing	$0.00	$0
Other (please define)*	$0.00	$0
EPC Margin	$0.00	$0
Total EPC	$0.00	$0
Total Installed Cost	#DIV/0!	#DIV/0!

Soft Costs	$/Wp	Depreciation and ITC Basis	$
Permitting	$ -	Choose one...	$0
Site Grading and Land Preparation	$ -	Choose one...	$0
Legal			$0
Land Option, Lease and/or Purchase	$ -	Choose one...	$0
Interconnection Agreement	$ -	Choose one...	$0
PPA Agreement	$ -	Choose one...	$0
PUC Agreement	$ -	Choose one...	$0
Tax Advice	$ -	Choose one...	$0
Permitting	$ -	Choose one...	$0
Project Management			$0
Project Origination	$ -	Choose one...	$0
Due Diligence Reports	$ -	Choose one...	$0
Direct Development	$ -	Choose one...	$0
Interconnection Costs			$0
Interconnection Upgrades	$ -	Choose one...	$0
Communication and Monitoring	$ -	Choose one...	$0
Interconnection Studies	$ -	Choose one...	$0
Subtotals	0% $ -	In Basis	$0
	0% $ -	Out of Basis	$0
Total	0% $ -		$0

Operating Expenses (OPEX)	
Insurance	
Year 1 Amount	$0
Annual Escalation	0.00%
Land	
Acres Leased or Purchased	0.00
Initial Lease Rate, $/Acre	0
Lease Rate Escalation	0.00%
Land Purchase Price, $/Acre	0
Electricity Costs (Parasitic Load)	
Year 1 Amount	$0
Annual Escalation	0.00%
Auditing/Tax Return Fees	
Year 1 Amount	$0
Annual Escalation	0.00%
Ongoing Interconnection O&M	
Percentage of HECO Upgrades, %/month	0.00%
Year 1 Amount (calculated)	$0
Annual Escalation	0.00%
Operation and Maintenance	
Year 1 Amount, $/MWp	$0
Annual Escalation	0.00%
Year of One-time Cost	0
One-time Escalation	0.00%

Property Tax	
Property Tax Rate, % of total installed cost	0.00%
Property Tax Annual Decline	0.00%
HECO Performance Security	
Operating Period Security Amount, $/MWe	0
Form of Operating Period Security	Choose one...
Operating Period Security LoC Rate	0.00%
Development Period Security Amount, $/MWe	0
Form of Development Period Security	Choose one...
Development Period Security LoC Rate	3.50%

Salvage and Land Value, Removal Costs	
Removal Cost, % of total installed cost	0.0%
Salvage Value, % of total installed cost	0.0%
Land Sale	
Land Sale Price, $/Acre	0
Year of Sale	0

Tax, Depreciation, Amortization, and Incentives	
Federal Income Tax and Incentives	
Federal Income Tax Rate	0.0%
Federal Investment Tax Credit (ITC) Rate	0.0%
Federal ITC Amount	$0
State Taxes and Incentives	
Hawaii Income Tax Rate	0.00%
HI Refundable Tax Credit, % of Tot. Instal. Cost	0.00%
Hawaii Refundable Tax Credit Amount	#DIV/0!
Hawaii General Excise Tax	0.00%
Depreciation and Amortization (applies to federal and state taxes)	
Depreciation Basis Reduction, % of Fed. ITC	0.0%
Depreciation Basis (5-yr MACRS)	$0
Amortization of Out-of-basis Costs, Yrs	0

Results: Project Cash Flows. Do not change any values.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30
ENERGY PRODUCTION AND REVENUE																															
Net Annual Energy Production (kWh)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PPA Electricity Price ($/kWh)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Revenue from PPA Energy Sales		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EXPENSES																															
O&M		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Property Taxes		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Insurance		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Site Lease		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Electricity Costs (Parasitic Load)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Audit/Tax Return Services		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ongoing Interconnection O&M		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Expenses		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TAX, DEPRECIATION AND AMORTIZATION																															
MACRS Depreciation Schedule (Half Year Convention)		20.0%	32.0%	19.2%	11.5%	11.5%	5.8%																								
Depreciation of Fixed Assets = EPC + In Basis Soft Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Amortization of Out of Basis Soft Costs		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Operating Income, EBITDA		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Margin = Operating Income÷ Revenue		no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin	no margin
Taxable Income, EBIT		$0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HI General Exise Tax		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HI Income Tax Liability before Refundable Tax Credit		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HI Income Tax after Refundable Tax Credit: Benefit (Payment)		#DIV/0!	#DIV/0!	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Federal Income Tax: Benefit (Payment)		-	#DIV/0!	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net Income		#DIV/0!	#DIV/0!	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROJECT BENEFITS																															
Depreciation and Amortization		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Salvage Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Land Value		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PROJECT COSTS																															
HECO Development Security	-																														
HECO Operating Security	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Land Procurement	-																														
Removal Cost		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Installation Cost	#DIV/0!																														

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix B – Model PPA

January xx, 2016

This document has been provided separately in this filing.
(See Exhibit C)

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix C – Model Customer Agreement

January xx, 2016

This document has been provided separately in this filing.
(See Exhibit E)

EXHIBIT B

APPENDIX D

Rule No. 19 Tariff

Interconnection and Transmission Upgrades

Sheet No. 40
Effective November 5, 2007

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.

Sheet No. 40A
Effective November 5, 2007

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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").

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

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.

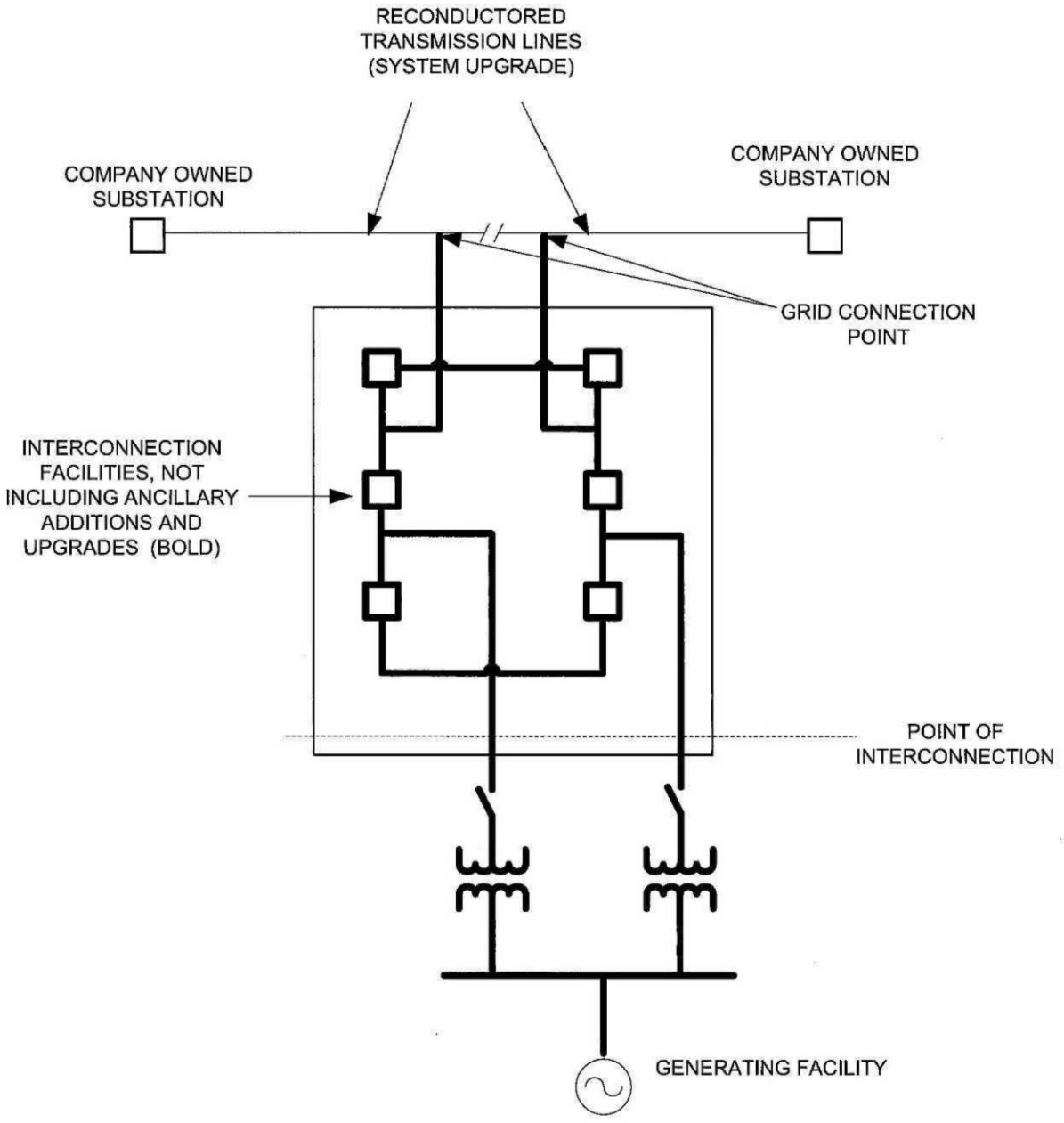
b. In its IRP process, the Company may propose to pay for Interconnection Facilities between the Point of Interconnection and the Grid Connection Point, in order to encourage the development of Renewable Energy Facilities.

Sheet No. 40J
Effective November 5, 2007

RULE NO. 19 - Continued

Interconnection and Transmission Upgrades

Attachment A



HAWAIIAN ELECTRIC COMPANY, INC.

Docket No. 03-0372, D&O No. 23799, Dated November 5, 2007
Transmittal Letter Dated November 9, 2007

EXHIBIT B

APPENDIX E

Rule No. 14 Tariff

Service Connections and Facilities on Customer's Premises

RULE No. 14 (Continued)

Service Connections and Facilities on Customer's Premises

H. INTERCONNECTION OF DISTRIBUTED GENERATING FACILITIES WITH THE COMPANY'S DISTRIBUTION SYSTEM

1. Interconnection Standards

   a. Distributed generating facilities interconnected to the Company's electric system shall satisfy the Company's Interconnection Standards.

   b. The Company's Interconnection Standards are included as Appendix I to Rule 14.

2. Definitions

   For purposes of this Rule 14H, the following definitions shall apply:

   a. "Distributed Generation Facility": A Generating Facility located on a Customer's premises that is interconnected with the Distribution System.

   b. "Distribution System": All electrical wires, equipment and other facilities at the distribution voltage levels (such as 25kV-HECO only, 12kV, 4kV or 2.4kV) owned or provided by the utility, through which the utility provides electrical service to its customers.

   c. "Generating Facility": Customer or utility-owned electrical power generation that is interconnected to the utility.

   d. "Interconnect" or "interconnected" or "interconnection": The physical connection of any Distributed Generating Facility to the Distribution System, including the facilities required to provide the electric distribution service to a Customer, using electrical wires, switches, and related equipment located on either side of the point of common coupling as appropriate to their purpose and design to allow the physical connection of a Distributed Generating Facility to the Distribution System.

Docket No. 2014-0192; D&O No. 33258 filed October 12, 2015,
Transmittal Letter dated October 19, 2015.

e. "Momentary Parallel Operation": Parallel Operation for a duration less than 100 ms.

f. "Parallel Operation": The operation of a Distributed Generating Facility, while interconnected, such that customer load can be fed by the Distributed Generating Facility and Distribution System simultaneously.

3. Interconnection Agreement

a. Customers, on whose premises Distributed Generating Facilities that are interconnected to the Company's Distribution System are located, shall complete and execute Standard Interconnection Agreement with the Company provided in Appendix II or Appendix II-A of this Rule, or an Application for Non-Export Distributed Generation Facilities (Momentary-Parallel Operation) provided in Appendix II-V of the Rule, or other Company-approved application for interconnection of a Generating Facility subject to Rule 14H, and obtain Company approval of such interconnection application prior to interconnecting the Distributed Generating Facilities to the Company's Distribution System, or within one hundred fifty (150) days after the effective date of this Rule if the distributed generating facilities are already operating in parallel with the Company's system as of such date, provided that following the expiration of such one hundred fifty (150) days period, Customers shall have thirty (30) days to file a request for an extension of such one hundred fifty (150) days period with the Commission for good cause shown. The Company shall not deem the Customer to be in violation of Rule 14H while the Customer's request for extension of time to complete and execute the Standard Interconnection Agreement is under consideration by the Commission. Nothing in this provision shall affect the Company's right to refuse or discontinue service as provided in Rules 7.A.1 and 2.

b. Distributed Generating Facilities may be interconnected to the Company's Distribution System in accordance with the terms and conditions of the Standard Interconnection Agreement or other interconnection agreement approved by the Company.

c. The Standard Interconnection Agreement does not apply when (1) the Customer enters into a power purchase agreement for the sale to the Company of electric energy generated by the Distributed Generating Facility, or (2) the Customer enters into a standard agreement providing for net energy metering pursuant to Rule No. 18, (3) the customer submits an application for Non-Export Distributed Generation Facilities (Momentary-Parallel Operation) provided in Appendix II-B of this Rule, or (4) the Customer enters into any other standard interconnection agreement for a Generating Facility that is governed by Rule 14H. A customer that has an executed interconnection agreement with the Company as of the effective date of this rule shall not be required to enter into the Standard Interconnection Agreement until such time as the existing interconnection agreement is terminated.

d. Customers with Distributed Generating Facilities that are eligible for net energy metering pursuant to Chapter 269 of the Hawaii Revised Statutes, shall follow the rules and requirements set forth in Rule No. 18 for Net Energy Metering and this Rule No. 14H, as applicable.

e. Distributed Generating Facilities that incorporate the use of an energy storage device, e.g. battery storage, shall obtain an interconnection review by the Company pursuant to this Rule 14H and satisfy the Company's Interconnection Standards.

4. Interconnection Process

a. Customer requests to interconnect Distributed Generating Facilities to the Company's Distribution System under the Standard Interconnection Agreement provided in Appendix II or Appendix II-A, or other

Company-approved application for interconnection of a Generating Facility subject to this Rule, will be processed in accordance with the procedures in the Interconnection Process Overview, which is included in Appendix III of this Rule.

b. Distributed Generating Facilities that are interconnected but will not operate in parallel with the Company's Distribution System, are not subject to the interconnection review process under this Rule 14H except that customer shall register such Distributed Generation Facilities by completing and submitting an Application for Non-Export Distributed Generation Facilities provided in Appendix II-B to this Rule 14H. Such registration shall satisfy the Customer's notice requirements set forth in Tariff Rule 3B (Change in Customer's Equipment Or Operations) and is required for purposes of determining potential load that the Company may be required to serve.

c. Generators that are not interconnected with the Company's Distribution System are not subject to the interconnection review process under this Rule 14H and are not required to be registered with the Company.

d. The Interconnection Process Overview addresses the steps in the interconnection process, the technical review process, the need for additional study, and the resolution of disputes.

APPENDIX I
Distributed Generating Facility Interconnection Standards
Technical Requirements

The following interconnection standards are intended to provide general technical guidelines and procedures to facilitate the interconnection and parallel operation of distributed generating facilities with Hawaiian Electric Company, Inc.'s (HECO, Company or utility) electrical distribution system. If there is a conflict between the technical specifications set forth in this Appendix I with any technical specifications set forth elsewhere in HECO's Distributed Generating Facility Interconnection tariff, the specifications of this Appendix I shall prevail. The specific characteristics or needs of each distributed generating facility may reduce or increase its interconnection requirements. The degree of technical review required for a request for interconnection, and the extent to which an Interconnection Requirements Study (IRS) will be needed, will depend on factors such as the size of the generating facility, the type of technology and the point on the utility's system at which the generating facility will be interconnected. (See Interconnection Process Overview, Appendix III.) These technical interconnection requirements have been established to maintain safety, reliability, and power quality standards for all utility customers and personnel under the objectives described below:

Objectives of Good Interconnection Practice

- **Safety** – To protect the safety of utility personnel, utility customers, and the public.
- **Reliability** – To maintain the reliability of the utility system for all utility customers.
- **Power Quality** – To provide for acceptable power quality[1] and voltage regulation on the utility system and for all utility customers.
- **Restoration** – To facilitate restoration of power on the utility system.
- **Protect Utility and Customer Equipment** – To protect utility and customer equipment during steady state and faulted system operating conditions.
- **Protect Generating Facilities** – To protect generating facilities from operation of utility protective and voltage regulation equipment.
- **Utility System Overcurrent Devices** – To maintain proper operation of the utility system's overcurrent protection equipment.
- **Utility System Operating Efficiency** – To ensure operation at appropriate power factors and minimize system losses.

[1] "Acceptable" power quality is power delivered to customers that does not impair operation of the customers' equipment or cause visible light flickering due to voltage fluctuations under normal operating conditions. One element of power quality is voltage flicker, which is a function of the magnitude of voltage fluctuation and the frequency at which the fluctuation occurs. Voltage flicker is described in Section 4.n. of this Appendix I.

Consistency with IEEE Standards

These technical interconnection standards are based on the requirements of IEEE[2] 1547-2003 *Standard for Interconnecting Distributed Resources with Electric Power Systems*. HECO intends to maintain consistency between its requirements for interconnection of distributed generating facilities and IEEE interconnection standards to the extent feasible, considering the specific design and operating requirements of HECO's electric power system.[3] Except as otherwise provided herein, HECO will evaluate all future revisions to IEEE standards directly related to interconnection of distributed generating facilities, if any, and update its Distributed Generating Facility Interconnection Standards Technical Requirements accordingly. If, as a result of reviewing such revised or new IEEE standards HECO determines that an update to its Rule 14H is required, HECO shall file a request with the Commission to modify its interconnection tariff. If, as a result of reviewing such revised or new IEEE standards HECO determines that an update to its Rule 14H is not required, HECO will provide a written explanation of its determination in its Rule 14H annual report to the Commission. HECO will also provide a written explanation of its determinations concerning IEEE distributed generation interconnection standards to interested parties upon request, or will make such information available on a publicly accessible website.

Customers are encouraged to review and discuss these technical interconnection standards with the utility before proceeding with their design and procurement of distributed generating facility equipment.

[2] IEEE – Institute of Electrical and Electronic Engineers.
[3] IEEE 1547-2003 does not address planning, designing, operating, or maintaining the area electric power system (IEEE 1547-2003, Section 1.3).

Table of Contents

1. Definitions

a. Active Anti-Islanding Scheme: A control scheme installed with the generating facility that prevents the formation of an unintended island by accelerating the drift in voltage and/or frequency to the respective trip points when the utility is not connected.

b. Advanced Inverter: A Generating Facility's inverter that performs functions that when activated, can autonomously contribute to grid support during excursions from normal operating voltage and frequency system conditions by providing: dynamic reactive/real power support, voltage and frequency ride-through, ramp rate controls, communication systems with ability to accept external commands and other functions.

c. Clearing Time: The time between the abnormal voltage being applied and the generating facility ceasing to energize the utility distribution system.

d. Continuous Operation: The Generating Facility operates indefinitely without tripping. Any functions that protect the Advanced Inverter from damage may operate as needed.

e. Customer insurance coverage: Consistent with Appendix III, Section 5, the Customer shall maintain insurance coverage or be self insured against risks arising under the interconnection agreement. Proof of Customer Insurance Coverage will be included as Exhibit D to an interconnection agreement entered between the Company and the Customer.

f. Dedicated Transformer: A transformer that provides electrical service to a single customer.

g. Distribution System: All electrical wires, equipment, and other facilities at the distribution voltage levels (such as 25kV-HECO only, 12kV, or 4kV) owned or provided by the utility, through which the utility provides electrical service to its customers.

h. Direct Transfer Trip: Automatic remote trip of a generating facility's circuit breaker or interrupting device by means of a communication channel that is acceptable to the utility.[4]

i. Facility Equipment List: Identifies equipment, space, and/or data at the Generating Facility location to be provided by the Customer for use in conjunction with the Company's Interconnection Facilities. The Facility

[4] Acceptance of the communications channel depends upon the speed of the operation, availability (up time), reliability, security, and type of electrical interface equipment used. The criteria for selecting the type of acceptable communications are the levels of guaranteed priority for restoration response, maintenance, and system upgrades in order to maximize availability, reliability, and security. Other technical communications channel requirements are determined by the manufacturers of the electrical interface equipment used.

Equipment List will be included as Exhibit B to any interconnection agreement entered between the Company and the Customer.

j. Generating Facility: Customer or utility-owned electrical power generation that is interconnected to the utility.

k. Induction Generator: A rotating machine generator that converts mechanical power to electrical power, in which the rotor current creating the magnetic field is supplied by an external AC source, usually the electric utility system.

l. Initial Technical Review: Pursuant to Appendix III, Section 2, the review by the Company following receipt of an Interconnection Application to determine the following: a) if the Generating Facility qualifies for Simplified Interconnection; or b) if the Generating Facility can be made to qualify for interconnection with a Supplemental Review determining additional requirements, if any.

m. Interconnection Application: Completion of one of the two applicable Commission-approved forms in Exhibit A of Appendix II or II-A hereto, or other Company-approved application for interconnection of a Generating Facility governed by Rule 14H submitted to the Company for interconnection of a Generating Facility.

n. Interconnection Facilities: The electrical wires, switches and related equipment that are required in addition to the facilities required to provide electric distribution service to a Customer to allow interconnection. Interconnection Facilities may be located on either side of the Point of Interconnection as appropriate to their purpose and design. Interconnection Facilities may be integral to a Generating Facility or provided separately.

o. Interconnection Requirements Study (or "IRS"): Pursuant to Appendix III, Section 4, a study to establish the requirements for interconnection of a Generating Facility with the Company's Distribution System.

p. Inverter System: A machine, device, or system that changes direct-current power to alternating-current power.

q. Line Section: The portion of the Company's Distribution System connected to a Customer bounded by automatic sectionalizing devices, or the end of a distribution line. Where a radial distribution circuit does not have automatic sectionalizing devices, the whole circuit is considered one line section. A fuse must be manually replaced and is therefore not considered an automatic sectionalizing device.

r. Mandatory Operation: the Generating Facility operates at maximum available current without tripping during the utility's Transmission or Distribution System excursions outside the region of continuous operation. Any functions that protect the Advanced inverter from damage may operate as needed.

s. Network System: An electrical system in which two or more utility feeder sources are electrically tied together on the primary or secondary voltage level to form one power source for one or more customers. The network system is designed to provide higher reliability for customers connected to it.

t. Parallel Operation: The operation of a Distributed Generating Facility, while interconnected, such that customer load can be fed by the Distributed Generating Facility and Distribution System simultaneously.

u. Permissive Operation: The Generating Facility is allowed, but not required, to operate at any current level.

v. Point of Interconnection: The point at which the utility and the customer interface occurs.

w. Short Circuit Contribution Ratio (SCCR): The SCCR evaluates the short circuit current contribution of the Generating Facility in two ways. First the SCCR looks at the ratio of the Generating Facility short circuit contribution to the short circuit contribution of the utility system for a three-phase fault at the high voltage side of the customer or utility transformer connecting the generating facility to the utility (aggregate SCCR must be less than or equal to 10%). Second, it compares the Generating Facility short circuit current to the interrupt rating of the customer's service panel to ensure that the customer's equipment will not be overloaded.

x. Simplified Interconnection: Interconnection conforming to the Initial Technical Review requirements of Appendix III, Section 2 and 3.

y. Subtransmission System: All electrical wires, equipment, and other facilities at the subtransmission voltage levels (such as 46kV, 35kV, or 23kV) owned or provided by the utility, through which the utility provides electrical service to its customers.

z. Supervisory Control: Remote monitoring and/or control of a generating facility's power output and interrupting device status by means of a communication channel (see footnote number 2) that is acceptable to the utility.

aa. Supplemental Review: Pursuant to Appendix III, Section 3, a process wherein the Company further reviews an Interconnection Application that fails one or more of the Initial Technical Review screens. The intent of the Supplemental Review is to provide a slightly more detailed review of only the conditions that cause the Generating Facility generator to fail the Initial Technical Review. The Supplemental Review may result in one of the following: a) approval of interconnection; b) approval of interconnection with additional requirements; or c) cost and schedule for an Interconnection Requirements Study.

bb. Synchronous Generator: A rotating machine generator that converts mechanical power into electrical power, in which the rotor current creating the magnetic field comes from a separate DC source or the generator itself.

cc. Transmission System: 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.

dd. Unintended Islanding: Islanding is a condition in which one or more generating facilities deliver power to a utility customer or customers using a portion of the utility's distribution system that is electrically isolated from the remainder of the utility's distribution system. Unintended islanding may occur following an unanticipated loss of a portion of the utility distribution system.

ee. Utility-grade Protective Equipment: Protective equipment that meet requirements defined by:

- ANSI/IEEE C37.90-1989 IEEE Standards for Relays and Relay Systems Associated with Electric Power Apparatus
- IEEE C37.90.1 IEEE Standard Surge Withstand Capability (SWC) Tests for Protective Relays and Relay Systems
- IEEE C37.90.2 IEEE Trial-Use Standard Withstand Capability of Relay Systems to Radiated Electromagnetic Interference from Transceivers

2. General Interconnection Guidelines

a. Compliance with Laws and Codes: The generating facility, protection, interconnection equipment, design, and design drawings shall meet all applicable national, state, and local laws, including construction and safety codes. The following construction and safety codes shall be followed for the design and construction of all distributed generating facility installations to ensure the safety of the public, customer, and utility personnel. These codes include, but are not limited to, the following:

- National Electric Code (NEC)
- National Electrical Safety Code (NESC)
- National Fire Protection Association (NFPA) Building Code
- City & County of Honolulu Building Code
- Uniform Building Code (UBC)
- American Concrete Institute (ACI)
- American Institute of Steel Construction (AISC)
- American Association of State Highways & Transportation Officials (AASHTO)

b. Notification for Supplemental Review: With regard to the potential need for Supplemental Review referenced in various sections of this Appendix I, as described in section 1 of Appendix III (Interconnection Process Overview) to Rule 14H, upon Company's determination that Supplemental Review will be required based on the results of the Initial Technical Review, the Company shall notify the customer in writing within fifteen (15) business days, or such other period as is mutually agreed upon in writing between the Company and the customer, following the Initial Technical Review or any Supplemental Review required and the reasons for such review.

c. Export of Power: Generating facilities intending to export power to the utility that will cause a reversal of power flow at any voltage regulation device that is not bi-directional may require Supplemental Review or an IRS that will be completed by the Company to evaluate the impacts on equipment ratings and protective relay settings. If an IRS is required, analyses such as a Feeder Load Flow, Dynamic Stability Analysis, Transient Overvoltage, Short Circuit and Relay Coordination may need to be performed in order to evaluate the impacts of the export of power on equipment ratings and protective relay settings. Generating facilities that export power to the utility system may change the direction of power flow on the utility system. The magnitude of the change in power flow will be a function of the aggregate amount of export power on a feeder, the location of the generating facilities exporting power on a feeder, the feeder load, and the location of loads on a feeder. The need for an IRS will depend on these factors.

d. Utility Feeder Penetration: As the penetration of generating capacity increases on the utility distribution feeder, there is increased risk of voltage regulation problems, adverse interactions with the utility's protection system, and unintended islanding. Therefore, Supplemental Review to examine the risk of voltage regulation problems, protection malfunction from reverse power flow, and unintended islanding may be required when the aggregate generating capacity per distribution line section exceeds 15% of the annual peak KVA load of the line section. If an IRS is required, analyses such as a Feeder Load Flow, Dynamic Stability Analysis, Transient Overvoltage, Short Circuit and Relay Coordination may need to be performed in order to evaluate the risk of voltage regulation problems, protection malfunction from reverse power flow and unintended islanding. The need for an IRS will be identified by the Company during Supplemental Review.

   To avoid excessive unbalanced loading on the utility distribution feeder, interconnection of 1-phase generating facilities with a capacity greater than 10kW shall be reviewed by the Company in its Initial Technical Review. Based upon the results of the Initial Technical Review, the Company may determine that Supplemental Review is necessary.

e. Short Circuit Contribution Ratio (SCCR): A generating facility's short circuit current contribution to the utility distribution feeder can affect operation of existing utility protective devices. A good indicator of the potential impact of a generating facility's short circuit contribution is the Short Circuit Contribution Ratio. To ensure the operation of existing utility protective devices are not compromised, Supplemental Review will be required if the sum of the SCCR of all Generating Facilities on the Distribution System circuit exceeds 10% when measured at the primary side of a dedicated distribution transformer, or the short circuit contribution of the proposed generating facility is greater than 2.5% of the interrupting rating of the Customer-Generator's Service Equipment when measured at secondary side of a shared distribution transformer. Analyses such as Short Circuit and Relay Coordination may need to be performed. The need for such analysis will be identified by the Company during Supplemental Review.

f. Network Interconnection: Connection of generating facilities on utility distribution network systems shall be reviewed by the Company in its Initial Technical Review of the impact of the distributed generating facility on the Company's system. Based upon the results of the Initial Technical Review, the Company may determine that Supplemental Review of the network interconnection is necessary.

g. Interconnection of Generating Facility: Once any generating facility has been interconnected to the Company's system, the Company reserves the right to require the installation of, or modifications to, equipment determined by the utility

to be necessary to facilitate the delivery of reliable electric service to its customers, provided that the costs associated with such post interconnection installations or modifications shall be paid by the utility or through other mechanisms approved by the Commission.

3. Design Requirements

a. Integration with Utility Grounding and Ground System Protection: The grounding scheme and the ground fault protection of the generating facility shall be coordinated with the utility system to ensure a ground fault is properly cleared on the utility system. Any ground faults detected by the utility protection scheme (for faults on the utility feeder between the utility substation and the generating facility) must also be detected by the protection scheme of the generating facility. For a single line to ground fault on the connecting utility feeder, the generating facility's ground fault protection must be sufficient to prevent damage to the utility system and other customer equipment due to overvoltage caused by ferroresonance, displaced neutral, or self-excitation. The generating facility must disconnect before the utility breaker recloses automatically.

b. Transformer Winding Configuration: The transformer winding configuration of the customer or utility distribution transformer serving the generating facility shall be reviewed by the Company in its Initial Technical Review to determine the potential impact to the utility system and generating facility, and subsequent interconnection requirements. Refer to typical single-line diagrams in Figures 1-3. Based upon the results of the Line Configuration Screen of the Initial Technical Review, the Company may determine that Supplemental Review of the transformer winding configuration is necessary.

c. Isolation Device: The customer shall furnish and install a manual isolation device that has a visible break to isolate their generating facility from the utility distribution system. The isolation device shall either be a disconnect switch or a breaker with rack-out capability. The device must be accessible to utility personnel and be capable of being locked by utility personnel in the open position. For generating facilities that do not have a circuit breaker or interrupting device, the isolation device must be capable of interrupting load. An existing service disconnect device may be used if it meets these requirements. Attach a label indicating "Customer Generating Facility" to the generator isolation device.

d. Interrupting Device: Applicable circuit breakers or interrupting devices at the generating facility must be capable of interrupting the maximum available fault current at the site, including any contribution from the generating facility. For generating facilities that are greater than 10kW, the interrupting device must be accessible to utility personnel at all times.

e. Dedicated Transformer: The utility may require the generating facility to install a dedicated transformer, where the generating facility is served from the same transformer secondary as another utility customer and if inverter-based

technology is used that does not meet IEEE 519-1992 (or latest versions) specifications. A dedicated transformer or other current-limiting device is needed for any type of generating facility where the increase in available short circuit current could adversely impact other utility customers on the same secondary circuit (i.e., the short circuit contribution of the generating facility must not increase the available short circuit current to the other utility customers on the same secondary circuit such that the ratings of their equipment and protective devices are exceeded). Based upon the results of the Initial Technical Review or Supplemental Review, the Company shall determine whether an adverse impact may occur and whether a dedicated transformer is necessary. In accordance with Section 1.c of Appendix III, the Company shall provide the customer with final results of all technical screenings and Supplemental Review in writing, and shall notify the customer of such determination and the reasons for such determination as part of the written results.

f. Supervisory Control: For generating facilities with an aggregate capacity greater than 1MW, computerized supervisory control shall be required to ensure the safety of working personnel and prompt response to system abnormalities in case of islanding of the generating facility. Supervisory control may be required for generating facilities with an aggregate capacity greater than 250 kW and up to 1 MW, but shall not be required for generating facilities with an aggregate capacity of 250 kW or less.

Supervisory control shall include 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 utility to trip the interrupting device during emergency conditions.[5] Monitoring will be performed by system dispatchers or operators at the Company's control center.

[5] Emergency conditions refer to the need for immediate action in response to a situation that has caused injury, loss of life or property damage. Emergency conditions include, but are not limited to:
A system emergency or forced outage;
A potential hazard to Company personnel or the general public;
A hazardous condition relating to the generating facility;
The generating facility is interfering with the Company's equipment or equipment belonging to other customers (including non-utility generating equipment);
The generating facility's protective devices have been tampered with by the customer and/or owner and/or operator of the generating facility; or
A need for immediate action in response to a situation that has caused (or has the potential to cause) injury, loss of life or property damage.

g. Surge Capability: The generating facility interconnection equipment and relays shall have the capability to withstand voltage and current surges in accordance with IEEE/ANSI Standard C62.41 or IEEE Standard C37.90.1 as appropriate.

h. Equipment Testing: The generating facility shall provide to the utility the manufacturer's brochures/instruction manuals and technical specifications of their proposed generating facility equipment, and test reports for evaluation by the utility.

In addition, verification tests of customer-owned equipment shall be performed on-site by customer to verify protective settings and functionality to ensure that the equipment will not adversely affect the utility distribution system and that it will cease providing power to the system under abnormal conditions. A verification test shall be performed upon initial parallel operation of the generating facility, or whenever interface hardware or software is changed that can affect the protective functions. These tests shall be done by a qualified individual (hired or employed by the customer) in accordance with the manufacturer's recommended test procedure and in concurrence with the utility. Qualified individuals include professional engineers, factory trained and certified technicians, and licensed electricians with experience in testing protective equipment.[6] To ensure that verification tests of customer-owned equipment are performed correctly, the utility may request to witness the tests and receive written certification of the results from the qualified individual. The customer must inform the Company in writing of proposed changes in the customer's interconnection hardware or software that are related to the performance, operation, or timing of the protective functions not later than fifteen (15) business days prior to implementation of such changes. Upon receiving notice of such proposed changes from the customer, the Company must notify the customer in writing of any concerns regarding the proposed changes within fifteen (15) business days, in which case the changes shall not be implemented until the customer and Company resolve the concerns to their mutual satisfaction and document the resolution in writing.

All interconnection-related protective functions and transfer trip schemes, if applicable, shall be periodically tested at intervals specified by the manufacturer, or in accordance with industry practice. (When the interval is not specified by the manufacturer or by the Company, protective functions should be tested every four years.) The customer shall submit or make available for inspection by the utility, test reports of such testing. Periodic testing conforming to the utility test intervals for the particular line section can be specified by the utility under special circumstances (e.g., where the generating facility is connected to a utility feeder that has experienced high frequency of outages due to natural or unnatural

[6] Also see the Standard Interconnection Agreement, Exhibit B, paragraph 2.a. (Sheet No. 34C-19).

causes such as in coastal areas where there are high winds). The Company will determine whether special circumstances exist, and must inform the customer in writing of any such determination and the reasons for that determination. A system that depends upon a battery for trip power shall be checked and logged once per month for proper voltage, or monitored continuously.

4. Operating Requirements

This Section 4 shall continue to be used for interconnection applications received with inverter based technologies until December 31, 2015, with the exception of interconnection requirements for frequency and voltage ride through (Section 4.g. and 4.h.). Beginning October 1, 2015, interconnection applications must comply with the frequency and voltage ride through requirements specified in Section 4A.g. and 4A.h., below.

Interconnection applications received with inverter based technologies after December 31, 2015 shall comply with section 4A in its entirety. Until such date, Section 4A may be used in its entirety, or in part, for inverter based technologies by mutual agreement of the utility and the Applicant.

Disconnection of Generating Facility for Utility Reasons: Upon providing reasonable notice (generally not to be less than ten (10) business days for scheduled work), the utility may require the generating facility to temporarily disconnect from the utility's system when necessary for the utility to construct, install, maintain, repair, replace, remove, investigate, test, or inspect any of its equipment or other utility customer's equipment, or any part of its system. The generating facility shall not energize a de-energized utility line under any circumstances, but may operate isolated from the utility system with an open tie point in accordance with Section 4.i.

If the utility determines that such disconnection is necessary because of unexpected system emergencies, forced outages, operating conditions on the utility's system, or compliance with good engineering practices as determined by the Company's engineers and/or operations personnel, the Company will immediately attempt to notify, in person, by telephone, by electronic mail, or by facsimile, the customer's designated representatives of the need to disconnect the customer's generating facility. Unless the emergency condition requires immediate disconnection as determined by the utility, the Company shall allow sufficient time for the generating facility operator to manually disconnect the generator. (As stated in Section 4.b below, there are circumstances where the utility may disconnect the generating facility without prior notice to the Customer.)

Following the completion of work and/or rectification of the emergency conditions by the utility, the utility shall reset the Customer's isolation device, if open, as soon as practicable and shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the utility and the customer, written documentation of the occurrence and nature of the utility's work and/or emergency condition, and the disconnection of the customer's generating facility.

The utility shall take reasonable steps to minimize the number and duration of such disconnections. The utility may disconnect the customer from the utility's system for failure by the customer to disconnect their generating facility under this Section 4.a, until such time that the utility work or emergency condition has been corrected and the normal system condition has been restored.

The generating facility may be disconnected by the utility at the facility location or remotely by supervisory control, if available.

b. Personnel and System Safety: The utility may disconnect the generating facility from the utility's system, without prior notice to the customer: (a) to eliminate conditions that constitute a potential hazard to the utility's personnel or the general public; (b) if pre-emergency[7] or emergency conditions[5] exist on the utility system; (c) if a hazardous condition relating to the generating facility is observed by the utility's inspection; (d) if the generating facility interferes with the utility's equipment or equipment belonging to other utility customers (including non-utility generating equipment); or (e) if the customer or a party with whom the customer has contracted for ownership and/or operation of the generating facility has tampered with any protective device. The generating facility shall remain disconnected until such time as the utility is satisfied that the endangering condition(s) has been corrected, and the utility shall not be obligated to allow parallel operation of the generating facility during such period. If the utility disconnects the generating facility under this Section 4.b, it shall as soon as practicable notify the customer in person, by telephone, by electronic mail, or by facsimile and provide the reason(s) why the generating facility was disconnected from the Company's system. Following the rectification of the endangering conditions, the utility shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the utility and the customer, written documentation of the occurrence and nature of the endangering conditions, and the disconnection of the customer's generating facility.

   The generating facility may be disconnected by the utility at the facility location or remotely by supervisory control, if available.

c. Synchronization: Upon connection, the generating facility shall synchronize with the utility distribution system. Synchronization means that at the Point of

[7] Pre-emergency conditions refer to the need for immediate action in response to a situation that has the potential to cause injury, loss of life, or property damage.

Interconnection, the frequency difference shall be less than 0.2 Hz from rated frequency, the voltage difference shall be less than 5% of nominal voltage, and the phase angle difference shall be less than 10 degrees.

d. Voltage Regulation: Unless specifically requested by the utility, the generating facility shall not attempt to control or regulate the utility system voltage while operating in parallel with the utility distribution system.

The generating facility shall not degrade the normal voltage provided by the utility outside the limits stated in the utility tariff (± 5% of nominal voltage).

e. Unintended Islanding: For public and utility personnel safety and to prevent possible damage to customer equipment, the generating facility shall be equipped with protective equipment designed to prevent the generating facility from being connected in parallel with a de-energized utility line. The generating facility must automatically disconnect from the utility distribution system upon loss of utility source, and remain disconnected until the voltage and frequency have stabilized (see Section 4.j). Protective device requirements, such as direct transfer trip, grounding bank, or active anti-islanding scheme, shall be determined by the Company based upon the results of the Initial Technical Review and/or Supplemental Review.

f. Disconnect for Faults: The generating facility shall be equipped with protective equipment designed to automatically disconnect the generating facility from the utility distribution system for faults on the utility distribution circuit to which it is connected, and remain disconnected until the voltage and frequency have stabilized (see Section 4.j).

g. Voltage Disturbances: The generating facility shall be equipped with protective equipment designed to automatically disconnect the generating facility from the utility distribution system for voltages outside the normal operating range within the clearing time as indicated in the table below, and remain disconnected until the voltage and frequency have stabilized (see Section 4.j). The protective equipment shall measure the RMS (root-mean-square) voltage at the Point of Interconnection.

Voltage (% of base voltage)	Voltage (120V base)	Clearing Time
$V < 50\%$	$V < 60$ volts	10 cycles
$50\% \leq V < 88\%$	60 volts $\leq V <$ 106 volts	120 cycles
$88\% \leq V \leq 110\%$	106 volts $\leq V \leq$ 132 volts	Normal Range
$110\% < V < 120\%$	132 volts $< V <$ 144 volts	60 cycles
$120\% \leq V$	144 volts $\leq V$	10 cycles

For generating facilities ≥ 30kW, the voltage set points and clearing times shall be adjustable to accommodate utility system requirements.

h. Frequency Disturbances: The generating facility shall be equipped with protective equipment designed to automatically disconnect the generating facility from the utility distribution system when the frequency at the Point of Interconnection deviates outside the utility specified operating range set forth below, and remain disconnected until the voltage and frequency have stabilized (see Section 4.j).

All generating facilities, including those with an aggregate capacity less than 30 kW, shall have frequency setpoints and clearing times selected by the utility and provided below, to coordinate with the utility's system relay settings.

The generating facilities shall set protective equipment to (1) disconnect the generating facility within 10 cycles if the frequency exceeds 60.5 Hz, (2) be capable of time delayed disconnection of 300 seconds with the adjustable underfrequency setting set to 57.0 Hz, and (3) disconnect the generating facility within 10 cycles if the frequency is less than 57.0 Hz.

i. Inadvertent Energization, Operation During Utility System Outage: The generating facility shall not energize a de-energized utility circuit for any reason. The generating facility may be operated isolated from the utility system during a utility outage or system emergency only with an open tie breaker or disconnect device which isolates the generating facility from the utility system. This shall generally be done through manual opening and lockout of the Customer's service breaker or isolation device (required under Section 3.c) by utility personnel prior to starting the generating facility.

Where customers desire the ability to manually or automatically isolate their generating facility from the utility system by themselves, the utility will consider alternative designs proposed by the Customer that will prevent inadvertent energization of a de-energized utility circuit. Such alternative design proposals shall be reviewed and approved in writing by the Company prior to implementation. The utility shall not unreasonably withhold such approval. Upon implementation of an alternative design approved by the Company, the Customer may isolate itself from the utility system during a utility outage and operate its generating facility. Customers' alternative designs may, subject to review and approval by the Company, enable customers to manually or automatically reconnect back to the utility system upon restoration of utility system power, provided that the utility has not locked out the customers' service as described below and subject to the delay requirements specified in Section 4.j.

In certain situations, including any time that utility personnel will be performing work on the distribution system serving the point of interconnection between the utility and Customer, the utility may determine the need to actively verify the open tie point, and to install a Company lock to ensure the safety of utility personnel. The Customer shall provide access to the isolation device required under Section 3.c for utility personnel to visually confirm the open tie point and install a Company

lock if necessary. Following restoration of grid power or rectification of the emergency condition, the utility personnel shall, as soon as practicable, remove the Company lock to allow reconnection of the generating facility with the utility system.

Generators that do not operate in parallel to the utility's distribution system at any time and which are therefore not covered under an interconnection agreement may be operated by Customer at their discretion.

j. Required Delay on Reconnection: The generating facility shall be equipped with automatic means to prevent reconnection of the generating facility with the utility distribution system until the utility service voltage and frequency are within the utility tariff normal operating ranges and stable for at least 5 minutes, unless earlier directed by the utility.

k. Loss of Protection: Failure of the generating facility interconnection protection equipment, including loss of control power, shall result in the automatic disconnection of the generating facility from the utility distribution system until such time that the interconnection protection equipment has been restored. Such failure shall initiate a signal to trip a generating facility circuit breaker or shutdown an inverter. In the case of failure of Company-owned protection equipment, following the rectification of the loss of protection, the utility shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the utility and the customer, written documentation of the occurrence, and the disconnection of the customer's generating facility.

l. Reclosing Coordination: The generating facility shall be coordinated with the utility system reclosing devices, by disconnecting from the utility distribution system within the first reclose interval and remaining disconnected until the voltage and frequency have stabilized (see Section 4.j).

m. Power Factor: The generating facility shall not adversely impact the power factor at the Point of Interconnection. Generating facilities shall operate at a power factor ≥ 0.85 (lagging or leading).

Operation outside this range is acceptable provided the reactive power of the generating facility is used to meet the reactive power needs of the customer's internal loads or that reactive power is otherwise provided under utility tariff, and it does not adversely impact the utility system voltage as specified in Section 4.d. above.

n. Voltage Flicker: Any voltage flicker at the Point of Interconnection caused by the generating facility shall not exceed the limits defined by the "Borderline of Visibility Curve" identified in IEEE Standard 519-1992 "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems" (or latest

version). This requirement is necessary to minimize the adverse voltage effects upon other utility customers on the utility distribution system.

o. Harmonics: Harmonic distortion at the Point of Interconnection caused by the generating facility shall not exceed the limits stated in IEEE Standard 519-1992 "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems" (or latest version). The customer is responsible for the installation of any necessary controls or hardware to limit the voltage and current harmonics generated from their generating facility to levels defined in IEEE Standard 519-1992.

p. Direct Current Injection: The generating facility shall not inject DC current greater than 0.5% of the full rated output current into the utility distribution system at the Point of Interconnection under either normal or abnormal operating conditions. This applies primarily to generating facilities that use an inverter to interconnect with the utility system.

q. Protection from Electromagnetic Interference (Immunity Protection): The influence of electromagnetic interference (EMI) shall not result in a change in state or misoperation of the generating facility interconnection system.

r. Disconnection of Customer Generating Facilities: Except as otherwise provided herein, the disconnection of a customer's generating facility shall not be subject to standby charges provided that the disconnection was caused by the utility or by the failure of the utility's equipment, or the disconnection was requested or required by the utility due to reasons other than problems caused by the customer's generating facility. The procedure for determining the applicability of standby charges to a disconnection event shall be specified in the Company's Schedule SS Standby Service tariff.

4. Advanced Inverter Generating Facility Design And Operating Requirements

Section 4 (Operating Requirements) above shall continue to be used for interconnection applications received with inverter based technologies until December 31, 2015, with the exception of requirements for frequency and voltage ride through (Sections 4A.g. and 4A.h.), which are required as of October 1, 2015.

Interconnection applications received with inverter based technologies after December 31, 2015 shall (1) comply with Section 4A and be certified to UL-1741 Supplement SA, or (2) upon interconnection approval, comply with fixed power factor (Section 4A, part m), voltage ride-through (Section 4A, Part g)[8], and frequency ride-through (Section 4A,

[8] If not immediately available upon interconnection approval, compliance of volt-watt and frequency-watt functionality may be implemented twelve months after the date the Supplement SA of UL-1741 is approved by the full UL-1741 Standards Technical Panel (STP).

part h)[8], with the capability to be updated, at the expense of the Generating Facility Owner, with the remaining Advanced Inverter requirements (Volt/Var Operations – Section 4A, Part s, Ramp Rate Requirements – Section 4A, Part t, Remote Reconnect/Disconnect – Section 4A, Part u, Remote Configurability – Section 4A, Part v, Default Activation States for Phase 1 Functions – Section 4A, Part w) set forth in section 4A no later than twelve (12) months after the date the Supplement SA of UL-1741 is approved by the full UL-1741 Standards Technical Panel (STP). Following such date, Section 4A shall apply for interconnection of all inverter based technologies. Until such date, Section 4A, may be used in all or in part, for inverter based technologies by mutual agreement of the utility and the Applicant.
The inverter requirements are intended to be consistent with ANSI/IEEE 1547-2003 and 1547a Standard for Interconnecting Distributed Resources with Electric Power Systems (IEEE 1547 including amendment 1547a). In the event of conflict between this Rule and IEEE 1547-2003, this Rule shall take precedence. Exceptions are taken to IEEE 1547 Clauses 4.1.4.2 Distribution Secondary Spot Networks and Clauses 4.1.8.1 or 5.1.3.1, which address Protection from Electromagnetic Interference.

PREVENTION OF INTERFERENCE

Customer-Generator shall not operate Advanced Inverters that superimpose a voltage or current upon the utility's Distribution or Transmission System that interferes with utility operations, service to utility Customers, or communication facilities. If such interference occurs, Customer-Generator must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by utility. If Customer-Generator does not take corrective action in a timely manner, or continues to operate the facilities causing interference without restriction or limit, utility may, without liability, disconnect Customer-Generator's facilities from the utility's Distribution or Transmission System, in accordance with Section 4.b. of this Rule. To eliminate undesirable interference caused by its operation, each Advanced Inverter shall meet the following criteria:

a. Disconnection of Generating Facility for Utility Reasons: See Section 4.a.

b. Personnel and System Safety: See Section 4.b.

c. Synchronization: See Section 4.c.

d. Voltage Regulation: If approved by the utility, the Advanced Inverter may actively regulate the voltage at the Point of Interconnection while in parallel with the utility's Distribution System. The Advanced Inverter shall not cause the service voltage at other customers to go outside the requirements of ANSI C84.1-1995, Range A (IEEE 1547-4.1.1).

e. Unintended Islanding: See Section 4.e.

f. Disconnection for Faults: See Section 4.f.

g. Voltage Trip and Ride-Through Settings: The voltage ranges in Table 4a.g. define protective trip limits for the Protective Function and are not intended to define or imply a voltage regulation function. Generating Facilities shall cease to energize utility Distribution System within the prescribed trip time whenever the voltage at the Point of Interconnection deviates from the allowable voltage operating range. The protection function shall detect and respond to voltage on all phases to which the Generating Facility is connected.

(i) Advanced Inverters: Advanced Inverters shall be capable of operating within the voltage range normally experienced on the utility Distribution System from plus 5% to minus 5% of the nominal voltage (e.g. 126 volts to 114 volts, on a 120 volt base), at the service panel or Point of Interconnection. The trip settings at the generator terminals may be selected in a manner that minimizes nuisance tripping accordance with Table 4a.g to compensate for voltage drop between the generator terminals and the Point Of Interconnection. Voltage may be detected at wither the generator terminals or the Point of Interconnection. However, the voltage range at the Point of Interconnection, with the generator on-line, shall stay within +/- 5% of nominal.

(ii) Voltage Disturbances: Whenever the utility Distribution System voltage at the Point of Interconnection varies from and remains outside the normal operating high and normal operating low region voltage for the predetermined parameters set forth in Table 4a.g. the Advanced Inverter's protective functions shall cause the Advanced Inverter(s) to cease to energize the utility Distribution System. Unless provided alternate settings by the Company, all inverter-based Generating Facilities must comply with the standard voltage ride-through and trip settings specified in Table 4a.g:

1. The Advanced Inverter shall stay connected to the utility Transmission or Distribution System while the grid remains within the "Ride-Through Until" voltage-time range and must operate in accordance with the "Operating Mode" specified for each "Operating Region".

2. In the NORH region, the Advanced Inverter shall continue to operate at full available power or may reduce power output as a function of voltage, in accordance with section (iii) Volt-Watt.

3. Different settings than that specified in Table 4a.g. and section (iii) Volt-Watt may be specified by the utility.

Table 4a.g: Voltage Ride-Through Table

Operating Region	Voltage at Point of Interconnection (% Nominal Voltage)	Ride-Through Until	Operating Mode	Maximum Trip Time	Return To Service - Trip Criteria (V)	Return To Service - Trip Time Delay (s)
Over-Voltage 2 (OVR2)	V > 120	No Ride Through	Cease to Energize	0.16** seconds	110 ≥ V ≥ 88	300 - 600*
Over-Voltage 1 (OVR1)	120 ≥ V > 110	0.92 seconds	Mandatory Operation	1 second	110 ≥ V ≥ 88	300 - 600*
Normal Operation High (NORH)	110 ≥ V > 100	Indefinite	Continuous Operation (Volt-Watt)	Indefinite	Not Applicable	Not Applicable
Normal Operation Low (NORL)	100 > V ≥ 88	Indefinite	Continuous Operation	Indefinite	Not Applicable	Not Applicable
Under-Voltage 1 (UVR1)	88 > V ≥ 70	20 seconds	Mandatory Operation	21 seconds	110 ≥ V ≥ 88	300 - 600*
Under-Voltage 2 (UVR2)	70 > V ≥ 50	10-20* seconds	Mandatory Operation	11-21* seconds	110 ≥ V ≥ 88	300 - 600*
Under-Voltage 3 (UVR3)	50 > V	No Ride Through	Permissive Operation	0.5 seonds	110 ≥ V ≥ 88	300 - 600*

* May be adjusted within these ranges at manufacturer's discretion.
** Must trip time under steady state condition. Inverters will also be required to meet the Companies transient overvoltage criterion (TrOV-2).

(iii) Volt-Watt: The Advanced Inverter shall be capable of modulating active power output (on a percentage basis of nominal rated watt output) when the voltage at the Point of Interconnection is above the Volt/Watt start voltage in accordance with the parameters set forth in the table below.

Parameter	Default Setting	Minimum Range of Adjustability
Start Voltage (% of nominal)	106	105 to 120
Reduction Gradient ($\%P_{nom}/\%V$)	0	0 to -100
Time Constant (s)[9]	60	3 to 90

h. Frequency Disturbances: The utility controls system frequency, and the Generating Facility shall operate in synchronism with the utility Distribution or Transmission System. Whenever the utility Distribution or Transmission System frequency at the Point of Interconnection varies from and remains outside normal (nominally 60 Hz) by the predetermined amounts set forth in Table 4a.h, the Generating Facility's Protective Functions shall cease to energize the utility Distribution or Transmission System within the stated maximum trip time. Unless provided alternate settings by the Company, all inverter-based Generating Facilities must comply with the standard voltage ride-through and trip settings specified in Table 4a.h

[9] The time constant is for a simple first order low-pass filter

(i) Frequency Ride-Through Requirements: Advanced Inverter based systems shall remain connected to the utility Distribution or Transmission System while the grid is within the frequency-time range indicated in Table 4a-.h, and shall disconnect from the electric grid during a high or low frequency event that is outside that frequency-time range. The frequency values are shown in Table 4a.h. These values provide default interconnection system response to abnormal frequencies. The inverter shall disconnect by the default clearing times. The Advanced Inverter is permitted to reduce real power output as a function of frequency in accordance with section (iii) Frequency-Watt. Islands and microgrids may need different default frequency settings.

Table 4a.h: Frequency Ride-Through Table (Oahu, Maui, Hawai'i Island)

Operating Region	System Frequency Default Settings (Hz)	Minimum Range of Adjustability	Ride-Through Until	Operating Mode	Maximum Trip Time
Over-Frequency 2 (OFR2)	f > 64.0	60.1 - 65	No Ride Through	Permissive Operation (Freq-Watt)	0.16 seconds
Over-Frequency 1 (OFR1)	64.0 ≥ f > 63.0	60.1 - 65	20 seconds	Mandatory Operation (Freq-Watt)	21 seconds
Normal Operation High (NORH)	63.0 ≥ f > 60.0	Not Applicable	Indefinite	Continuous Operation (Freq-Watt)	Not Applicable
Normal Operation Low (NORL)	60.0 ≥ f ≥ 57.0	Not Applicable	Indefinite	Continuous Operation	Not Applicable
Under-Frequency 1 (UFR1)	57.0 > f ≥ 56.0	57 - 59.9	20 seconds	Mandatory Operation	21 seconds
Under-Frequency 2 (UFR2)	56.0 > f	53 - 57	No Ride Through	Permissive Operation	0.16 seconds

* May be adjusted within these ranges at manufacturer's discretion.

Table 4a.h: Frequency Ride-Through Table (Molokai, Lanai)

Operating Region	System Frequency Default Settings (Hz)	Minimum Range of Adjustability	Ride-Through Until	Operating Mode	Maximum Trip Time
Over-Frequency 2 (OFR2)	f > 65.0	60.1 - 65	No Ride Through	Permissive Operation (Freq-Watt)	0.16 seconds
Over-Frequency 1 (OFR1)	65.0 ≥ f > 63.0	60.1 - 65	20 seconds	Mandatory Operation (Freq-Watt)	21 seconds
Normal Operation High (NORH)	63.0 ≥ f > 60.0	Not Applicable	Indefinite	Continuous Operation (Freq-Watt)	Not Applicable
Normal Operation Low (NORL)	60.0 ≥ f ≥ 57.0	Not Applicable	Indefinite	Continuous Operation	Not Applicable
Under-Frequency 1 (UFR1)	57.0 > f ≥ 50.0	57 - 59.9	20 seconds	Mandatory Operation	21 seconds
Under-Frequency 2 (UFR2)	50.0 > f	50 - 57	No Ride Through	Permissive Operation	0.16 seconds

* May be adjusted within these ranges at manufacturer's discretion.

(ii) Frequency-Watt: The Advanced Inverter shall modulate real power when the frequency at the Point of Interconnection is above the frequency/watt start frequency in accordance with the parameters set forth in the table below. The power reduction shall be on a percentage basis of the momentary real power (P_M) existing at the time the start frequency is exceeded. If frequency returns to below the start frequency value and more power is available than the previous momentary power (P_M), the increase in real power shall be limited to the normal ramp rate

Parameter	Default Setting	Minimum Range of Adjustability
Start	60.5	60.1 to 65.0
Frequency (Hz) Reduction	0	0 to -100
Gradient (%P_M/%Hz)		

i. Inadvertent Energization, Operation During Utility System Outage: See Section 4.i. ___

j. Required Delay on Reconnection: See Section 4.j. ___

k. Loss of Protection: See over existing provision from Section 4.k. ___

l. Reclosing Coordination: See Section 4.l. ___

m. Fixed Power Factor: Customer-Generator shall provide adequate reactive power compensation on site to maintain the Advanced Inverter power factor at the default setting at rated output or a utility specified power factor in accordance with the following requirements:

(i) Default Power Factor setting: -0.95 lagging (absorbing) +/- 0.01 (-0.94 Lagging to -0.96 lagging).

(ii) Aggregate generating facility is greater than 15 kW: Adjustable range 1.0 +/- 0.15 (0.85 Lagging to 0.85 Leading) down to 20% rated power.

(iii) Aggregate generating facility is less than or equal to 15 kW: Adjustable range 1.0 +/- 0.10 (0.90 Lagging to 0.90 Leading) down to 20% rated power.

n. Voltage Flicker: See Section 4.n.

o. Harmonics: See Section 4.o.

p. Direct Current Injection: See Section 4.p.

q. Protection from Electromagnetic Interference (Immunity Protection): See Section 4.q.

r. Disconnection of Customer Generating Facilities: See Section 4.r.

s. Volt/VAR Operations: The Advanced Inverter shall be capable of operating within a power factor range of +/- 0.85 PF for larger (>15 kW) systems, down to 20% of rated power, and +/- 0.9 PF for smaller systems (≤15 kW), down to 20% of rated power. This Volt/VAR capability shall be able to be activated or deactivated in accordance with utility requirements. By mutual agreement between the Customer-Generator and the utility, the Advanced Inverter system may operate in larger power factor ranges, including in 4-quadrant operations for storage systems, with the implementation of additional anti-islanding protection as determined by the utility.

   The Advanced Inverter shall be capable of providing dynamic reactive power compensation (Volt/VAR operation) within the following constraints:

   - The Advanced Inverter shall not cause the line voltage at the point of interconnection to go outside the requirements of the latest version of ANSI C84.1, Range A.

   - The Advanced Inverter shall be able to consume reactive power in response to an increase in line voltage, and produce reactive power in response to a decrease in line voltage.

   - The maximum reactive power provided to the system shall be as directed by the utility.

t. Ramp Rate Requirements: The Advanced Inverter is required to have the following ramp controls for at least the following two conditions. These functions may be established by multiple control functions or by one general ramp rate control function. Ramp rates are contingent upon sufficient energy available from the Advanced Inverter.

   - Normal ramp-up rate: For transitions between energy output levels over the normal course of operation. The default value is 100% of maximum current output per second with a range of adjustment between 1% to 100%, with specific settings as mutually agreed by the utility and the Customer-Generator.

- Connect/Reconnect Ramp-up rate: Upon starting to inject power into the grid, following a period of inactivity or a disconnection, the inverter shall be able to control its rate of increase of power from 0.1% to 100% maximum current per second, with specific settings as mutually agreed upon by the utility and the Customer-Generator. The default value is 0.33% maximum current per second.

u. Remote Reconnect/Disconnect: The Advanced Inverter shall be capable of receiving a remote command directly from the utility, or its agent(s), to connect or disconnect the Advanced Inverter from parallel operation pursuant to Section 4.a and 4.b.

v. Remote Configurability: The Advanced Inverter shall be capable of receiving and implementing remote updates, including but not limited to: Advanced Inverter setting or parameter modifications, activation and deactivation of various Advanced Inverter functions, as required by the utility or its agent(s). The Advanced Inverter shall be capable of reporting current settings.

w. Default Activation States for Phase 1 Functions: Unless otherwise provided by the utility, the default settings will be as follows:

- Anti-islanding – activated
- Low/High Voltage Ride-Through – activated
- Low/High Frequency Ride-Through – activated
- Frequency/Watt - deactivated
- Volt/Watt - activated
- Volt/VAR operations – deactivated
- Ramp rates – activated
- Fixed power factor – activated
- Reconnect by "soft-start" methods – activated

These default activation states may be modified by mutual agreement between the utility and Customer-Generator.

5. Technology Specific Requirements

a. Three-Phase Synchronous Generators: The generating facility circuit breakers shall be 3-phase devices with electronic or electromechanical control. The customer shall be responsible for properly synchronizing its generating facility with the utility distribution system by means of either a manual or automatic synchronizing function. Automatic synchronizing is required for all synchronous generators which have an SCCR greater than 5%. For a generating facility whose SCCR exceeds 5%, the customer shall provide protective equipment suitable for detecting loss of synchronism and automatically disconnecting the

generating facility from the utility distribution system. Unless otherwise agreed to in writing between the utility and customer, synchronous generators shall automatically regulate power factor, not voltage, while operating in parallel with the utility system.

b. Induction Generators: Induction generators may be connected and brought up to synchronous speed (as an induction motor) if it can be demonstrated that the initial voltage drop measured at the Point of Interconnection is within the visible flicker limits as defined by IEEE 519-1992 (or latest version). The same requirements also apply to induction generation connected at or near synchronous speed because a similar voltage dip is present due to an inrush magnetizing current. The customer shall submit number of starts per specific time period and maximum starting kVA draw data for the utility to verify that the voltage dip due to starting is within the visible flicker limits and does not degrade the normal voltage provided by the utility.

Induction generators do not require separate synchronizing equipment. Starting or rapid load fluctuations on induction generators can adversely impact the utility's system voltage. Corrective step-switched capacitors or other techniques may be necessary if the voltage fluctuations measured at the Point of Interconnection are not within the visible flicker limits as defined by IEEE 519-1992 (or latest version). These measures can, in turn, cause ferroresonance. If these measures (additional capacitors) are installed on the customer's side of the Point of Interconnection, the utility will review these measures and may require the customer to install additional protective relaying equipment, provided that the utility provides the customer with written notice of the additional equipment required and the reasons for such determination. The Company will determine whether additional equipment is required to protect the Company's system.

c. Inverter Systems: Inverter interfaced distributed generators that are to be installed in parallel with the utility distribution system must employ a non-islanding synchronous inverter. The inverter design shall comply with the requirements of IEEE Std 1547 and UL 1741 standards (or latest versions) and be certified to have anti-islanding protection such that the synchronous inverter will automatically disconnect upon a utility system interruption.

Self-commutated inverters of the utility-interactive type shall synchronize to the utility. Inverters capable of stand-alone operation shall not attempt to control the voltage while operating in parallel with the utility distribution system. Line-commutated, thyristor-based inverters are not recommended and will require Supplemental Review or IRS to determine harmonic and reactive power requirements. All interconnected inverter systems shall comply with the harmonic current limits of IEEE Std 519-1992 (or latest version).

6. Protection, Synchronizing, and Control Requirements

a. Protection Requirements: The generating facility shall, at a minimum, provide adequate protective devices which include over/under voltage trip, over/under

frequency trip, reverse power relay (for non-export generating facilities), and a means for automatically disconnecting the generating facility from the utility distribution system whenever a protective device initiates a trip. Based upon the results of the Initial Technical Review and/or Supplemental Review by the Company, additional protective devices may be required. Photovoltaic generating systems are to follow the guidelines set by UL 1741 standard (or latest version). Typical equipment and protective device requirements for large synchronous, induction, and inverter generators are illustrated in Figures 1, 2, and 3 respectively in Exhibit A.

b. Suitable Equipment: All protective devices (described in this document) for generating facilities ≥ 30kW shall be utility-grade (see Definition for "Utility-Grade Protective Equipment") except for inverter-based generating facilities which shall comply with UL 1741 standard (or latest version) and IEEE 1547 (or latest version). The generating facility shall be responsible for identifying the specific models of their protective devices. All protective devices shall be used in accordance with their intended application.

c. Review of Design Drawings: The following engineering drawings/documents are required for review and approval by the utility prior to construction of the generating facility interconnection. Prior to being submitted to the utility, all drawings/documents shall be approved by a Professional Electrical Engineer registered in the State of Hawaii for generating facilities ≥ 30kW. That approval shall be indicated by the presence of the Engineer's Professional seal on all drawings and documents.

- 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. (Not required for generating facilities < 30kW).

Superseding SHEET NO. 34B-30
Effective April 18, 2008

REVISED SHEET NO. 34B-30
Effective December 3, 2011

EXHIBIT A

Typical Equipment and Protective Device Requirements for Large Synchronous, Induction, and Inverter Generators

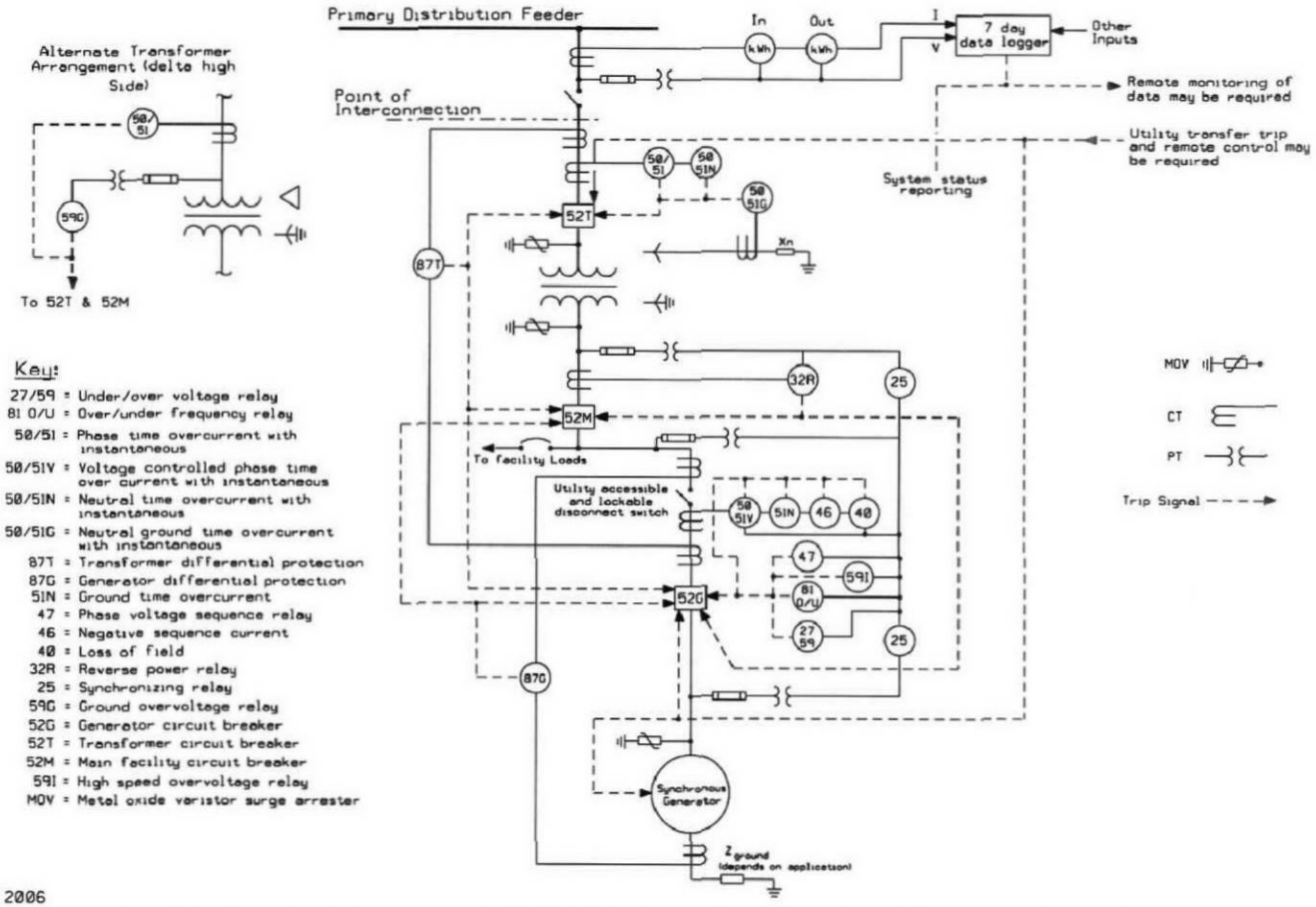
HAWAIIAN ELECTRIC COMPANY, INC.

Decision and Order Dated November 29, 2011, Docket No. 2010-0015
Transmittal Letter Dated December 2, 2011.

Figure 1

Large Synchronous Generator (Non-export)

Typical Equipment and Protective Device Requirements



HAWAIIAN ELECTRIC COMPANY, INC.

Decision and Order Dated November 29, 2011, Docket No. 2010-0015
Transmittal Letter Dated December 2, 2011.

Figure 2

Large Induction Generator (Non-export)

Typical Equipment and Protective Device Requirements

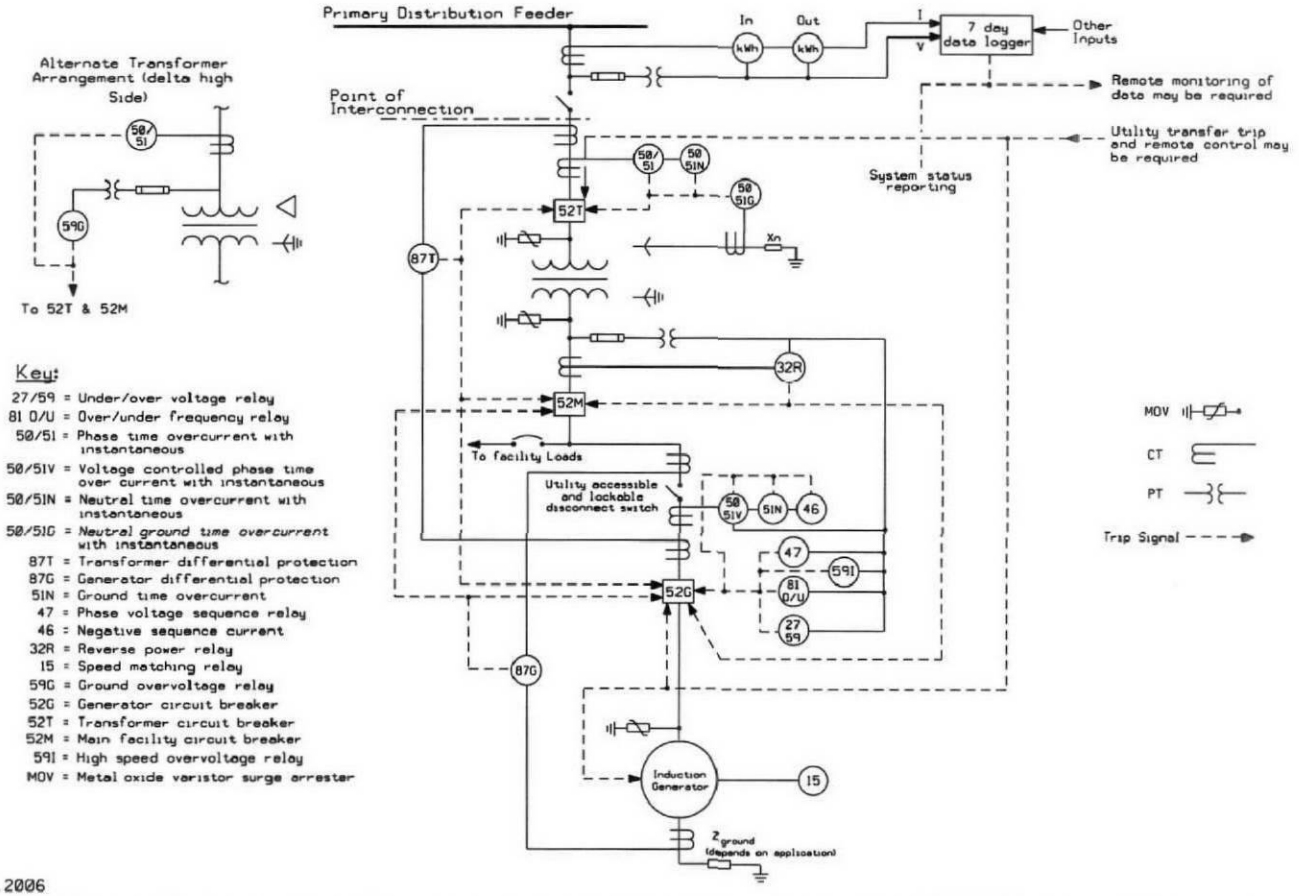
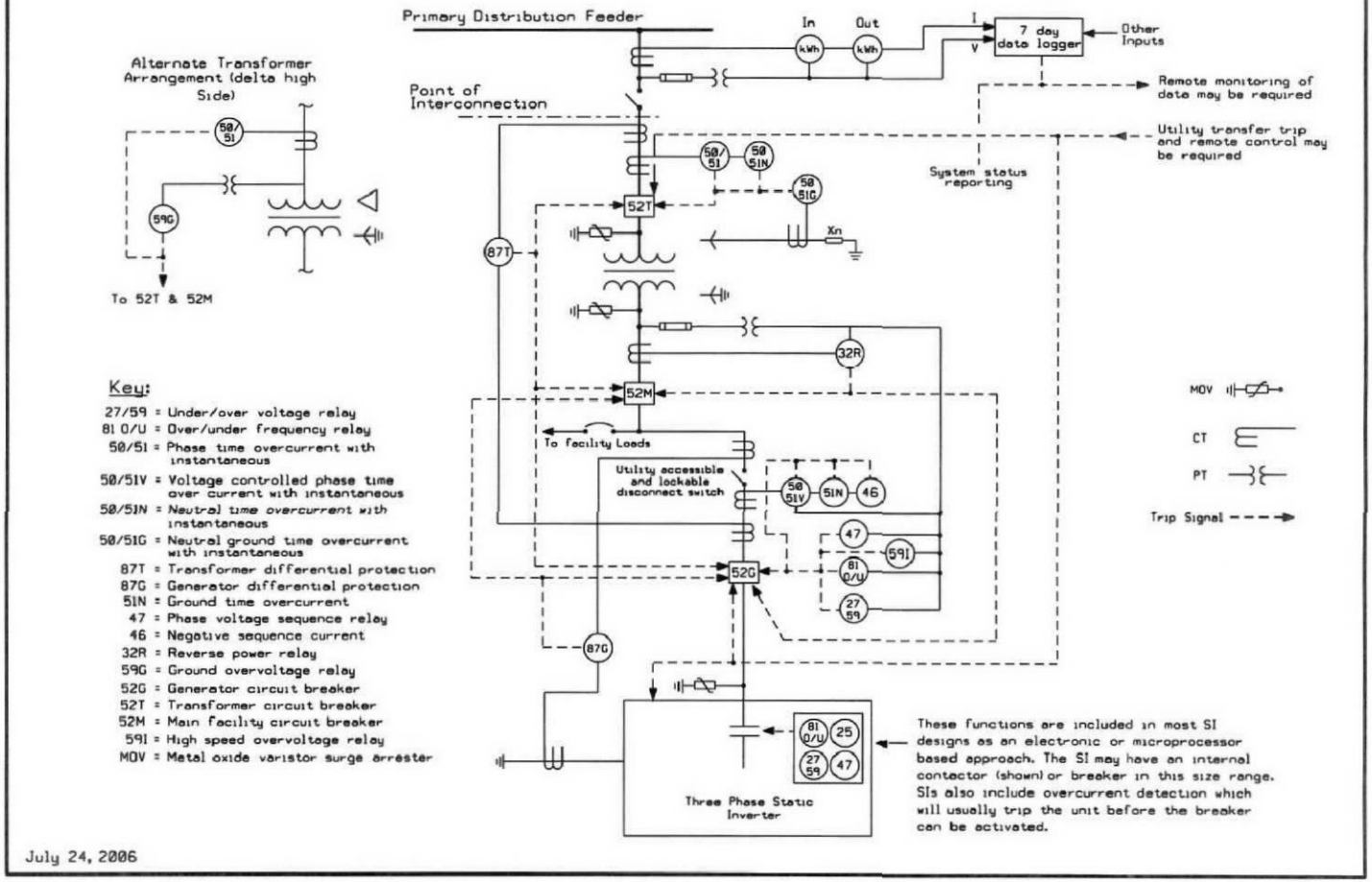


Figure 3

Large Static Inverter (Non-export)

Typical Equipment and Protective Device Requirements



Key:

27/59 = Under/over voltage relay
81 O/U = Over/under frequency relay
50/51 = Phase time overcurrent with instantaneous
50/51V = Voltage controlled phase time over current with instantaneous
50/51N = Neutral time overcurrent with instantaneous
50/51G = Neutral ground time overcurrent with instantaneous
87T = Transformer differential protection
87G = Generator differential protection
51N = Ground time overcurrent
47 = Phase voltage sequence relay
46 = Negative sequence current
32R = Reverse power relay
59G = Ground overvoltage relay
52G = Generator circuit breaker
52T = Transformer circuit breaker
52M = Main facility circuit breaker
59I = High speed overvoltage relay
MOV = Metal oxide varistor surge arrester

July 24, 2006

APPENDIX II-B

APPLICATION FOR NON-EXPORT DISTRIBUTED GENERATION FACILITIES
(MOMENTARY-PARALLEL OPERATION)

This Application is considered complete when it provides all applicable and correct information required below. Additional information to evaluate the Application may be required.

Customer Information:

Name:_____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone (Daytime): ( ) _____ Phone (Evening): ( ) _____

Fax: ( ) _____ E-Mail Address: _____

Electric Service Company and Account No.: _____

Facility Location (if different from above): _____

Facility Location Tax Map Key No.: _____

Owner of the Generating Facility (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone (Daytime): ( ) _____ Phone (Evening): ( ) _____

Fax: ( ) _____ E-Mail Address: _____

Operator (if different from Customer and Owner)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone (Daytime): ( ) _____ Phone (Evening): ( ) _____

Fax: ( ) _____ E-Mail Address: _____

Docket No. 2014-0192; D&O No. 33258 filed October 12, 2015,
Transmittal Letter Dated October 19, 2015.

Generating Facility Information

Inverter Manufacturer(s):_____ Model(s)_____

Nameplate Rating: _____ (kW) _____ (kVA) _____ (AC Volts) (CEC-CSI)[1]

[ ] Single Phase
[ ] Three Phase

Prime Mover: [ ] Photovoltaic [ ] Reciprocating Engine
[ ] Fuel Cell [ ] Turbine
[ ] Other (describe) _____

Energy Source: [ ] Solar [ ] Wind
[ ] Hydro [ ] Diesel
[ ] Natural Gas [ ] Fuel Oil
[ ] Other (describe) _____

Is the equipment UL1741 Listed? [ ] Yes
[ ] No

If Yes, attach manufacturer's cut-sheet showing UL1741 listing.

UF Trip Setting: _____ UF Time Delay (Seconds): _____

Is the system self-excited with the potential to island (i.e. will the equipment package include an onsite storage system)? [ ] Yes [ ] No

Energy Storage System Information: (Customer to provide data sheets)

Manufacturer: _____ Model: _____

Size kW: _____ Max Capacity kWh: _____

Rated kW discharge: _____ Rated kW Charge:_____

[1] CEC-CSI means the California Energy Commission's ratings under the California Solar Initiative program.

Description of Storage System Operations:
(Describe mode(s) of operation) - Example: How much export or non-export, load shifting, smoothing, peak shaving, etc.)

_____

_____

_____

Will the distribution grid be used to charge the storage device?
[ ] Yes If yes, charging periods: _____
[ ] No

List components of the Generating Facility equipment package that are currently certified:

Equipment Type	Certifying Entity (e.g. UL)
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

Additional documentation required:

1. Single line or schematic drawing of the proposed Generating Facility.
2. Manufacture data sheet, schematic, or specification for Generating Facility equipment that will interconnect to the utility.

Installation Details

Installing Electrical Contractor:_____

Firm:_____ License No.: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone (Daytime): ( ) _____ Phone (Evening): ( ) _____

Fax: ( ) _____ E-Mail Address: _____

Estimated Installation Date (if known): _____

Approval Required Prior to Interconnection

Under no circumstances shall a Customer-Generator interconnect and operate a generating facility in parallel with the Company's electric system without prior written approval by the Company.

Generator/Equipment Certification

Generating systems that utilize inverter technology must be compliant with *Institute of Electrical and Electronics Engineers IEEE Std 1547* and *Underwriters Laboratories UL 1741* in effect at the time this Agreement is executed or have received written exemption from the Company from such standards, which may be granted at Company's sole discretion. Generating systems that use a rotating machine must be compliant with applicable National Electrical Code, Underwriters Laboratories, and Institute of Electrical and Electronics Engineers standards and rules and orders of the Hawaii Public Utilities Commission in effect at the time this Agreement is executed. **By signing below, the Applicant certifies that the installed generating equipment meets the appropriate preceding requirement(s) and can supply documentation that confirms compliance.**

Applicant: _____ Date: _____

Insurance

Insurance Carrier: _____

APPENDIX III
Interconnection Process Overview

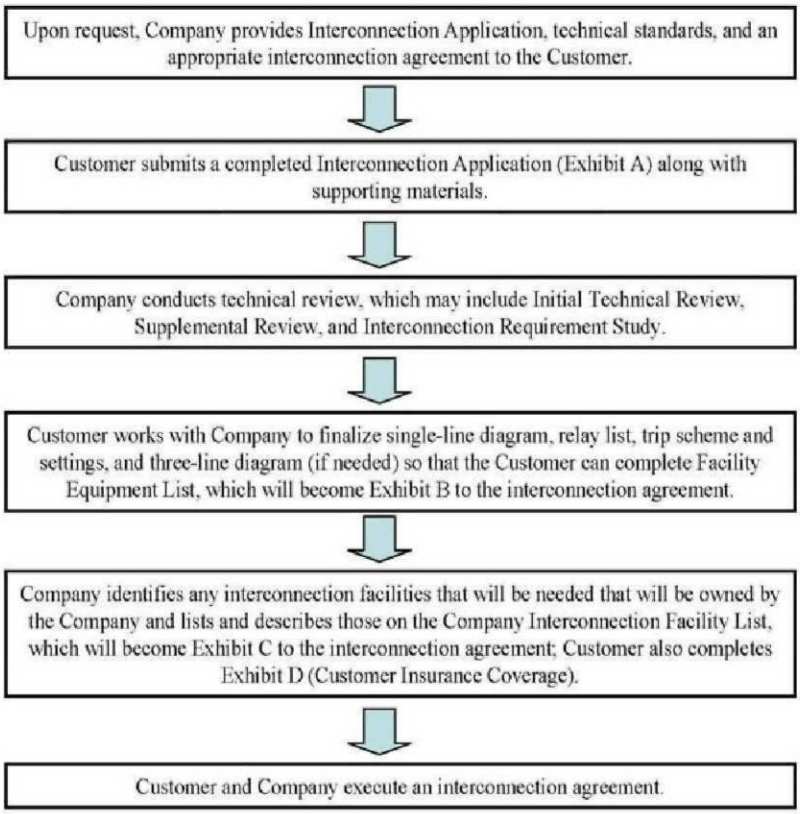
The purpose of this Appendix III is to provide a general overview of the process and procedures for interconnecting a Generating Facility that will operate in parallel with the Company's Distribution System. The general technical guidelines to facilitate the interconnection and parallel operation of Generating Facilities with the Company's Distribution System are set forth in Appendix I of this Rule 14H. For Generating Facilities subject to Rule 14H, if there is a conflict between the technical specifications set forth in Appendix I with any technical specifications set forth elsewhere in the Company's tariffs, the specifications of Appendix I shall prevail. Capitalized terms used in this Appendix III are defined in Appendix I of this Rule 14H.

1. Steps in the Interconnection Process

a. The interconnection process will be initiated when a Customer approaches or contacts the Company to request interconnection of a Generating Facility to the Company's Distribution System that will operate in parallel with the Company's Distribution System. The Company shall designate a centralized point of contact for applications to interconnect a Generating Facility to the Company's Distribution System.

b. The following flowchart provides, for illustrative purposes, the major steps in the interconnection process:

STEPS IN THE INTERCONNECTION PROCESS



c. The activities in each step shown in the flowchart are explained below:

Step 1: Within five (5) business days of receiving a Customer's request to interconnect a Generating Facility to the Company's Distribution System, the Company will provide the Customer with: (a) the Distributed Generating Facility Interconnection Standards Technical Requirements (Rule 14H Appendix I); (b) an appropriate interconnection agreement depending on the Customer's intent to export or participate in a wholesale power sale arrangement; and (c) this Interconnection Process Overview (Rule 14H Appendix III).

Step 2: The Company's interconnection review begins when a Customer submits a completed Exhibit A to Appendix II, Appendix II-A or Appendix II-B attached hereto or other Company-approved application for interconnection of a Generating Facility governed by Rule

14H ("Interconnection Application"). Along with the Customer's Interconnection Application, the Customer must also provide the design drawings, operating manuals, manufacturer's brochures/instruction manual and technical specifications, manufacturer's test reports, bill of material, protection and synchronizing relays and settings, and protection, synchronizing, and control schemes for the Generating Facility to the Company for its review. The Company shall have the right to specify the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, consistent with the technical requirements of Appendix I, that affect the reliability and safety of operation and power quality of the Company's system with which the Generating Facility seeks to interconnect ("Facility Protection Devices/Schemes"). The Company shall maintain the confidentiality of information the Customer deems confidential, unless and until a final, non-appealable Commission decision determines that disclosure is necessary to protect the public or as otherwise determined by the Commission.

Within fifteen (15) business days of the receipt of an Interconnection Application and supporting material, or such other period as is mutually agreed upon in writing by the Company and the Customer, the Company shall review the Customer's Interconnection Application and supporting material and provide written notification of its general completeness, or alternatively, incompleteness. If an Interconnection Application is deemed incomplete, the Company shall specify in a written notice the additional information that is required. The completeness determination cycle will be repeated as necessary until sufficient information is submitted by the Customer to enable the Company to review the Interconnection Application.

Step 3: Within fifteen (15) business days of the date the Customer's Interconnection Application and supporting materials are deemed complete, the Company will complete an

Initial Technical Review of the Interconnection Application. The Company shall make a determination as to whether a Generating Facility is interconnected, designed to operate in parallel or designed to function with momentary parallel operation with the Company's electric system during the Initial Technical Review.[1] The Initial Technical Review will result in the Company providing either:

(1) Expedited Review for Self-Supply Systems: Interconnection Applications for Customer Self-Supply Systems under Company's Rule 22 (Customer Self-Supply) that will export power across the Point of Interconnection for a duration exceeding 0.1 seconds but less than 60 seconds shall qualify for expedited interconnection subject to the conditions set forth in Screen 1.

(2) Simplified Interconnection or Supplemental Review: For all Interconnection Applications, other than Appendix II-B, if all of the Initial Technical Review Screens are passed, the Generating Facility qualifies for Simplified Interconnection, and an executable interconnection agreement for the Customer's signature; or, if one or more screens are not passed, notification that Supplemental Review will be required and the results, in writing, of all Initial Technical Review screenings.

If Supplemental Review is required, the Customer shall notify the Company, in writing, to proceed with the Supplemental Review, or the Customer shall agree to withdraw its

[1] **Momentary-Parallel Systems**: For Appendix II-B Applications, i.e. Application For Non-Export Distributed Generation Facilities (Momentary-Parallel Operation), if the Generating Facility is designed to operate in parallel with the Distribution System, for a duration of less than 0.1 seconds, i.e. "momentary parallel operation", then the Generating Facility qualifies for expedited interconnection. Registration shall satisfy the Customer's notice requirements set forth in Tariff Rule 3B (Change In Customer's Equipment Or Operations) and is required for purposes of determining potential load that the Company may be required to serve. Such systems shall be deemed to be "non-exporting" and shall not require reverse power protection. However, the Company may install at Company's expense, a bi-directional advanced meter. Company shall have the right to disconnect a Generating Facility without prior notice to the Customer pursuant to Rule 14H, Section 4.b, in the event the Company determines that the Generating Facility is operating in parallel with the Distribution System in excess of momentary parallel operation and Customer shall pay for any and all costs incurred by the Company in enforcing this right.

Interconnection Application. In order to expedite the process, Customer may pre-acknowledge and agree to proceed to Supplemental Review, if necessary, at the time an Interconnection Application is submitted to the Company for review. Within twenty (20) business days of notification by the Customer that it would like to move forward with Supplemental Review, the Company shall complete a Supplemental Review. The Supplemental Review will result in the Company providing either: (a) Simplified Interconnection (b) interconnection requirements beyond those for a Simplified Interconnection, and a non-binding, good faith estimate of the Company's portion of the costs to perform the interconnection requirements identified by the Supplemental Review, or (c) a determination that an Interconnection Requirements Study (IRS) is required, and a good faith cost estimate and schedule for the completion of the IRS including an identification of the specific analysis and/or reviews that will be performed as part of the IRS.

If an IRS is required, the Customer shall agree to pay the cost estimate for the IRS provided by the Company, or the Customer shall withdraw its Interconnection Application. The Company shall complete the IRS within one hundred fifty (150) calendar days of the Customer's agreement to move forward with the IRS and payment of the IRS cost is received. The completion of the IRS shall include the Company's proposal to the Customer of the following: (a) interconnection requirements and a non-binding, good faith estimate of the Company's portion of the costs to perform the interconnection requirements; and (b) protection and synchronizing relays and settings, protection, synchronizing and control schemes, and any other equipment and/or performance requirements necessary to meet the IRS requirements.

Final results of all technical screenings, Supplemental Review, and IRS will be provided in writing to the Customer.

Step 4: Based on the results of the Initial Technical Review, or Supplemental Review (if needed), or IRS (if needed), the Customer and Company will work together to finalize the single-line diagram, relay list, trip scheme and settings, and three-line diagram, which is required in the circumstances set forth in the Interconnection Application. After finalization of the single-line diagram, relay list, trip scheme and settings, and three-line diagram (if required), the Customer will make any revisions deemed necessary to the Interconnection Application and resubmit the Interconnection Application to the Company. Resubmission will not impact the Customer's interconnection position. The Customer must also complete a Facility Equipment List, which will identify equipment, space and/or data at the Generating Facility location that must be provided by the Customer for use in conjunction with the Company's Interconnection Facilities. The Facility Equipment List will be included as Exhibit B to an interconnection agreement entered between the Company and the Customer. If requested, the Company will provide assistance to the Customer to complete the Facility Equipment List.

Step 5: Within fifteen (15) business days of the completion of all activities specified in Step 4 above, or within such other period as is mutually agreed upon in writing by the Company and the Customer, the Company will complete an identification of Interconnection Facilities that are necessary to complete the interconnection and that will be owned by the Company. A list and description of the Company's Interconnection Facilities will be included as Exhibit C to the interconnection agreement entered between the Company and the Customer. The Company and Customer shall mutually agree in writing to a schedule by which the Interconnection Facilities will be constructed and a determination of when the Customer's Generating Facility shall be

connected to the Company's Distribution System. The Interconnection Facilities are project-specific, and the time to complete the facilities will depend on the complexity of the facilities required. Consistent with Section 5 of this Appendix III, the Customer shall maintain insurance coverage or be self-insured against risks arising under the interconnection agreement. The Customer Insurance Coverage will be included as Exhibit D to any interconnection agreement entered between the Company and the Customer.

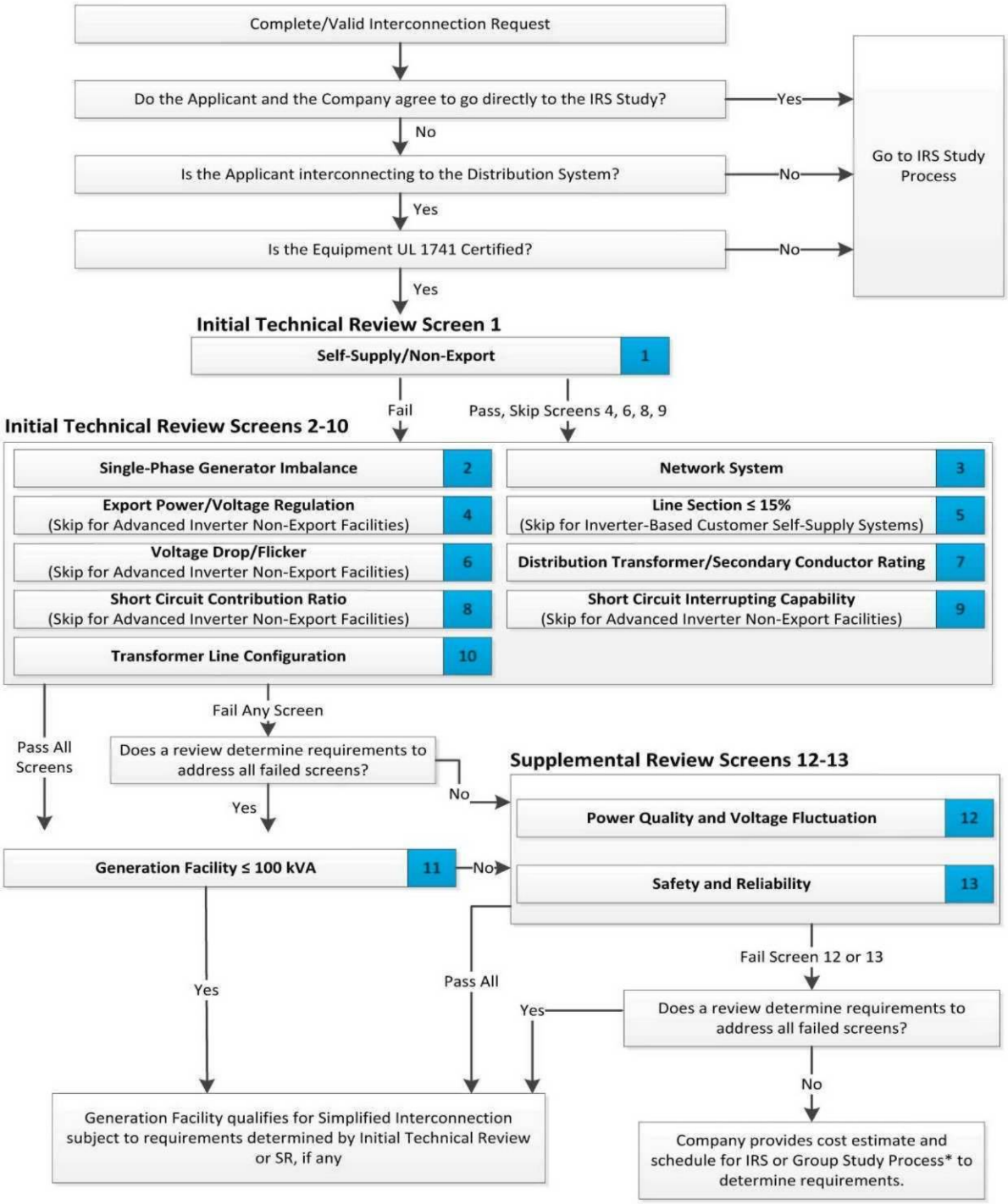
Step 6: Within five (5) business days of the completion of all activities specified in Step 5 above, the Company will provide the Customer with an executable interconnection agreement, which must be executed prior to the interconnection and parallel operation of the Customer's Generating Facility. If requested by the Customer, the interconnection agreement may be signed by the Customer and a third party that is the owner and/or operator of the Generating Facility.

The Company will provide a fully executed interconnection agreement to the Customer: (a) within fifteen (15) business days of receipt of Customer's executed interconnection agreement if all applicable City and/or County permits required for the Generating Facility have been closed and posted, and all Customer documentation required as a part of the interconnection agreement have been received; or (b) within fifteen (15) business days following the date upon which all applicable City and/or County permits required for the Generating Facility have been closed and posted, and all Customer documentation required as a part of the interconnection agreement have been received.

2. Overview of Technical Review Process

a. **Process Flowchart**: The following flowchart provides, for illustrative purposes, the major steps in the technical review process:

TECHNICAL REVIEW PROCESS FLOW CHART



* "Group Study Process" may include a consolidated IRS or a proactive utility determination of interconnection requirements covering multiple Generating Facilities.

b. **Explanation of Screens**: The following provides an explanation of the screens used in the technical review process:

Introduction:

The technical review process allows for the timely approval for the interconnection of Generating Facilities to the Company's Distribution System that will operate in parallel with the Company's Distribution System. The technical review process includes a screening to determine if a Generating Facility qualifies for Simplified Interconnection, or if Supplemental Review is needed to determine requirements, if any, beyond those of a Simplified Interconnection, or if an Interconnection Requirement Study (IRS) is needed to determine interconnection requirements. The Company will perform an Initial Technical Review unless (1) Applicant and the Company mutually agree to proceed directly to an IRS, (2) an Applicant is not connecting to the Company's Distribution System, or (3) an Applicant is interconnecting with equipment that is not UL 1741 certified, provided that the Company may permit uncertified equipment to proceed without an IRS if the equipment will provide benefits related to safety, reliability or power quality. If (1), (2), or (3) applies, the Applicant will proceed directly to an IRS.

Note: Failure to pass any screen of the Initial Technical Review process or Supplemental Review process means only that additional review is required to determine whether additional requirements, if any, are needed before the Generating Facility can be approved for interconnection with the Company's Distribution System. Although not explicitly covered in the review process, the Generation Facility shall be designed to meet all of the applicable requirements in Appendix I of Rule 14H.

Purpose:

The technical review process determines the following:

1) If a Generating Facility qualifies for Simplified Interconnection,

2) If a Generating Facility can be made to qualify for interconnection by performing a Supplemental Review that will be able to determine additional requirements, if any,

3) If an IRS is required, the cost estimates and rough schedule for performing the IRS, or

Initial Technical Review Screens (Screens 1 through 11):

Screen 1: Will power be exported across the Point of Interconnection for a duration exceeding 0.1 seconds but less than 60 seconds.

If Yes, continue to Screen 2.

If No, then to ensure the Generating Facility does not export across the Point of Interconnection, the Generating Facility must incorporate one or more of the following five options. Following that selection, continue to Screen 2, skip Screens 4, 6, 8, and 9.

Option 1 ("Reverse Power Protection"): To ensure power is never exported across the Point of Interconnection, a reverse power relay may be provided. The default setting for this protective function shall be 0.1% (export) of the service transformer's rating, with a maximum 2.0 second time delay.

Option 2 ("Minimum Power Protection"): To ensure at least a minimum amount of power is imported across the Point of Interconnection at all times (and, therefore, that power is not exported, other than for the short time periods noted), an under-power protective function may be provided. The default setting for this Minimum Power Protection shall be 5% (import) of Generating Facility's total gross rating, with a maximum 2.0 second time delay.

Option 3 (Certified Non-Islanding Protection): To ensure the incidental export of power is limited to acceptable levels, this option requires that all of the following conditions be met: a) the total gross capacity of the Generating Facility must be no more than 25% of the nominal ampere rating of producer's dedicated service equipment; b) the total gross capacity of the Generating Facility must be no more than 50% of producer's dedicated service transformer capacity rating (this capacity requirement does not apply to Customers taking primary service without an intervening transformer); and c) the Generating Facility must be Certified as Non-Islanding.

The ampere rating of the Customer's service equipment to be used in this evaluation will be that rating for which the customer's utility service was originally sized or for which an upgrade has been approved. It is not the intent of this provision to allow increased export simply by increasing the size of the customer's service panel, without separate approval for the resize.

Option 4 (Relative Generating Facility Rating): This option, when used, requires the net rating of the Generating Facility to be small enough in comparison to its host facility's minimum load such that the use of additional protective functions is not required to ensure that power will not be exported to the Company's Distribution System. This option requires the Generating Facility capacity to be no greater than 50% of the customer's verifiable minimum host load over the past 12 months. This option only applies to customers with load profile metering with at least 12 months of historical data.

Option 5 (Advanced Inverter Functionality): Inadvertent export is the unscheduled and uncompensated export of real power from a Generating Facility for a duration exceeding 0.1 seconds but less than 60 seconds. This option, which is only available to Generating Facilities smaller than 100 kW, utilizes an inverter to prevent export lasting longer than 10 seconds, i.e., export lasting longer than inadvertent export. This option requires the use of an internal transfer relay or energy management software within an inverter device that will prevent reverse power flow lasting longer than 60 seconds. To ensure limited impact to the Distribution and Transmission System, the expected frequency of inadvertent export occurrences should be less than two occurrences per 24-hour period.

Significance: 1) The Screen defines the qualification of a non-export system.

2) The Screen allows, under certain defined conditions, for Generating Facilities that incorporate certified non-islanding protection, such as an inverter, to qualify for Simplified Interconnection without implementing reverse power or minimum power protective functions (Option 3).

Note 1: Under each of the five options above, the Company may install, at Company's expense, a bi-directional advanced meter.

Note 2: Any equipment set forth in any of the five options above shall be included by the Customer in the Facility Equipment List. Such equipment is intended to monitor and prevent an extended reverse power condition in which power flows from the Generating Facility to the Distribution System.

Docket No. 2014-0192; D&O 33258 filed October 12, 2015,
Transmittal Letter Dated October 19, 2015.

Note 3: The Company shall have the right to disconnect a Generating Facility without prior notice to the Customer pursuant to Rule 14H, Section 4.b in the event the Company determines that the Generating Facility is exporting power to the Distribution System for longer than the allowable limit in the applicable option above, and Customer shall pay for any and all costs incurred by the Company in enforcing this right.

Screen 2: If the proposed Generating Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, does it cause unacceptable imbalance between the two phases of the 240 volt service?

If Yes, continue to Screen 3; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failure(s). Otherwise, Supplemental Review is required.

If No, continue to Screen 3.

Significance: Generating Facilities connected to a single-phase transformer with 120/240 V secondary voltage must be installed such that the aggregated gross output is as balanced as practicable between the two phases of the 240 volt service.

Screen 3: Is the Point of Interconnection to a Network System?

If Yes, continue to Screen 4; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

If No, continue to Screen 4.

Significance: Special considerations must be given to Generating Facilities proposed to be installed on a Network System because of the design and operational aspects of network protectors. There are no such considerations for radial Distribution Systems.

Screen 4: If exporting power across the Point of Interconnection, can the power export cause a reversal of power flow, during normally expected circuit operating conditions, at any voltage regulation device that is not bi-directional?

If Yes, continue to Screen 5; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

If No, continue to Screen 5.

Significance: If it can be assured that the Generating Facility will not export power, or if exported power will not cause a reversal of power flow at a voltage regulation device that is not designed to handle reverse power flow, the Company's Distribution System does not need to be studied for load-carrying capability or Generating Facility power flow effects on the Company's voltage regulators.

Note 1: This screen does not apply to a Generating Facility that meets the requirements of one of the five options listed in Screen 1.

Screen 5: Is the aggregate Generating Facility capacity on the Line Section less than or equal to 15% of Line Section peak?

If Yes, continue to Screen 6.

If No, continue to Screen 6; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

Significance: 1) Low penetration of Generating Facility installations should have a minimal impact on the operation and load restoration efforts of the Company's Distribution System.

2) The operating requirements for a high penetration of Generating Facilities may be different since the impact on the Company's Distribution System will no longer be minimal, therefore requiring additional study or controls.

Note 1: This screen does not apply to Advanced Inverter-Based Customer Self-Supply Systems.

Screen 6: Is the voltage flicker and/or voltage drops associated with the Generating Facility within IEEE 519, IEEE 1453, or General Order 7 limits?

If Yes, continue to Screen 7.

If No, continue to Screen 7; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

Significance: 1) This screen addresses potential voltage fluctuation problems for other customers on the distribution circuit caused by Generating Facilities, especially those that start by motoring.

2) When starting or connecting to the system, Generating Facilities should have minimal impact on the service voltage of other Customers.

3) This screen addresses voltage flicker at the Point of Interconnection caused by the Generating Facility. Passing this screen does not relieve the Customer from ensuring that its Generating Facility complies with the flicker requirements of Rule 14H.

Note 1: This screen does not apply to a Generating Facility that meets the requirements of one of the five options listed in Screen 1.

Screen 7: Do the maximum aggregated gross ratings for all the Generating Facilities connected to a secondary distribution transformer exceed the transformer, secondary conductor, fuse, or other equipment rating, absent the Applicant's generators?

If Yes, continue to Screen 8; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

If No, continue to Screen 8.

Significance: This screen addresses potential Distribution Transformer or secondary conductor, fuse, and/or other equipment overloads and steady state over voltage issues.

Screen 8: Is the Short Circuit Current Contribution Ratio within acceptable limits?

If Yes, continue to Screen 9.

If No, continue to Screen 9; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

Significance: When measured at the primary side (high side) of a Dedicated Distribution Transformer serving a Generating Facility, the sum of the short circuit contribution ratios of all generating facilities connected to the secondary side (low side) of that Distribution Transformer must be less than or equal to 0.1 (10%). If the Generating Facility passes this screen it can be expected that it will have no significant impact on the Company's Distribution System's short circuit duty, fault detection sensitivity, relay coordination or fuse-saving schemes.

Note 1: This screen does not apply to a Generating Facility that meets the requirements of one of the five options listed in Screen 1.

Screen 9: Is the Short Circuit interrupting capability exceeded?

If Yes, continue to Screen 10; Initial Technical Review Screens 2 through 10 shall be completed in their entirety. If any of the Screens 2 through 10 are not passed,

Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

If No, continue to Screen 10.

Significance: This Screen determines whether the Generating Facility, in aggregate with other generation on the distribution circuit, causes any distribution protective devices and equipment on the system to exceed 87.5% of their short circuit interrupting capability. If the Generating Facility passes this screen it can be expected that it will have no significant impact on the Customer's service equipment.

Note 1: This screen does not apply to a Generating Facility that meets the requirements of one of the five options listed in Screen 1.

Screen 10: Is the Line Configuration Screen (see below) acceptable for Simplified Interconnection?

If Yes, continue to Screen 11.

If No, continue to Screen 11; Initial Technical Review Screens 2 through 10 shall be completed in its entirety. If any of the Screens 2 through 10 are not passed, Company may perform a review of the failed Screen(s) during the Initial Technical Review period which may determine additional requirements needed to address the failed Screen(s). Otherwise, Supplemental Review is required.

Line Configuration Screen: Identify primary distribution line configuration that will serve the Generating Facility. Based on the type of interconnection to be used for the Generating Facility, determine from the table below if the proposed Generating Facility passes the screen.

Table I

Primary Distribution Line Type Configuration	Type of Interconnection to be Made to Primary Distribution Line	Results/Criteria
Three-phase, three wire	Any type	Pass Screen
Three-phase, four wire	Single-phase, line-to-neutral	Pass Screen
Three-phase, four wire (For any line that has such a section OR mixed three wire and four wire)	All others	To pass, aggregate Generating Facility nameplate rating must be less than or equal to 10% of Line Section peak load

Significance: If the primary distribution line serving the Generating Facility is of a "three-wire" configuration, or if the Generating Facility's distribution transformer is single-phase and connected in a line-to-neutral configuration, then there is no concern about overvoltages to the Company's or other Customer's equipment caused by loss of system neutral grounding during the operating time of the non-islanding protective function.

Note 1: This Screen does not apply to Generating Facilities with a Gross Rating of 10 kW or less.

Screen 11: Is the gross rating of the Generating Facility 100 kVA or less?

If Yes, the Generating Facility qualifies for Simplified Interconnection. Skip remaining screens.

If No, continue to Screen 12.

Significance: After meeting the requirements of the previous screens, this Generating Facility will likely have a reduced impact on the Company's Distribution System.

c. Within fifteen (15) business days of the date the Customer's Interconnection Application is deemed complete, the Company will complete the Initial Technical Review and notify the Customer of the results.

d. In the event that Supplemental Review would otherwise be triggered by a failure of Screens 1 through 11, Company may perform a review of the failed screen(s) during the Initial Technical Review period which may determine the additional requirements needed to address the failed screen(s) without the need for Supplemental Review. Otherwise, Supplemental Review is required. Some examples of requirements that may be available to address the failure of Screens 1 through 11 without the need for Supplemental Review include:

1. Replace an overloaded Distribution Transformer with a larger transformer.
2. Replace overloaded secondary conductors with larger conductor.
3. Installation of an appropriately sized grounding transformer or other means to effectively ground a generator.
4. Transformer load tap changer upgrades.
5. Modified voltage and frequency ride-through settings.
6. Active and reactive power requirements.
7. Determine if phase balancing on the transformer is possible with minimal review.
8. If possible without further study, check if the Generating Facility will actually overstress equipment.

e. If Company performs a review of failed Screen(s) 1 through 11 during the Initial Technical Review period and is able to determine the additional requirements needed to address the failed screen(s) and such additional requirements includes equipment, space and/or data at

the Generating Facility location to be provided by the Customer for use in conjunction with the Company's Interconnection Facilities, then the Customer must also complete a Facility Equipment List, which will identify such equipment, space and/or data. The Facility Equipment List will be included as Exhibit B to any interconnection agreement entered between the Company and the Customer. If requested, the Company will provide assistance to the Customer to complete the Facility Equipment List. Company will provide a non-binding, good faith estimate of the Company's portion of the costs to perform the interconnection requirement that has been identified.

f. The Initial Technical Review will result in the Company providing either: (a) if all of the Initial Technical Review Screens are passed, the Generating Facility qualifies for Simplified Interconnection, and an executable interconnection agreement for the Customer's signature; or, (b) if one or more screens are not passed, notification whether Supplemental Review will be required and the results, in writing, of all Initial Technical Review screenings.

3. <u>Supplemental Review</u>

a. If a Generating Facility has failed to meet one or more of the Initial Technical Review screens for Simplified Interconnection as proposed, and a review of the failed screen(s) cannot determine the requirement(s) to address the failure(s), then the Company will notify the Customer upon completing Initial Technical Review that a Supplemental Review as described in this section is needed.

b. If Supplemental Review is required, the Customer shall notify the Company, in writing, to proceed with the Supplemental Review, or the Customer shall agree to withdraw the Interconnection Application. If the Customer does not notify the Company within fifteen (15) business days, the Interconnection Application shall be deemed to be withdrawn.

c. The Supplemental Review shall be completed, absent any extraordinary circumstances, within twenty (20) business days of receipt of the Customer's approval, in writing, to proceed with the Supplemental Review. The Company, for good cause, without extraordinary circumstances, may modify the time limits to conduct the Supplemental Review and shall inform the Customer in writing of the need to modify the applicable time limits. The modified time limit shall be mutually agreed upon in writing between the Company and the Customer.

d. The Supplemental Review will result in the Company providing either: (a) Simplified Interconnection, (b) interconnection requirements beyond those for a Simplified Interconnection, and a non-binding, good faith estimate of the Company's portion of the costs to perform the interconnection requirements identified by the Supplemental Review, or (c) a determination that an IRS is required and a good faith cost estimate and schedule for the completion of the IRS, including an identification of the specific analysis and/or reviews that will be performed as part of the IRS.

e. The Supplemental Review consists of Screens 12 and 13. If any of the Screens are not passed, a review of the failed Screen(s) within the timeframe established for Supplemental Review, or any modified time limits, may determine interconnection requirements or special design or operating requirements of the Generating Facility to address the failure(s), in which case an IRS may not be necessary. Otherwise, an IRS is required. Some examples of requirements that may be available to address the failure of Screens 12 and 13 without the need for an IRS include:

1. Replacing a fixed capacitor bank with a switched capacitor bank.

2. Adjustment of line regulation settings.

3. Reconfiguration of the distribution circuit.

4. A modified operating schedule of the Generating Facility.

5. Additional technical requirements of the Generating Facility equipment.

Supplemental Review Screens (Screens 12 – 13):

Screen 12 (Power Quality and Voltage Tests): In aggregate with existing generation on the Line Section,

a) Can it be determined within the Supplemental Review that the voltage can be maintained in compliance with General Order 7?

b) Can it be determined within the Supplemental Review that the voltage fluctuation is within acceptable limits as defined by IEEE 1453 or utility practice similar to IEEE 1453?

c) Can it be determined within the Supplemental Review that the harmonic levels meet IEEE 519 limits at the point of interconnection?

If Yes to all, continue to Screen 13.

If No, a review of the failure may determine the additional requirements needed to address the failure; Continue to Screen 13.

Significance: Adverse voltages and undesirable interference may be experienced by other customers on the Company's Distribution System caused by operation of the Generating Facility.

Screen 13 (Safety and Reliability Tests): Does the location of the proposed Generating Facility or the aggregate generation capacity on the Line Section create impacts to safety or reliability that cannot be adequately addressed without an IRS?

If Yes, a review of the failure during the Supplemental Review may determine the requirements to address the failure, e.g. a Customer Self-Supply System that complies

with the Technical Specifications stated in Company Rule 22 (Customer Self-Supply); otherwise, an IRS is required.

If No, Supplemental Review is complete.

Significance: In the safety and reliability test, there are several factors that may affect the nature and performance of an interconnection. These include, but are not limited to:

1. Generation energy source
2. Modes of synchronization
3. Unique system topology
4. Possible impacts to critical load customers
5. Possible safety impacts

The specific combination of these factors will determine if any system study requirements are needed. The following are some examples of the items that may be considered under this screen:

1. Does the Line Section have significant minimum loading levels dominated by a small number of customers (*i.e.*, several large commercial customers)?
2. Is there an even or uneven distribution of loading along the feeder?
3. Is the proposed Generating Facility located in close proximity to the substation (i.e. <2.5 electrical line miles), and is the distribution line from the substation to the customer composed of large conductor/cable (*i.e.*, 600A class cable)?

4. Does the Generating Facility incorporate a time delay function to prevent reconnection of the generator to the system until system voltage and frequency are within normal limits for a prescribed time?

5. Is operational flexibility reduced by the proposed Generating Facility, such that transfer of the Line Section(s) of the Generating Facility to a neighboring distribution circuit/substation may trigger overloads or voltage issues?

6. Does the Generating Facility utilize certified anti-islanding functions and equipment?

f. The Supplemental Review shall be completed within twenty (20) business days of completion of Initial Technical Review.

e. If the Supplemental Review results in interconnection requirements beyond those for a Simplified Interconnection, the Customer must also complete a Facility Equipment List, which will identify equipment, space and/or data at the Generating Facility location to be provided by the Customer for use in conjunction with the Company's Interconnection Facilities. The Facility Equipment List will be included as an Exhibit to any interconnection agreement entered between the Company and the Customer. If requested, the Company will provide assistance to the Customer to complete the Facility Equipment List.

4. <u>Interconnection Requirements Study ("IRS")</u>

If the Supplemental Review process fails to determine interconnection requirements, then an IRS shall be performed as follows:

a. If an IRS is necessary, the Company will provide the Customer with a good faith cost estimate and schedule for the completion of the IRS including an identification of the specific analysis and/or reviews that will be performed as part of the IRS. A cost estimate and schedule for the analyses will be provided to the Customer before the overall study is started. This generally would be done when the Company responds to the Customer with the findings of the Supplemental Review.

b. If an IRS is required, the Customer shall agree to pay the cost estimate for the IRS provided by the Company, or the Customer shall withdraw its Interconnection Application. If the Customer does not agree to perform an IRS or agree to pay the cost estimate for the IRS within fifteen (15) business days, the Interconnection Application shall be deemed to be withdrawn. Customers with existing Generating Facilities already operating in parallel with the Company's system on March 21, 2003, will not be charged for any IRS.

c. The scope and cost of the IRS will depend on the complexity of the Company's Distribution System to which the Generating Facility is requesting to interconnect, which must be modeled, and the degree to which the Generating Facility will affect the Company's system. Examples of the analyses and/or reviews that fall within an IRS include: (1) Feeder Load Flow; (2) Dynamic Stability Analysis; (3) Transient Overvoltage; and (4) Short Circuit and Relay Coordination.

d. The Company may perform the analyses included in the IRS. The Company may also contract the analyses or parts of the analyses 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 mutually agreeable to both the Company and the Customer.

e. The Company shall complete or have a consultant complete the IRS within one hundred fifty (150) calendar days of the Customer's payment of the IRS. The Company, for good cause, without extraordinary circumstances, may modify the time limits to conduct the IRS and shall inform the Customer in writing of the need to modify the applicable time limit. The modified time limit shall be mutually agreed upon in writing between the Company and the Customer. The Company, shall provide a written letter to the Customer to explain all delays in completing the IRS beyond the completion schedule of one hundred fifty (150) calendar days.

f. The Customer and Company may agree (to be documented in writing) to have the IRS performed by a qualified third-party consultant, or by a qualified employee, contractor, or agent of the Customer at the Customer's sole cost so long as the employee, consultant, contractor, or agent meets the following qualifications: (1) experience and familiarity with electric utility system modeling, feeder load flow analyses, dynamic stability analyses, transient overvoltage analyses, and short circuit and relay coordination; (2) knowledge of electric utility system operation, transmission and distribution system planning and protection, and distributed generation interconnection issues; and (3) knowledge of the unique characteristics and needs of small, non-interconnected island electric grids and the unique challenges and operational requirements of such systems. In addition, the scope of work of the third-party consultant's study shall be mutually agreeable to both the Company and the Customer. Elements of the study scope of work may include items such as: (1) Feeder Load Flow; (2) Dynamic Stability Analysis; (3) Transient Overvoltage; and (4) Short Circuit and Relay Coordination. All study recommendations by the Customer's consultant shall be reviewed and approved by the Company.

g. The Company may consolidate more than one Generating Facility in an IRS if the Generating Facilities are on the same Distribution System feeder that is the subject of the IRS, provided that the Customers consent to consolidation and the sharing of technical information between them. Parties to a consolidated IRS shall pay study and upgrade costs on a pro rata basis as agreed by the parties that desire to share the costs for the IRS. The cost may be prorated based upon the expected annual electricity output of the respective facilities or the capacity of the Generating Facility.

h. The IRS may identify the need for Company Interconnection Facilities required to facilitate interconnection of the Generating Facility. The Customer will be responsible for the cost of any Company Interconnection Facilities associated with the interconnection of its Generating Facility. An identification of the Company Interconnection Facilities and an estimated cost of the Company Interconnection Facilities shall be listed in Exhibit C (Interconnection Facilities Owned by the Company) to the interconnection agreement entered between the Company and the Customer. The Customer will be responsible for the cost of any Company Interconnection Facilities associated with the interconnection of its Generating Facility.

i. If the Company determines that there are benefits to the utility system due to the Company Interconnection Facilities, a credit reflecting these benefits shall be provided to the Customer, subject to Commission approval. For example, if there is a planned Distribution System addition that may be deferred or displaced due to the addition of the Company Interconnection Facilities associated with interconnection of a Generating Facility, the dollar

value of the deferral or displacement would be determined and proposed to be credited to the Customer (subject to Hawaii Public Utility Commission's approval) as a line item in Exhibit C to the interconnection agreement (Interconnection Facilities Owned by the Company), Section 2 (Customer Payment to Company for Company Interconnection Facilities, Review of Facility, and Review of Verification Testing). The calculation of the benefits to the utility system will be examined on a case-by-case basis taking into account what Distribution System addition(s) would have been deferred or displaced by the Company Interconnection Facilities that resulted from the interconnection of a Generation Facility. The Company would then calculate a dollar value of the deferral or displacement, and propose to credit the Customer for that deferral or displacement value. The Company shall file a letter providing the Commission with sufficient information to document the proposed credit to be provided to the Customer for said deferral or displacement value. The proposed deferral or displacement value would not be credited to the Customer until the Commission approves such credit.

5. Insurance Coverage

a. In accordance with Commission Decision and Order No. 22248, Docket No. 03-0371, the Company will not impose a standardized insurance requirement for distributed generation projects. However, the Customer is obligated to carry adequate insurance in forms and amounts that are commercially reasonable for each particular situation. The Customer bears responsibility for determining its insurance requirements. Prior to execution of the standard interconnection agreement, the Customer shall disclose if it will be self-insured (and if so its means and capability to self-insure) or if it will obtain an insurance policy (and if so in what forms and amounts). The Customer shall provide evidence of such insurance, including insurer's acknowledgement that coverage applies with respect to the standard interconnection agreement,

by providing certificates of insurance to the Company prior to any parallel interconnection, or, if insurance is being modified, within 30 days of any change.

b. As general guidance, the Company recommends consideration of a commercial general liability policy, covering bodily injury and property damage. The Company also recommends that coverage amounts be considered relative to the nameplate rating of the generator, with higher amounts of coverage for larger generators. Additionally, the Company recommends consideration of the following insurance provisions: (1) naming the Company, its directors, officers, agents, and employees as additional insureds; (2) inclusion of contractual liability coverage for written contracts and agreements including the standard interconnection agreement; (3) inclusion of provisions stating that the insurance will respond to claims or suits by additional insureds against the Customer or any other insured thereunder; and (4) inclusion of provisions that the insurance is primary with respect to the Customer and the Company. The adequacy of the coverage afforded by the insurance should be reviewed by the Customer from time to time, and if it appears in such review that risk exposures require an increase in the coverages and/or limits of this insurance, the Customer should make such increase to that extent.

6. Resolution of Disputes

a. If there is a dispute between the Customer and the Company as to whether an IRS is required, or as to the scope and cost of the study, then the Company generally would use the following procedures: (1) the Company's Contact Person would inform the Customer of the reasons for and scope of the study required; (2) if the Customer disagrees with the conclusion, then the Customer would meet with representatives from the Company to discuss the matter; (3) if the Customer continues to disagree with the conclusion, then the Customer would write to the Company's Contact Person explaining the position of the Customer, and the Company's Contact

Person would respond in writing within fifteen (15) business days[2] (so that any dispute is reduced to writing); (4) if the parties continue to have a dispute, then authorized representatives from the Company and Customer (having full authority to settle the dispute) would meet in Hawaii (or by telephone conference) with the meeting to be scheduled within fifteen (15) business days of a written request and attempt in good faith to resolve the dispute; and (5) if the parties continue to have a dispute, then the parties may engage in a form of alternative dispute resolution agreeable to both parties, or a party may request that the Commission resolve the matter by filing a written request with the Commission attaching the relevant information and correspondence, and serving the request on the other party and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii.

c. If there is a dispute as to the need for interconnection equipment, protective devices or control systems, then the Company generally would use the following procedures: (1) the Company's Contact Person would inform the Customer of the reasons for the interconnection equipment/protective devices/control systems; (2) if the Customer disagrees with the conclusion, then the Customer would meet with representatives from the Company to discuss the matter; (3) additional analyses may be conducted by the Company at the request of a Customer that questions the need for particular interconnection equipment/protective devices/control systems if the Customer pays for the analyses; (4) if the Customer continues to disagree with the conclusion, then the Customer would write to the Company's Contact Person explaining the position of the Customer, and the Company's Contact Person would respond in writing within

[2] The Company, for good cause, may modify the time limit. If the Company modifies the time limit, it shall notify the Customer in writing of the modification and the cause for the modification.

fifteen (15) business days[3] (so that any dispute is reduced to writing); (5) if the parties continue to have a dispute, then authorized representatives from the Company and Customer (having full authority to settle the dispute), would meet in Hawaii (or by telephone conference) with the meeting to be scheduled within fifteen (15) business days of a written request and attempt in good faith to resolve the dispute; and (6) if the parties continue to have a dispute, then the parties may engage in a form of alternative dispute resolution agreeable to both parties, or a party may request that the Commission resolve the matter by filing a written request with the Commission attaching the relevant information and correspondence, and serving the request on the other party and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii.

d. Customers are not required to exhaust the Company's dispute resolution procedures set forth above before proceeding under provisions applicable to informal or formal complaints or other provisions contained under the Rules of Practice and Procedure before the Public Utilities Commission, currently codified in Title 6, Chapter 61, Subchapter 5 of the Hawaii Administrative Rules, or any other applicable statutes, orders, rules, or regulations. If any such proceeding is initiated, the Customer shall notify the Company's Contact Person in writing that it does not desire to continue the Company's dispute resolution procedures.

[3] The Company, for good cause, may modify the time limit. If the Company modifies the time limit, it shall notify the Customer in writing of the modification and the cause for the modification.

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix F – Rule [XX] CBRE Tariff

January xx, 2016

This document has been provided separately in this filing.
(See Exhibit A)

EXHIBIT B

APPENDIX G

Mutual Confidentiality and Non-Disclosure Agreement

APPENDIX G
MUTUAL CONFIDENTIALITY AND NON-DISCLOSURE AGREEMENT
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP

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

IPP has proposed a nominal [ ] MW, solar plant located at [LOCATION] on the island of O'ahu, State of Hawai'i ("Project"). 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 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 (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, organizational structure and internal practices, forecasts, sales and other financial results, records and budgets, and business, marketing, development, sales and other commercial 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, ideas, methods and discoveries, 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 degree 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; or

(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.

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 take reasonable steps to safeguard and protect the confidentiality of the 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 or similar process) or shall be advised by counsel to disclose any of the Confidential Information, the compelled party shall undertake reasonable efforts to provide the other party with prompt notice 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, 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, the Recipient will return to the Provider within thirty (30) business days, all copies of Confidential Information in tangible form received from the Provider in Recipient's or its Representatives' possession or certify within such period that it has destroyed such Confidential Information; provided, however, that 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.

7. 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. 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. The Recipient also agrees that it is not entitled to rely on the accuracy or completeness of any Confidential Information and that it 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.

8. 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, to purchase any products or services from the other, or to require either party to disclose any particular information to the other. Nothing in this Agreement shall imply any partnership or joint venture between the parties or be construed as making either party the agent of the other. Either party may offer 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 make any statement to the general public concerning such transaction or the absence thereof without the express prior written consent of the other.

9. Property Rights in Confidential Information

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

10. 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.

11. Remedies

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 inadequately compensable in damages. 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 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.

12. Notice

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

(b) Any notice required or permitted to be given in writing under this Agreement shall be (i) mailed by certified mail, postage prepaid, return receipt requested, (ii) sent by overnight air courier service, (iii) personally delivered to a representative of the receiving party, (iv) sent by facsimile (provided an identical notice is also sent simultaneously by mail, overnight

courier, or personal delivery as otherwise provided in this Section 12), or (v) sent by email (provided receipt thereof is confirmed via email or in writing by the recipient) and any such notice shall be deemed given (A) when received if personally delivered or sent by overnight air courier service, (B) on the date of transmission if sent by facsimile transmission, (C) three business days after being deposited in the U.S. mail, certified, postage prepaid and return receipt requested, or (D) when received if sent in an email, the receipt of which has been confirmed by the recipient. All such communications shall be mailed, sent or delivered, addressed to the party for whom it is intended, using the contact information provided below or such other contact information as the parties may designate from time to time:

If to the Company:

Hawaiian Electric Company, Inc.
Attention: Dmitri Jarocki, Director Energy Procurement
Telephone: (808) 543-5679
Email: dmitri.jarocki@hawaiianelectric.com

With a copy to:

Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawai'i 96840
Attention: Susan A. Li, Senior Vice President, General Counsel, Chief Compliance Officer & Corporate Secretary
Facsimile: 808- 543-7302
Email: susan.li@hawaiianelectric.com

If to the IPP:

[Insert address here and IPP's other contact information below]
Attention:
Facsimile:
Email:

13. No Waiver

No failure or delay by a party in exercising any right, power or privilege under this Agreement shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power or privilege hereunder. No waiver of any provision of this Agreement shall be effective unless in writing and executed by the party waiving the right.

14. Governing Law

This Agreement is made under and shall be governed by and construed in accordance with the laws of the State of Hawai'i, and any action brought with respect to the matters contained in this Agreement shall be brought in the federal or state courts located in the State of Hawai'i. Each party 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 Hawai'i is an inconvenient forum.

15. Assignment Prohibited

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

16. Entire Agreement

This Agreement constitutes the entire agreement of the parties with respect to the subject matter contained herein, and supersedes all prior and contemporaneous understandings, agreements, representations and warranties, both written and oral, with respect to each subject matter. This Agreement may only be amended, modified or supplemented by an agreement in writing signed by each party hereto.

17. 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 shall survive following expiration or termination of this Agreement.

18. Severability

If any provision of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

19. Counterparts

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. This Agreement may also be executed by exchange of executed copies via facsimile or other electronic means, such as PDF, in which case, but not as a condition to the validity of the Agreement, each party shall subsequently send the

other party by mail the original executed copy. A party's signature transmitted by facsimile or similar electronic means shall be considered an "original" signature for 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.
("Company")

Date: _____

By: _____
Print Name: _____
Its: _____

Date: _____

By: _____
Print Name: _____
Its: _____

[Insert Name of IPP]

_____
("IPP")

Date: _____

By: _____
Print Name: _____
Its: _____

EXHIBIT B

APPENDIX H

Interconnection Cost Information

APPENDIX H
INTERCONNECTION COST INFORMATION
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP

Developers are responsible for the cost of interconnecting their project with the Hawaiian Electric system. To assist developers 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, and transmission or distribution line cost to the existing Hawaiian Electric System. The per unit cost figures below must 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 project proposal must 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 proposed project's requirements are different than what is assumed in the notes, the developer must identify each difference and provide an estimated additional cost or savings resulting from those different requirements. See also Attachments 1 and 2 to this Appendix for example Single Line Diagram and notes for typical interconnections to Hawaiian Electric's 46 kV system.

Transmission & Distribution Line Interconnection Costs

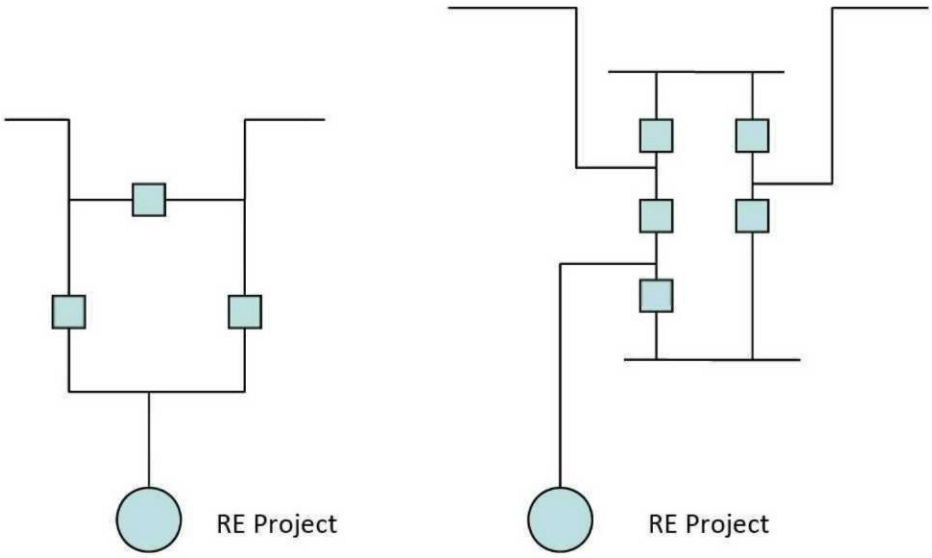
Component	Description	Cost per mile
1	New 138 kV Overhead line (accessible 500' spans)	$4,059,000
2	New 46 kV Overhead line (accessible 250' spans)	$892,000
3	New 12 kV Overhead line (accessible 150' spans)	$1,046,000
4	New 138 kV Overhead line (inaccessible 500' spans)	$5,043,000
5	New 46 kV Overhead line (inaccessible 250' spans)	$1,107,000
6	New 12 kV Overhead line (inaccessible 250' spans)	$984,000
7	138 kV overbuild on existing 46 kV line (accessible 500' spans)	$4,674,000
8	46 kV overbuild on existing 12 kV line (accessible 250' spans)	$2,583,000
9	138 kV overbuild on existing 46 kV line (inaccessible 500' spans)	$5,904,000
10	46 kV overbuild on existing 12 kV line (inaccessible 250' spans)	$3,198,000
11	New 138 kV Underground line Dielectric Cable	$12,668,000

Notes:

1. Easement and/or land costs are NOT included with these estimates.
2. EA/EIS cost are NOT included with these estimates.
3. Components 7 and 9 - Overbuilding a 138 kV line on existing 46 kV pole line assumes the removal of the existing 46 kV poles.
4. Components 8 and 10 – Overbuilding a 46 kV line on existing 12 kV pole line – assumes the removal of some of the existing 12 kV poles.
5. Components 4, 5, 6, 9 and 10 include 25% contingency for inaccessible or mountainous areas.

6. All estimates are provided in 2018 dollars.
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. Components 1, 4, 7 and 9 assume steel pole construction.
9. Components 2, 3, 5, 6, 8 and 10 assume wood pole construction.
10. Components 7 and 9 – Extending the 46 kV sized easement to a 138 kV sized easement – is NOT included with these estimates.
11. Components 8 and 10 - assumes the 12 kV sized easement is acceptable for a 46 kV line.
12. Component 11 - based on 1780 KCM AL 138kV (2000A) cable, includes duct bank and MH installation

Substation (138 kV) Interconnection Costs



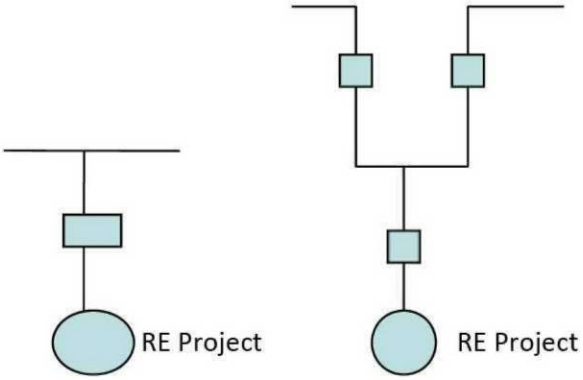
Component	Description	Cost
1	3 – 138 kV circuit breaker substation	$9,900,000
2	5 – 138 kV circuit breaker substation	$10,800,000

Cost estimates for the design and construction of the interconnection of CBRE to a new 138kV Substation were based on the following assumptions:

1. The scope of the Project is assumed to be similar to recently designed 138kV Substations. A preliminary SLD and design notes must be issued. In addition, an IRS study must be completed prior to finalizing the SLD requirements.
2. The estimate is to be performed before engineering design is authorized.
3. The estimate is to be performed before bids are received for materials and outside services.

4. Estimate does not include hours and material costs for Project Management, Planning, Metering, T&D and Telecom.
5. Substation land that is received has been graded per Hawaiian Electric's civil and structural requirements. No costs for excavation and fill are included in the estimate.
6. Estimate is based on the attached Substation IPP Company Seller Responsibility Matrix.
7. RTU points are unspecified at this time. For the purpose of this estimate, material cost and labor hours are assumed to be similar to previous RTU installations.
8. The design, procurement and installation costs of the new substation are included in the consultant and contractor costs.
9. Adequate HECO labor will be available to complete the construction of the Project in order to meet the specified service date.
10. Material cost will escalate 5% per year due to material demand and/or State/Federal Tax increases unless otherwise stated in the cost estimate.
11. Allowance for overtime rates are not included since overtime is embedded in the standard UI Planner Labor Rates.

Substation (46 kV) Interconnection Costs



Component	Description	Cost
1	1 – 46 kV circuit breaker substation	$3,900,000
2	3 – 46 kV circuit breaker substation	$5,100,000

Cost estimates for the design and construction of the interconnection of CBRE to an existing 46kV Substation were based on the following assumptions:

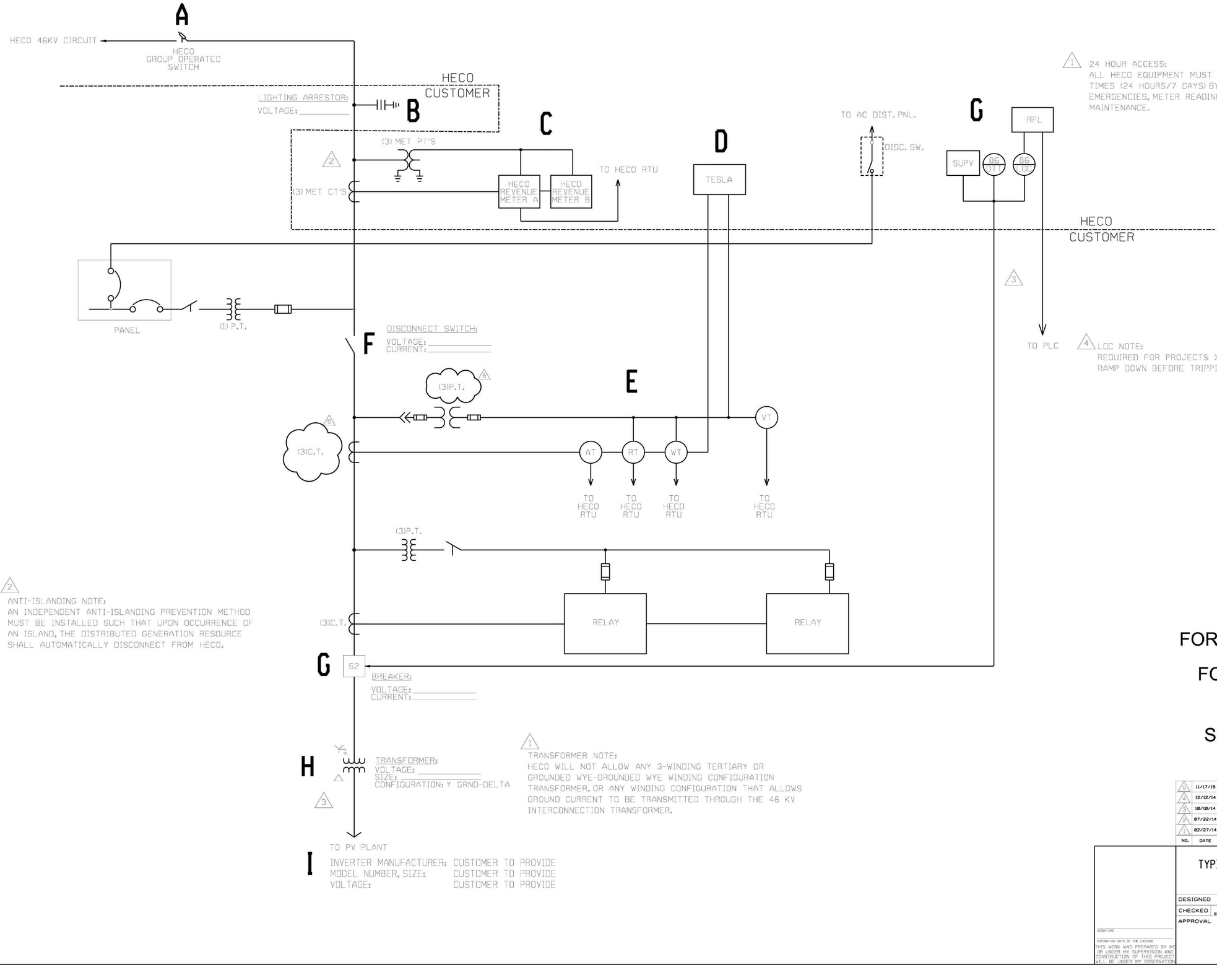
1. The scope of the Project is assumed to be similar to a FIT3 IPP project. See Attachment 1 and Attachment 2 to this Appendix H for example Single Line Diagram and Notes. A preliminary SLD and design notes must be issued. In addition, an IRS study must be completed prior to finalizing the SLD requirements.
2. The estimate is to be performed before engineering design is authorized.

3. The estimate is to be performed before bids are received for materials and outside services.
4. Estimate does not include hours and material costs for Project Management, Planning, Metering, T&D and Telecom.
5. Estimate is based on the attached Substation IPP Company Seller Responsibility Matrix.
6. RTU points are unspecified at this time. For the purpose of this estimate, material cost and labor hours are assumed to be similar to previous RTU installations.
7. The design, procurement and installation costs of the Developer substation are included in the consultant and contractor costs.
8. Estimate does not include hours for drawings not reflecting field conditions.
9. Adequate HECO labor will be available to complete the construction of the Project in order to meet the specified service date.
10. Material cost will escalate 5% per year due to material demand and/or State/Federal Tax increases unless otherwise stated in the cost estimate.
11. Allowance for overtime rates are not included since overtime is embedded in the standard UI Planner Labor Rates.

Telecommunication Interconnection Costs

1. Point-to-point microwave: $1,043,000 with the following assumptions:
    a. There is line-of-sight between the communications endpoints.
    b. Frequencies are available.
    c. There are existing structures/buildings and available space on either end to house the radio equipment.
    d. Telecommunications grounding standards are up-to-date at both sites.
    e. 48 V DC power is available.
    f. This estimate does not include any special site-specific permit/approval that is may be required.
    g. Space is available to locate antenna towers/structures at both ends.
    h. Interconnection to Hawaiian Electric's existing communications is not included.
2. Fiber with overbuild and new construction: $302,000 per mile with the following assumptions:
    a. The poles are in good condition and do not need replacing.
    b. The poles are not overloaded.
    c. The poles and the attachments are in accordance with NESC 2002 and no work is required to upgrade the poles to current standards.
    d. Estimate provided in 2018 dollars.
3. Telephone: $82,000 with the following assumptions:
    a. Telephone communication is normally used for SCADA (Supervisory Control and Data Acquisition) applications.
    b. Existing telephone network is in close proximity to the substation.

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



1 24 HOUR ACCESS:
ALL HECO EQUIPMENT MUST BE READILY ACCESSIBLE AT ALL TIMES (24 HOURS/7 DAYS) BY HECO PERSONNEL FOR EMERGENCIES, METER READING, INSPECTION, TESTING, AND MAINTENANCE.

2 ANTI-ISLANDING NOTE:
AN INDEPENDENT ANTI-ISLANDING PREVENTION METHOD MUST BE INSTALLED SUCH THAT UPON OCCURRENCE OF AN ISLAND, THE DISTRIBUTED GENERATION RESOURCE SHALL AUTOMATICALLY DISCONNECT FROM HECO.

1 TRANSFORMER NOTE:
HECO WILL NOT ALLOW ANY 3-WINDING TERTIARY OR GROUNDED WYE-GROUNDED WYE WINDING CONFIGURATION TRANSFORMER, OR ANY WINDING CONFIGURATION THAT ALLOWS GROUND CURRENT TO BE TRANSMITTED THROUGH THE 46 KV INTERCONNECTION TRANSFORMER.

4 LOC NOTE:
REQUIRED FOR PROJECTS > 5MW REQUIRING RAMP DOWN BEFORE TRIPPING

PRELIMINARY

FOR INITAL APPLICATION
NOT TO BE USED
FOR CONSTRUCTION

ALSO REFER TO
SLD DESIGN NOTES

NO.	DATE	REVISIONS	BY	CHK'D	APP'D
5	11/17/15	NUMBER OF PTS AND CTS FOR TESLA/TRANSDUCERS	SKRI	SKRI	
4	12/12/14	LOC REQUIREMENT NOTE	KK	LJC	
3	10/10/14	TSF CONNECTION CONFIG; ADDED RFL AND DEVICE *	JS	LJC	
2	07/22/14	METER SEQUENCE CHANGE, REM FUSE & SW, ISLANDING NOTE	JS	LJC	
1	02/27/14	TRANSFORMER AND ACCESS NOTE	JS	LJC	

TYPICAL FIT TIER 3 AND PPA SINGLE LINE DIAGRAM FOR INITIAL APPLICATION

DESIGNED | DRAWN | DATE 09-23-2013 | SCALE NONE
CHECKED ELEC. MECH. STRUC.
APPROVAL

ENGINEERING DEPARTMENT
HAWAIIAN ELECTRIC CO., INC.
HONOLULU, HAWAII

DRAWING NUMBER | REV 5

SIGNATURE
EXPIRATION DATE OF THE LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION

EXHIBIT B
APPENDIX H
ATTACHMENT 1
PAGE 1 OF 1

APPENDIX H - Attachment 2
Notes to be added to the 46kV Waiver PV Project Single Line Diagram

PROPOSED PROJECT NAME:	
PROPOSED PROJECT SIZE:	
SLD REVISION NUMBER AND DATE:	
HECO REVIEW DATE:	
HECO SUBSTATION:	
HECO 46KV CIRCUIT:	
HECO 46KV CIRCUIT BREAKER #:	

1. By operation procedure(s), the Project shall be paralleled with the HECO system only when the _____ (46kV circuit name) 46 kV circuit is in normal operating configuration served via breaker _____ (HECO Breaker #) at _____ (HECO Substation name) Substation.

2. Upon receipt of direct transfer trip signal from _____ (HECO Substation name) Substation, trip and block close Customer's 46 kV breaker CB-XX (HECO# XXXX) via HECO-owned SCADA resettable lockout relay ("86/DTT").

3. Upon DTT communication channel failure longer than 6 seconds:
    a. HECO-owned RFL to provide signal to Customer to initiate Customer performed ramp down and tripping of Customer's 46 kV breaker CB-XX (HECO# XXXX). HECO RFL signal is to be a continuous signal while communication channel is failed.
    b. HECO-owned RFL to initiate trip and block close of Customer's 46 kV breaker CB-XX (HECO# XXXX) via HECO-owned SCADA resettable lockout relay ("86/LOSS COMM") after _____(Project size MW/2 MW per minute ramp down) minutes.

4. Customer to ensure manual closing of Customer's 46 kV breaker CB-XX (HECO# XXXX) shall be allowed only for hot line (_____ <46kV circuit name> 46 kV line-side) and dead bus (Customer-side). There shall be no auto reclosing on Customer's 46 kV breaker CB-XX (HECO# XXXX).

5. HECO shall have SCADA trip control over Customer's 46 kV breaker CB-XX (HECO# XXXX).

6. Customer to provide raw count (DNP 3.0) for analog points to HECO (except as identified in Note 8d). Customer to provide hardwired dry contact pairs for status points to HECO, and accept hardwired control points from HECO (except for DNP control signals identified in Note 7).

7. HECO load dispatcher shall be enabled to issue the following to the Customer via DNP 3.0 interface:

a. Set point curtailment control signals at a rate of up to four (4) curtailment control signals per minute. (See note 8e) Customer is not allowed to override HECO's curtailment control; and
b. Voltage (analog kV) set point control signal.

8. The following signals provided by the Customer shall be telemetered to HECO load dispatch office:
    a. Status of Customer's 46kV breaker CB-XX (HECO# XXXX);
    b. Status of remotely-resettable lockouts;
    c. 46kV line amps (3 phase), 46kV voltage (3 phase), frequency, NET MW, NET MVAR, and NET power factor at point of interconnection. Power factor to be a calculated value;
    d. 46kV line amps (B phase), 46kV voltage (A-B phase), NET MW, and NET MVAR at point of interconnection through use of HECO approved non-programmable analog transducers. Data to be provided in analog format (+/- 1mA) directly from the analog transducers;
    e. Received kwh accumulator, sent kwh accumulator, received KVARh accumulator, Sent KVARh accumulator.
    f. Status indicating when curtailment is in effect and the latest received curtailment set point;
    g. Voltage Regulator Status – Normal or Alarm (regular On or Off)
    h. Latest received voltage set point;
    i. Wind speed in Miles per Hour and direction;
    j. Barometric Pressure;
    k. Temperature in Celsius;
    l. Solar Irradiance in Watts/m2;
    m. Humidity in Percent;
    n. KW output for each inverter;
    o. Status for each inverter; and
    p. Instant power fluctuation rate, ramp rate, and sub-minute average power fluctuation rate.
    q. Plant MW capability;
    r. Frequency Droop percent and deadband settings.

9. The following signals provided to the Customer shall be telemetered from HECO load dispatch office:
    a. Breaker trip control of Customer's 46 kV breaker CB-XX (HECO# XXXX); and
    b. Control of SCADA re-settable lockouts.

10. The following occurrences shall initiate separate alarm to HECO load dispatch office.
    a. DTT and RTU Loss of Communication;
    b. 48VDC and/or 125VDC Charger Trouble. Specific alarms to be determined by HECO at a later date;
    c. Trouble alarm for loss of VDC source(s);

d. Violation of Maximum Ramp Rate Upward or Downward (Performance Standard);
e. Violation of Power Fluctuation Rate (Performance Standard);
f. Operation of HECO-owned SCADA re-settable lockout relays; and
g. Violation of sub-minute average power fluctuation rate.

11. HECO requires 24 hour access to HECO-owned SCADA/RTU, communication, and HECO-owned relaying and monitoring equipment.

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

13. Customer to provide a source of station service power for its facility that will remain available when Customer's 46 kV breaker CB-XX (HECO# XXXX) is opened and the facility is separated from HECO's system.

14. Secure and reliable communication is required for the following:
    a. Direct transfer trip from _____ (46kV circuit name) 46kV CB _____ (HECO Breaker #);
    b. SCADA to/ from Customer's facility;
    c. Back-up SCADA to/from Customer's facility;
    d. Revenue metering for power export and consumption readings;
    e. Future Auto-scheduling;
    f. Power quality and fault recording and retrieval; and
    g. Phone circuits as required.

    Customer to provide leased service from Hawaiian Telecom to support items a through e. Customer to coordinate with HECO for details.

15. Customer to design revenue metering facilities in accordance with the requirements in Chapter 6 of the HECO Electric Service Installation Manual.

16. HECO shall own a Tesla Model No. 4000 power quality device near the point of interconnection, which shall be in continuous service and on a rolling window basis monitoring sub-cycle voltages, currents and harmonics, as well as disturbance events and capable of remote interrogation following an event. HECO requires 24 hour access to this equipment. Customer to provide the following hard wired inputs to HECO's TESLA 4000:
    a. Status of Customer's 46kV breaker CB-XX (HECO# XXXX);
    b. Status of remotely-resettable lockouts;
    c. 46kV line amps (3 phase); and
    d. 46kV line-to-neutral voltage (3 phase)

17. Customer to effectively ground its PV system and suppress any ground fault overvoltage.

18. Customer to submit design drawings for HECO to review and comment.

19. The customer's control system shall be upgradable to have the capability of:
    a. Receiving pre-programmed setpoints from HECO load dispatch for a minimum of four (4) station output levels for auto-scheduling.
    b. Upon receipt of an auto-schedule signal, the customer shall immediately move to one of the pre-determined output levels based on the signal received from HECO. The maximum time delay from the receipt of the auto-schedule signal to the desired output shall not exceed five (5) cycles.

20. PTs and CTs for Tesla and RTU transducers should be the same quality as the PTs and CTs for the 46kV protective relaying.

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix I – Description of West Loch Site

January xx, 2016

This document will be completed upon release of the Final RFP and will include a description of the West Loch Site, including details of the sublease agreement to be signed with Hawaiian Electric and available technical information.

EXHIBIT B

APPENDIX J

Procedures Manual

DRAFT REQUEST FOR PROPOSALS

FOR

SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

ISLAND OF O'AHU

Appendix J – Procedures Manual

January XX, 2016

Table of Contents

APPENDIX J
PROCEDURES MANUAL FOR THE IMPLEMENTATION OF A COMPETITIVE PROCESS FOR HAWAIIAN ELECTRIC 35 MW SOLAR CBRE REQUEST FOR PROPOSALS

1 Introduction

This 35 MW CBRE Solar Request for Proposals ("CBRE Solar RFP") Procedures Manual ("Manual") has been developed to govern the implementation of the competitive process for Hawaiian Electric's CBRE Solar RFP. While the CBRE Solar RFP is not subject to the State of Hawai'i Public Utilities Commission's ("PUC") Framework for Competitive Bidding ("Framework"), pursuant to the waiver granted by the PUC as set forth in Docket No. _____[1], Hawaiian Electric will take steps to ensure a competitive solicitation and fair evaluation of proposals, including adopting provisions of the Framework to the extent possible in these procedures. This Manual supplements the CBRE Solar RFP and further describes (1) the organizational structure for the evaluation process, (2) the protocols for communicating with Proposers and other participants in this process, including handling confidential information; (3) an overview of the evaluation process with reference to detailed discussion in Chapter 4 of the CBRE Solar RFP; and (4) other information consistent with the requirements of the solicitation process.

The procedures and policies set forth herein have been designed to ensure that the procurement process is undertaken in a fair and equitable manner, that the Proposals received in response to the CBRE Solar RFP are evaluated in a consistent and unbiased manner, and that each Proposer is afforded an equal opportunity to participate and compete.

This Manual is intended as a guideline for implementing Hawaiian Electric's solicitation process and offers directions for those participating in the CBRE Solar RFP process. The Manual may be modified or expanded in accordance with the specific circumstances of the CBRE Solar RFP.

2 Statement of Objectives

As explained in the CBRE Solar RFP Section 1.1 (Purpose the Request for Proposals), Hawaiian Electric seeks Proposals for the supply of up to 35 MW of qualified renewable as-available solar energy to be delivered to the Hawaiian Electric System on the Island of O'ahu in the State of Hawai'i, under contract terms to be negotiated between Hawaiian Electric and the Proposer in the form of a power purchase agreement ("CBRE Solar PPA"). The Term of the CBRE Solar PPA shall be for a period of twenty-two (22) years from the Commercial Operation Date. See additional information in Chapter 1 (Introduction and General Information) of the CBRE Solar RFP.

Hawaiian Electric will undertake a detailed review and evaluation process of Proposals received in response to the issuance of the CBRE Solar RFP. A Final Award Group will be selected in accordance with the steps and evaluation criteria delineated in the CBRE Solar RFP Chapter 4 (Evaluation Process and Evaluation Criteria).

3 Project Organization and Responsibilities

This section of the document outlines the Hawaiian Electric CBRE RFP organizational structure for the CBRE Solar RFP Project and evaluation process, and identifies the associated responsibilities to ensure that Proposals are evaluated on a fair, consistent, and equitable basis.

[1] Subject to PUC approval of such waiver.

3.1 RFP, Shared Resource and Self-Build Teams

Hawaiian Electric anticipates submitting a self-build proposal in respect to the CBRE Solar RFP. In the spirit of the Competitive Bidding Framework, Hawaiian Electric has created three separate internal teams. A CBRE RFP Team, and CBRE Self-Build Team and a CBRE Shared Resources Team.

CBRE RFP Team. The CBRE RFP Team is comprised of Company employees and consultants who are responsible for preparing the CBRE Solar RFP and evaluating responses to the CBRE Solar RFP. This team will also be responsible for managing all communications with Proposers.

CBRE Self-Build Team. The CBRE Self-Build Team is comprised of Company employees and consultants who are responsible for preparing a proposal to be submitted by the Company in response to the CBRE Solar RFP.

CBRE Shared Resources Team. The CBRE Shared Resources Team is comprised of Company employees and consultants supporting both the CBRE RFP Team and the CBRE Self-Build Team. The members of the CBRE Shared Resources Team have unique skill sets that cannot be duplicated by other employees, are from small departments with limited resources, or who supervise employees on both the CBRE RFP Team and CBRE Shared Resources Team. Members of the Shared Resources Team may help support drafting of the RFP and/or its attachments, evaluate and rank proposals, respond to comments and questions from Proposers, and support the drafting of the self-build Proposal. If a member of the CBRE Shared Resources Team receives confidential information from the CBRE RFP Team it shall not share such information with any member of the CBRE Self-Build Team and vice versa.

The CBRE RFP Team and CBRE Self-Build Team are not to communicate in any way regarding the CBRE Solar RFP. No members of the CBRE Self-Build Team shall have access to information regarding the CBRE Solar RFP before such information is distributed to all potential Proposers or otherwise made publicly available. Members of the CBRE Shared Resources Team can communicate with both the CBRE RFP Team and the CBRE Self-Build Team as needed. However, if a member of the CBRE Shared Resources Team receives confidential information from the CBRE RFP Team it shall not share such information with any member of the CBRE Self-Build Team and vice versa. Information regarding the CBRE Solar RFP or the CBRE Self-Build Proposal shall not be shared in files and/or drives on the Company's system or any electronic storage system that are accessible to members of the opposite team. Likewise paper files shall also be stored in areas that are only accessible by the proper team.

To the extent members of the CBRE RFP Team and CBRE Self-Build Team are working together on projects unrelated to the CBRE Solar RFP such employees can continue to work together on the non-CBRE Solar RFP projects, but shall refrain from discussing anything related to the CBRE Solar RFP.

Members of all three teams are to avoid discussing the CBRE Solar RFP and any information related there to, including Proposals and evaluation of proposals, with Company personnel or consultants not associated with CBRE Solar RFP.

While not all aspects of Hawaiian Electric's Code of Conduct Pertaining to the Implementation of a Competitive Bidding Process for New Power Supplies dated June 2007 ("Code of Conduct") is applicable to the CBRE Solar RFP, for example the Company has been issued a waiver from the Competitive Bidding Process and is not intending to use an Independent Observer for the CBRE Solar RFP, Hawaiian Electric does intend to follow the Code of Conduct to the extent possible as laid out in this Section 3.1. To this end, Hawaiian Electric has held training for members of each of the three teams regarding the procedures set forth in this Section 3.1 and the Code of Conduct and have required all employees and consultants on the CBRE RFP Team, CBRE Self-Build Team, and CBRE Shared Resources Team to sign the Code of Conduct Acknowledgement Form.

The Company reserves the right to add employees and consultants to the teams as necessary throughout the CBRE Solar RFP process. However, at no time will a person be allowed to switch from one team to another. If

employees or consultants are added to a team they shall be provided a copy of the Code of Conduct and this Manual and shall be required to sign a Code of Conduct Acknowledgement Form.

3.2 Evaluation Team Organization

CBRE Solar RFP Contract Manager. The CBRE Solar RFP Contract Manager (see CBRE Solar RFP, Section 1.3) will be responsible for receiving the Proposals when due, and distributing the appropriate sections of each Proposal to the RFP Evaluation Team members when the Evaluation process commences. The CBRE Solar RFP Contract Manager will be also responsible for maintaining the documentation underlying the evaluation of each proposal as well as all communications with Proposers.

CBRE Solar RFP Core Team. The CBRE Solar RFP Core Team will be responsible for working with the CBRE Solar RFP Contract Manager to ensure that Proposals meet the Eligibility Requirements (see CBRE Solar RFP, Section 4.2 (Eligibility Requirements) and the Threshold Requirements (see CBRE Solar RFP, Section 4.3 (Threshold Requirements). Failure to meet any of these requirements could lead to disqualification of the Proposal from further review and evaluation. If a Proposal meets the Eligibility and Threshold Requirements it will be provided to the CBRE Solar RFP Evaluation Teams for evaluation and scoring.

CBRE Solar RFP Evaluation Teams. There will be two CBRE Solar RFP Evaluation Teams:

(i) a Price/System Impacts Evaluation Team; and

(ii) a Non-Price Evaluation Team.

The CBRE Solar RFP Evaluation Teams will be selected from the CBRE Solar RFP Team and will work under the auspices of the CBRE Solar RFP Contract Manager who leads the CBRE Solar RFP Project. CBRE Solar RFP Evaluation Team members will be primarily director and principal level employees, along with outside consultants with backgrounds in a number of disciplines necessary to conduct a thorough evaluation of each Proposal. The members of the separate CBRE Solar RFP Evaluation Teams will be prepared to evaluate Proposals on the basis of their Price/System Impacts factors, comparison with the overall system-wide costs for Hawaiian Electric customers, and Non-Price factors. Members of the CBRE Solar RFP Evaluation Teams areas of expertise will include disciplines such as: engineering, siting/land use, environmental, community outreach, transmission planning, legal, financial planning, system operations, integrated resource planning, generation planning, production cost analysis, renewable technology, and/or other topic areas as needed.

The two CBRE Solar RFP Evaluation Teams will conduct their respective assignments for the evaluation process separately and will not share the results of their respective evaluation results with members of the other Team. Each Team will submit its evaluation results to the CBRE Solar RFP Contract Manager, who will be responsible for compiling the results of the evaluations and selecting the Final Award Group, with members of the Hawaiian Electric CBRE Solar RFP Team.

The distribution of Proposals will be strictly limited to Evaluation Team members only All Proposal information and materials will be collected at the end of the evaluation process..

4 Communications Protocols

Hawaiian Electric has developed policies and procedures governing communications among the Hawaiian Electric CBRE RFP Team, the CBRE Self-Build Team, the CBRE Shared Resources Team, the Proposers, and other Hawaiian Electric employees, interested parties, and the PUC regarding the CBRE Solar RFP design and Proposal evaluation. Specific Proposal information, and evaluation data and recommendations, shall not be communicated among members of the CBRE Solar RFP Team not on the CBRE Solar RFP Evaluation Teams, outside parties and other employees within Hawaiian Electric.

4.1 Communications among the Hawaiian Electric CBRE Solar RFP Team, Proposers, and Interested Parties

After Hawaiian Electric issues the CBRE Solar RFP, the CBRE Solar RFP Contract Manager shall serve as the primary contact person for all communications with Proposers and interested parties. This is important from the standpoint of maintaining consistency and confidentiality of information between Proposers and Hawaiian Electric. Hawaiian Electric has established an email address and may also establish an electronic bidding platform for communications with potential Proposers. Once the CBRE Solar RFP is approved by the PUC for distribution to Proposers, Hawaiian Electric will use the CBRE Solar RFP email and/or electronic bid platform, if one is established, to communicate with potential Proposers. For documentation purposes, all communications from Proposers must be submitted to the CBRE Solar RFP and/or electronic bidding platform provided by Hawaiian Electric prior to, and after, the PUC approval of the RFP. Proposals will be submitted as directed in the CBRE Solar RFP, Section 3.7 (General Instructions to Proposers).

The communications process for addressing questions from Proposers is provided below:

1. Other than during Hawaiian Electric-sponsored conferences, Proposers must submit all questions via the email link provided, or through the electronic bid platform (if provided). All Proposers that have submitted a Notice of Intent (see CBRE Solar RFP, Section 1.2.4) will automatically receive notification that the CBRE Solar RFP has been issued and is available on Hawaiian Electric's website or the electronic bidding platform. Proposals will be submitted electronically to Hawaiian Electric by email to the address provided in the CBRE Solar RFP or through the electronic bidding platform, if one is developed. Proposals must be organized according to the Instructions to Proposers provided in the CBRE Solar RFP Chapter 3 (Instructions to Proposers), developed to facilitate the provision of the information described in the CBRE Solar RFP Appendix A (Form of Proposer's Response Package).

2. After submission of Proposals, all contacts between Hawaiian Electric and Proposers will be coordinated by the CBRE Solar RFP Contract Manager. During this same post-Proposal submission period, Hawaiian Electric may have communications and meetings with individual Proposers for clarification of Proposals. Similar meetings and communications may also be held to discuss details of Proposals through the evaluation phase to selection of the Final Award Group and the contract negotiation phase. Entering contract negotiations does not guarantee that a contract will be executed.

3. Based on the questions received, responses may require Confidential Information. Treatment of Confidential Information will be managed in accordance with the Confidentiality Agreement executed between Proposer and Hawaiian Electric. Release of any Confidential Information must be approved in advance by the Hawaiian Electric Executive authorized to release the Confidential Information. Responses will be categorized as follows:

   Non-Confidential Responses: Pertinent questions and responses will either be posted directly on the electronic bidding platform or distributed by email or a description of the information that can be made available will be posted or distributed and Proposers and interested parties will be instructed to submit a request to Hawaiian Electric via email or the electronic bidding platform to receive a copy.

   Confidential Responses: Pertinent questions and a description or notice of a Confidential Information response will be posted on the electronic bidding platform or distributed by email and Proposers and interested parties will be instructed to submit a request to Hawaiian Electric via email or the electronic bidding platform 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 Agreement, provided as Appendix G (Confidentiality Agreement) to the CBRE Solar RFP. Only those who have submitted a Notice of Intent (See CBRE Solar RFP Appendix Z) and have executed a Confidentiality Agreement will be considered for receipt of Confidential Information.

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 posting on a password secured access site or via Company's secure email system:* (1) Confidential Information may be made available on a secured website with an individual password provided to each Proposer that is Qualified, i.e., has provided a Notice of Intent and has executed a Confidentiality Agreement. (2) Confidential Information in documents may be transmitted to Qualified Proposers through Hawaiian Electric'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 Hawaiian Electric may consider making available for inspection only with no copies allowed. This type of Confidential Information will be made available on Hawaiian Electric premises for inspection only. Qualified Proposers will be advised via email or the electronic bidding platform to make arrangements with Hawaiian Electric 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 Hawaiian Electric 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, Qualified Proposers will be advised as such via email or the electronic bidding platform.

4. Once Proposals are received, Hawaiian Electric may submit information requests to Proposers to clarify their Proposal or request additional information. All contacts with Proposers will be through the email or the electronic bidding platform, except during the Technical Conference or, if determined necessary, face-to-face meetings are scheduled, and logs of such meetings will be maintained.

4.2 Communications between Hawaiian Electric and the PUC

Hawaiian Electric staff will be responsible for initiating communication with the PUC regarding the CBRE Solar RFP or Hawaiian Electric's evaluation process. Regular updates may be provided to the PUC regarding the CBRE Solar RFP process, if requested.

5 Self-Build Proposal

The Self-Build Proposal will be required to submit its proposal in advance of Proposals from non-Company Proposers per the schedules set forth in the CBRE Solar RFP (See CBRE Solar RFP, Chart 1 (RFP Schedule)). The Self-Build Proposal will be required to follow special procedures as outlined in Section 1.7 (Procedures for Self-Build Option) in the CBRE Solar RFP.

While the Self-Build option, if selected, would not be required to enter into a power purchase agreement, the Self-Build Proposal must submit its pricing in the form of a PPA/Credit rate, Upfront Payment and O&M Fee and

Maximum Amount of CBRE Allocation for the Project in the same manner as non-Company Proposers. The Self-Build Option will remain subject to the Tariff requirement that the Customer's LCOE is less than the Customer's PPA rate, as determined by the CLOE Calculator.

For the purpose of the Price/System Impacts Evaluation Team 's evaluation, all of Hawaiian Electric's capital and ongoing operations and maintenance expenses related to the development, construction, and operation of its Self-Build Bid Proposal, must be translated into a representative PPA/Credit rate by the CBRE Self-Build Team. The Self-Build Bid Proposal must contain the detailed methodology used for to convert the Company's Self-Build Bid costs into a PPA/Credit, including all assumptions related revenue requirements, expected useful of equipment, operations and maintenance costs, federal and Hawai'i state tax credits and tax treatment, and estimated energy production.

To maintain equal treatment of Price/System Impacts for any non- Self-Build Bids located at the West Loch Site, the CBRE Self-Build Team shall include identical assumptions regarding the lease terms, conditions, and costs associated with the West Loch Option as are provided in Appendix I of the RFP. For the purpose of the Price/System Impacts Evaluation, the CBRE Self-Build Team exclude any amount of residual value assumed for the Self-Build Bid related to the West Loch Site itself, and may only include assumptions regarding the residual value of the physical equipment located at the solar facility, unless the final terms and conditions of the West Loch Option lease agreement provide for recovery of such residual value for all Proposals.

6 Evaluation Process and Methodologies

The Proposal evaluation process and methodologies are described in detail in Chapter 4 (Evaluation Process and Evaluation Criteria) of the CBRE Solar RFP. The Proposal evaluation process and methodology will consider both Price/System Impacts and Non-Price criteria.

DRAFT

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix K – Transmission Constraint Information

January xx, 2016

This document will be completed upon release of the Final RFP and will include or point to resources that provide information to assist Proposers with siting of their proposed projects so that they are compatible with Hawaiian Electric's planning criteria. In particular, this document will include information on transmission constraints, such as the need for infrastructure improvements, associated with likely areas of interconnection.

EXHIBIT B

APPENDIX L

Levelized Cost of Energy Calculator

Instructions
Step 1. Enter the CBRE Facility proposed installed capacity in MW AC in cell C3 on the "Bid input and validation tab"
Step 2. Enter the Facility's annual contract energy in cells C6:X6 on the "Bid input and validation tab"
Step 3. Enter the PPA rate per kWh bid, the O&M fee per kWh bid and the customer upfront payment per kW bid in cells C3:C5 on the "Bid input and validation tab"
Step 4. Ensure that the bid meets the required criteria that the Participant LCOE < Credit rate such that cell C9 on the "Bid input and validation tab" indicates "True"

Legend
Developer inputs
Hawaiian Electric assumptions
Calcuated values

Project size	
Installed Capacity (MW AC)	

Expected production per kW AC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
Annual Contract Energy (MWh)																						

RFP Bid	
PPA rate = Credit Rate $/kWh	
Project O&M $/kWh	
CBRE participant upfront payment per kW	

CBRE RFP criteria met?	
Participant LCOE $/kWh	#DIV/0!
Participant LCOE < Credit rate	#DIV/0!

Assumptions		Comments
Participant discount rate	8.076%	Hawaiian Electric long term weighted average cost of capital
Inflation	2.00%	CBRE Tariff inflation rate

Adjustment Factors	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Participant discount index	1.00	1.08	1.17	1.26	1.36	1.47	1.59	1.72	1.86	2.01	2.17	2.35	2.54	2.74	2.97	3.21	3.46	3.74	4.05	4.37	4.73
Inflation index		1.00	1.02	1.04	1.06	1.08	1.10	1.13	1.15	1.17	1.20	1.22	1.24	1.27	1.29	1.32	1.35	1.37	1.40	1.43	1.46

Energy (per kW)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
KWh production	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Participant discounted energy	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Cash Generated (per kW)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Credit cash flow	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Discounted credits	-	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

Costs (per kW)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
O&M cost	$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Discounted O&M cost	$0.00	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Upfront cost	$0																				

Cash Flow without fees (per kW)	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Net cash flow (without fees)	$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
Cumulative cash flow (without fees)	$0	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!

EXHIBIT B

APPENDIX M

Certificate of Non-Collusion

APPENDIX M - CERTIFICATE OF NON-COLLUSION
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP
HAWAIIAN ELECTRIC COMPANY

The undersigned certifies under the penalties of perjury that this bid or 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 other organization, entity, or group of individuals.

_____
(Name of Proposer)

(Signature of Authorized Agent)

Date_____

THE ABOVE STATEMENT MUST BE SIGNED AND INLCUDED WITH YOUR PROPOSAL.

EXHIBIT B

APPENDIX N

Selection Criteria

APPENDIX N
SELECTION CRITERIA
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP

Proposals that meet the Threshold Requirements will then be subject to a price and non-price analysis. 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. Hawaiian Electric will maintain separate independent teams to evaluate the price and non-price related criteria.

Hawaiian Electric will evaluate the price-related criteria of the proposals by assessing the proposed cost of delivered energy. The price evaluation will be based on the proposed PPA price. For conducting this analysis, Hawaiian Electric will rank proposals with respect to their price and award evaluation points in accordance with their relative ranking. Proposers must provide a price for the purchase of energy in $/kWh (AC) units. As discussed in Section 2.10.8, this pricing should include all expected costs for interconnection of the project. Selected projects will be responsible for the actual final costs of all Seller-Owned Interconnection Facilities and Company-Owned Interconnection Facilities. No adjustments to energy pricing will be permitted as a result of the actual final costs.

Proposals will also be evaluated using non-price criteria to assess their merit in the general areas of feasibility, viability, and support for the CBRE program. The criteria are not listed in order of importance for the non-price criteria evaluation.

- Upfront Fee - A lower upfront fee ($/kW) required by the Developer will make the project more affordable to a wider range of potential Participants. Therefore projects will be evaluated based on their ability to minimize the upfront fee paid by Participants.
- O&M Plan – Operations and maintenance is an important aspect of project operations. This is especially important in the context of CBRE where Participants are relying on the continued performance of the Facility to offset their energy consumption. Proposals will be evaluated on their plan for operating and maintaining the Facility throughout the contract term as well as their plan to support ongoing CBRE program activities such as responding to participant inquiries, transfer requests, buy-back requests, and other issues that may be raised by participants regarding the proposed project.
- Option to increase CBRE Program Allocation – Proposals are required to allocate a minimum of 29% of their energy output to be purchased by Participants through the CBRE program. However, bidders are encouraged to identify an increased portion of the project's output (not to exceed 75%) that could be allocated to CBRE Participants if program demand is greater than available capacity. Projects that provide an option to increase the CBRE allocation will be rated more favorably with those having a greater allowable CBRE allocation scoring higher.
- Model PPA Contract Exceptions – Bidders are encouraged to accept the contract terms identified in the Model PPA. Any proposed changes (to those items identified as negotiable in the Model PPA) should be accompanied by supporting rationale and HECO reserves the right to reject any proposed change based on its evaluation. Proposals will be evaluated based on the number of contract exceptions proposed with proposals having fewer proposed changes being rated more favorably.

- State of project development activity – 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 in a timely manner. Proposals will therefore be assessed on their current state of project development.
- Geographic Spatial Diversity – Increased geographic spatial diversity between solar projects may limit the collective impact of cloud cover over a portion of the island. Projects will therefore be evaluated based on their proximity to existing and other proposed CBRE solar projects where projects with a greater distance from other projects will be rated more favorably.
- Permitting Plan – Obtaining the required permitting in a timely manner is important to meeting construction schedules and ultimately to making projects available for Participants to purchase into. Proposals will be evaluated on their plan to identify, apply for, and secure the required permits for the project and any permitting activity that has been completed to date.
- Developer Experience –Developers with a demonstrated ability to construct and interconnect projects to the Hawaiian Electric grid can reasonably be expected to be able to successfully complete a project with a higher level of confidence than those without any prior experience. As CBRE Participants will be reliant on the ability of the Developer to place the Facility in service as well as to operate and maintain the Facility, proposals will be evaluated based on the prior local experience of the Developer in connecting projects to the Hawaiian Electric grid.
- Community Outreach Plan – Gaining community support is an important part of a project's viability and success. Proposals will be evaluated on their plan to inform the neighboring community of the project, incorporate changes based on community input, and any community outreach efforts that have been performed to date.
- Cultural Resource Impacts – Projects should be mindful of their potential impact to cultural resources. Proposals will be evaluated on their plan to assess and mitigate their impact to cultural resources and any assessments that have been conducted to date.

EXHIBIT B

APPENDIX O

Excess Energy Analysis and Potential Risk

APPENDIX O
EXCESS ENERGY ANALYSIS AND POTENTIAL RISK
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP

Recent analysis for the purposes of the CBRE program indicates the level of estimated excess energy situations. The numbers presented here are estimates. It is impossible to predict the exact level of curtailment expected over the 22 year term of a power purchase agreement and this estimate is based on best available information as of this filing. The purpose of providing this estimate is to provide developers a point of reference when considering prospective projects. Developers should be aware that the Commission recently requested that a revised PSIP be filed on April 1, 2016. The outcome of the PSIP update effort may result in a change of the estimate provided. As explained below, there are many factors that will change the estimate. The current estimate for O'ahu is as follows:

- Over 99% utilization of the energy that could be produced by a 40 MW incremental solar addition consisting of a 35 MW PV RFP project and up to 5 MW of Tier 1 and Tier 2 Solar .

The extent to which a variable generation resource (such as the CBRE facilities) may be curtailed due to excess energy depends on many factors such as the total net system load that must be served by generating sources on the utility side of the meter,[1] the minimum output of the firm capacity generators that must operate in order to maintain system reliability, the amount of downward regulation that must be carried by the firm capacity units to counteract an unexpected loss of load, the total output from variable generation resources, and the position of the variable generation resource in the curtailment sequence. When the sum of the minimum output of the firm capacity generators, the amount of downward regulation, and the output of the variable generation resources exceeds the total net system load that must be served by generating sources on the utility side of the meter, the output of the variable generation resources will need to be reduced, beginning with the first variable resource in the curtailment sequence, such that the balance of supply (generation) and demand (load) is maintained.

The risk of curtailment of a variable generation resource due to excess energy will increase if it is nearer to the beginning of the curtailment sequence, total net system demand is reduced, more downward regulating reserve must be carried on the system, more firm capacity generating units must operate to provide system stability, or the minimum output ratings of the firm capacity units are increased. Conversely, the risk of curtailment of a variable generation resource due to excess energy will decrease if it is further from the beginning of the curtailment

[1] Total net system load is the resultant load on the system after customer-sited distributed generation, such as from net energy metering systems, Feed-In-Tariff and standard interconnection agreement systems has directly served customers' demand on the customer side of the meter and exported excess power (where applicable) onto the electrical grid.

sequence, total net system demand is increased, less downward regulating reserve must be carried on the system, fewer firm capacity generating units must operate to provide system stability, or the minimum output ratings of the firm capacity units are decreased.

Accordingly, if the amount of uncontrollable net-energy-metered PV increases at a rate greater than currently forecast, the risk of curtailment of all future utility-scale PV, such as the CBRE facilities, will increase. A key assumption related to distributed energy resources ("DER") is that technologies, such as customer sited rooftop PV, will be controllable by the utility. The issue of controllability of inverters by the utility is being examined in Docket No. 2014-0192 (DER Policies). At this point, it is difficult to quantify this risk as it depends on factors such as technology readiness, timeliness of technology deployment, and the length of regulatory proceedings. Curtailment risk may also be associated with the potential delay of projects or actions that are planned in order to reduce the possibility of curtailment.

As noted earlier, however, Hawaiian Electric's analysis estimates that the Company will be able to accept over 99% of available variable renewable energy from the CBRE facilities on O'ahu. This analysis focused on the impact from excess energy curtailment. Projects may also be curtailed for reasons including, but not limited to, maintenance on both the system and facility levels, system emergencies, performance of the independent power producer (exceeding or not meeting performance requirements), and system disturbances caused by the independent power producer. Curtailment for these reasons will vary by the facilities location, size, and operation and maintenance by the independent power producer.

Developers interested in participating in the CBRE Program should complete their own research and analysis on these issues and come to their own conclusions regarding the expected level of excess energy curtailment over the 22 year term as well as any additional curtailment that may result from items such as maintenance, system emergencies, performance of the independent power producer, and system disturbances caused by the independent power producer.

PLANNING ASSUMPTIONS

Hawaiian Electric filed its Power Supply Improvement Plan ("PSIP") on August 26, 2014. The PSIP described a "Preferred Plan" for O'ahu's electrical system. The PSIP Preferred Plan identified a long-term tactical plan reflecting best available information at that time to transform the electric system.

Resource planning is a dynamic process that must be adjusted based on new opportunities and changes in previous assumptions. The analysis herein is based on the present long-term plan (excluding Demand Response assumptions), which reflects adjustments since the filing PSIP Preferred Plan. Adjustments since the 2014 PSIP filing include projections of Hawaiian Electric's sales and peak forecasts which are a major factor in forecasting future curtailment risk. The updated sales and peak forecast (May 2015) is generally higher than the forecast used in the

PSIP analysis. The higher sales and peak forecast would have the effect of reducing the curtailment risk. Lower sales and peak forecasts would have the effect of increasing curtailment risk.

EXHIBIT B

APPENDIX P

IRS Data Supplemental Requirements

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

		Response
1)	**Please provide Single-Line Diagram(s), Three-Line Diagram(s), and Protective Relay List & Trip Schedule for the generation and interconnection facilities:** **General SLD Comments and Questions**	
	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.	

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

		Response
2)	**Please provide a plan map of the Non Utility Generation (NUG) facilities; please indicate the interconnection point to the HECO system.**	

3)	**For the power transformers including the 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.	

4)	**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).	

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

6)	**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.	

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

		Response
7)	**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.**	

8)	**Please provide the following data:**	
	PV - Inverter Based Generating Facility	
	a. Inverter manufacturer, Type, Size, Impedances	
	b. Power Factor Range Capability	
	c. Inverter reactive power capability curve	
	c. Auxillary loads (P, Q, Power Factor)	
	d. Ramp rates (up, down) Typical and Measured Proxy Data	
	e. Inverter's Internal Isolation Transformer Grounding Method, if used (i.e. effectively grounded, resonant grounded, low inductance grounded, high-resistance grounded, low-resistance grounded, ungrounded). If the transformer is not solidly grounded , provide the impedance value for the grounding neutral and the impedance for the isolation transformer.	
	f. Diagram for Inverter's internal isolation transformer	
	g. Switching and service restoration practice	
	h. Protection data (voltage ride through and cut-off, frequency ride through and cut-off settings etc.). Include setpoint and clearing time ranges for voltage and frequency settings.	
	i. Details of filters etc. at Point of Interconnection	
	j. Description of harmonic spectrum of inverter injection (order, magnitude)	
	k. Description of PV inverter with respect to varying levels of solar irradiance	
	l. Validated PSS/E load flow and dynamic models up to the point of interconnection (POI), if required. Documentation on the models should also be provided.	
	m. Validated PSCAD model that accurately represents the inverter dynamic models. Documentation on the model shall also be provided.	
	n. Validated Aspen Oneliner short circuit model that accurately represents the facility, and is valid for all faults conditions anywhere on the Utility system. Documentation on the model should also be provided. (OTHERWISE SEE ADDITIONAL TABS FOR REQUIRED INFORMATION TO MODEL INVERTER)	

9)	**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. Validated PSS/E load flow and dynamic models as requested in Section 8.l. shall include the energy storage equipment. Documentation on the model should also be provided.	
	f. Energy storage system data sheet	
	g. Validated Aspen Oneliner short circuit model requested in Section 8.m. shall include the energy storage equipment. Documentation on the model should also be provided.	

10)	**Please provide the following generation and load information for the NUG facilities:**	
	a. Expected KW and KVAR loads including, but not limited to, generators' auxiliary load curve, process load(s) profile(s), etc.	
	b. Expected minimum and maximum MW and MVAR "import from" AND "export to" HECO.	
	c. Gross and net output of the facility	

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

		Response
11)	**In addition to the items mentioned above, please provide the following for PSS/E models:**	
	a. Object files and IPLANS for user written models, and applicable library files. The uncompiled source code for object files shall be provided to ensure compatability with future versions of PSS/E. In lieu of the uncompiled object file source code, compiled object file updates compatible with future PSS/E versions shall be provided as requested for the life of the project.	

12)	**In addition to PSS/E, other power system analysis tools are required to study events that cannot accurately be modeled in PSS/E due to limitations of the program (e.g. sub-cycle behavior). Data compatible with the following tools shall be provided:**	
	a. Time domain tools - PSCAD® or electro-magnetic transient program (EMTP). Documentation on the model shall also be provided.	
	b. ASPEN One-Liner (VALIDATED MODEL PREFERABLE; OTHERWISE SEE ADDITIONAL TABS FOR REQUIRED INFORMATION)	

NOTE: **Equivalent models other than PSSE may be required if the PSSE model cannot be converted properly.

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]

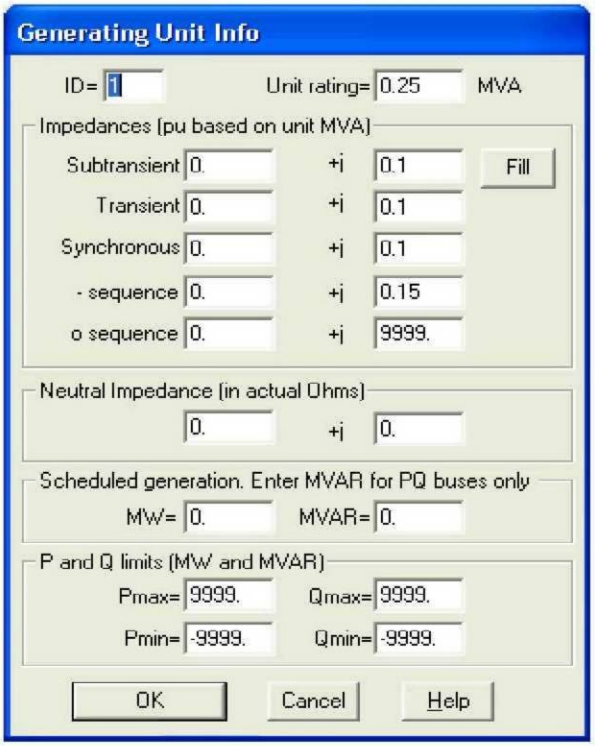
	R	X
Subtransient =		
Transient =		
Synchronous =		
Negative Sequence =		
Zero Sequence =		

[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

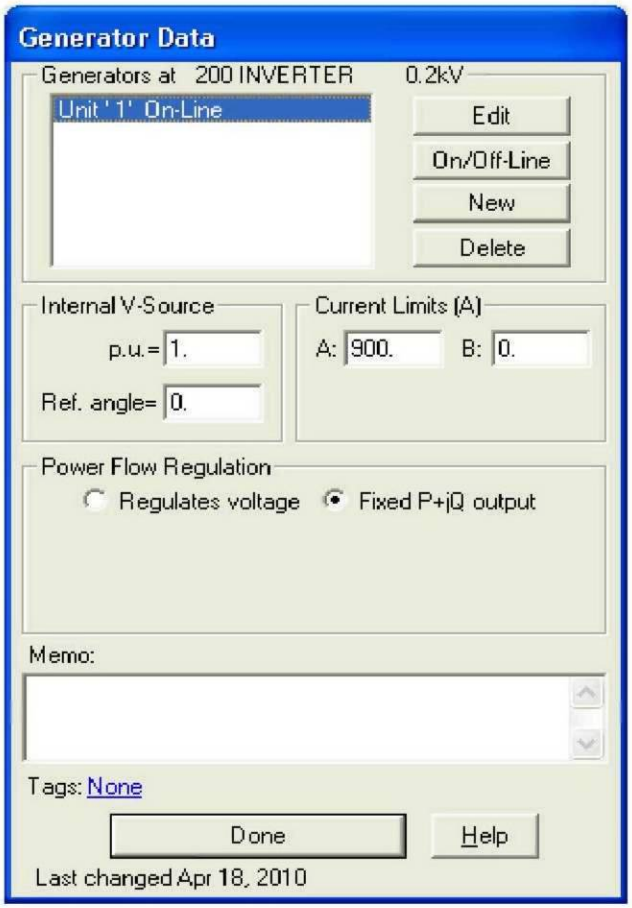
[1] Internal open circuit voltage

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:

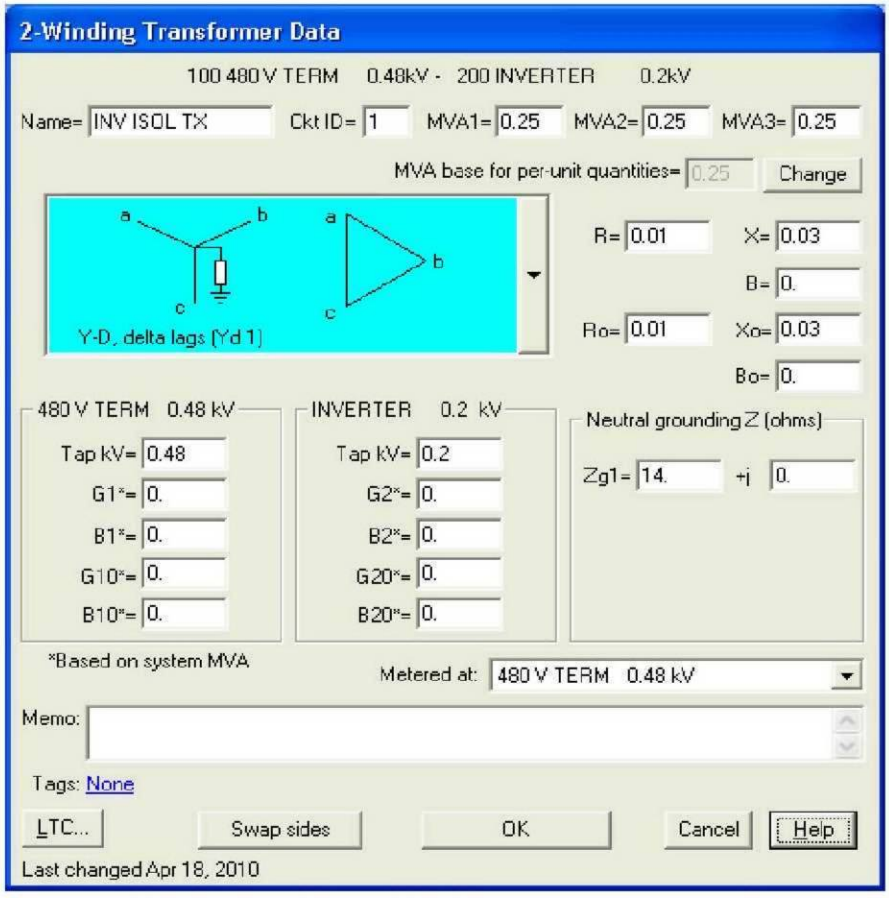


EXHIBIT B

APPENDIX Q

Notice of Intent

[DRAFT]

HAWAIIAN ELECTRIC COMPANY

REQUEST FOR PROPOSALS FOR SOLAR PROJECT(S) UP TO 35 MW

TO SUPPORT COMMUNITY-BASED RENEWABLE ENERGY PROGRAM

Appendix Q – Notice of Intent

January xx, 2016

APPENDIX Q
NOTICE OF INTENT
COMMUNITY BASED RENEWABLE ENERGY 35 MW SOLAR RFP
(CONFIDENTIAL)

1 Company Name: _____

2 Contact Person Information:

Name	
Title/Position	
Mailing Address	
Courier Address (if different)	
Telephone Number	
Fax Number	
E-mail Address	

3 Location, Size (MW), and Point of Interconnection of Project (if available): _____

_____

4 Provide a brief summary description of the proposed project _____

_____

_____

5 Name: _____

Title: _____ Date: _____

This Notice of Intent may be submitted electronically to Hawaiian Electric's Renewable Acquisitions Department at [_____], or mailed to Director, Energy Procurement (MS-CP21/IU), at Hawaiian Electric Company, P.O. Box 2750, Honolulu, Hawaii 96840. Receipt of the Notice of Intent will be confirmed in an e-mail from Hawaiian Electric to the Proposer.