

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of)
)
HAWAIIAN ELECTRIC COMPANY, INC.) Docket No. 2011-0051
)
For approval of Power Purchase Agreement with)
Kaleaeloa Solar Two, LLC, and Determination)
that Hawaiian Electric-Owned Interconnection)
Facilities be Constructed Above the Surface of)
the Ground Pursuant to HRS 269-27.6(a).)

HAWAIIAN ELECTRIC APPLICATION

EXHIBITS 1 THROUGH 9

VERIFICATION

AND

CERTIFICATE OF SERVICE

PUBLIC UTILITIES
COMMISSIONS

2011 MAR - 9 PM 4:00

FILED

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Hawaiian Electric Company, Inc.

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APPLICATION

**TO THE HONORABLE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII:**

HAWAIIAN ELECTRIC COMPANY, INC. (“Hawaiian Electric”) shows unto this Honorable Commission as follows:

I. INTRODUCTION

A. REQUESTED APPROVAL ORDER

Hawaiian Electric respectfully requests that the Commission: (1) approve the Power Purchase Agreement (“PPA”) for As-Available Energy dated February 18, 2011 by and between Hawaiian Electric and Kalaeloa Solar Two, LLC (“Kalaeloa Solar”) a copy of which is attached hereto and incorporated herein by reference as Exhibit 1; (2) authorize Hawaiian Electric to include the purchased energy charges (and related revenue taxes) that Hawaiian Electric incurs under the PPA in and through Hawaiian Electric’s Energy Cost Adjustment Clause (“ECAC”) to the extent not included in base rates; (3) find that the purchased energy charges to be paid by Hawaiian Electric are reasonable; (4) find that Hawaiian Electric’s purchased power arrangements under the PPA, pursuant to which Hawaiian Electric purchases energy on an as-

available basis from Kalaeloa Solar, are prudent and in the public interest; (5) determine that the 46 kV line extension included as part of Hawaiian Electric-owned Interconnection Facilities, as described herein, should be constructed above the surface of the ground; and (6) grant such other and further relief as may be just and reasonable in the premises.

B. KALAELOA SOLAR'S PROPOSED PHOTOVOLTAIC ENERGY FACILITY

1. Photovoltaic Energy Facility Location

The proposed Facility will be located at Kalaeloa, Ewa District, Kapolei, O`ahu, State of Hawai`i, as further described in Appendix A of the PPA. The approximate location of the Facility is shown on the map attached to this Application as Exhibit 5. The Kalaeloa project site is located at TMK No. (1) 9-1-13:28 and 38 / Kalaeloa, Oahu.

2. Guaranteed Commercial Operations Date (“GCOD”)

Kalaeloa Solar's inability to achieve the Commercial Operations Date by the Guaranteed Commercial Operations Date may cause Hawaiian Electric to not meet applicable requirements under the RPS Law. See Section 13)(a) of the PPA (Exhibit 1, page 30). Time is of the essence in the PPA. Kalaeloa Solar is required to achieve the “Commercial Operation Date” on or before 18 months from the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date (see contract definitions section to the PPA), the date for that Construction Milestone specified in Appendix E to the PPA, subject to any allowed extension caused by Force Majeure of the time period as may be required pursuant to Section 13)(b) of the PPA and any applicable grace periods described in Section 13)(c). See Section 13)(a) of the PPA. (Exhibit 1, page 30). If Kalaeloa Solar's failure to achieve the GCOD is not the result of Force Majeure, it is entitled to a grace period of ninety (90) days to cure its failure to perform. If the GCOD cannot be achieved within this ninety (90) day cure period, Kalaeloa Solar is allowed an additional sixty

(60) days (for a total of one hundred and fifty (150) days) to cure its failure and achieve the GCOD, provided that it promptly delivers to Hawaiian Electric a plan for achieving that date and it promptly and diligently executes that plan. If failure to meet the GCOD is the result of Force Majeure, Kalaeloa Solar is entitled to a grace period following the GCOD up to a maximum of three hundred sixty-five (365) days from the GCOD to cure its failure to perform.

C. COMPETITIVE BIDDING FOR RENEWABLE ENERGY

1. HAWAIIAN ELECTRIC'S REQUEST FOR PROPOSALS

This Agreement is submitted to the Commission as the first project resulting from Hawaiian Electric's Renewable Energy Request for Proposals under the Commission's Framework for Competitive Bidding. The Final Request for Proposals for Renewable Energy Projects, Island of Oahu, June 2008 ("RFP"), was issued to the public and submitted to the Commission in In Re Pub. Util. Comm'n, Docket No. 2007-0331 on June 19, 2008.

Hawaiian Electric sought proposals for the supply of up to approximately 100 megawatts of long term (i.e. 20 years) renewable energy for the island of O'ahu under a power purchase agreement, the terms of which would be negotiated between Hawaiian Electric and the seller(s). The resources proposed were evaluated with respect to impacts to Hawaiian Electric's system, adherence to Hawaiian Electric's performance standards, and their ability to be installed within the preferred timeframe.

Hawaiian Electric utilized a multi-stage evaluation process to review and select proposals and to select the preferred resources. To proceed through each stage of the evaluation process, the bids were required to meet established criteria specified in the RFP. A summary of the evaluation process is described in the following sections.

The first step in the evaluation process was to compare each bid received against the bid eligibility criteria as specified in Section 4.2 of the RFP. All bids that passed were then compared against the threshold requirements specified in Section 4.3 of the RFP. The threshold requirements included demonstration of site control, experience of the bidder and or its partners in the development and operation of similar projects, a review of each bid for risks related to variable interest entity treatment, and the bidder's agreement to post the credit and collateral requirements of the RFP. Bids that passed the eligibility and threshold evaluations were then subjected to an initial evaluation in accordance with Section 4.4 of the RFP.

The bids that passed the eligibility and threshold screening were then subjected to an Initial Evaluation which considered both pricing and non-pricing factors as explained in Section 4.4 of the RFP. The non-price evaluation examined factors such as development feasibility, operational viability, operating profile, and flexibility. The eligible proposals were ranked and scored for each of the non-price evaluation criteria by evaluation team members corresponding to their respective areas of expertise.

The price evaluation was conducted in parallel with the non-price evaluation. A total cost assessment was prepared for each proposal that included the cost of energy and a cost of imputed debt. The leveled bid proposal cost was then determined and compared to the leveled avoided cost of the system. The net leveled \$/MWh cost or benefit was then calculated and utilized in the evaluation.

The results of the initial price and non-price analysis were then compiled and the results provided a relative ranking and scoring of each of the bids. The bids that scored

highest were then placed on a short list consistent with Section 4.5 of the RFP.¹ Kalaeloa Solar (SunPower Corporation, Systems) was among these selected short listed bids due to its high ranking on both price and non-price factors.

The short listed bidders were notified of their selection and initial meetings were arranged to clarify their proposals and initiate the interconnection requirements study consistent with Rule 19 and final detailed evaluation process as provided in Section 4.6 of the RFP. The interconnection requirements studies utilized a portfolio approach where all short listed projects were assumed to be on the system in order to assess the overall impacts of these projects both on Hawaiian Electric's system as well as on each other.

In the course of this detailed evaluation, Hawaiian Electric identified potential reliability concerns associated with Kalaeloa Solar's project at the size as proposed. In order to evaluate these technical concerns, Hawaiian Electric determined that additional integration type studies should be performed. Since the amount of time required to complete these studies would directly delay any decision on being able to accept Kalaeloa Solar's project at the size as proposed, Kalaeloa Solar proposed revising their project size to 5 MW as a means to mitigate these technical concerns. Both parties agreed that this approach would allow the reduced sized project to proceed in parallel with the reliability studies being initiated by Hawaiian Electric and allow for real time evaluation of the operability of this technology with Hawaiian Electric's grid.

The detailed evaluation process included a risk assessment for each bid to examine the viability of each bid and included a sensitivity analysis of the key factors

¹ Hawaiian Electric filed a copy of the bids from the "Short List" proposals for the Company's Renewable Energy Request for Proposals in Docket No. 2007-0331 on July 28, 2010, with confidential and/or proprietary information subject to Protective Order No. 23875, dated December 6, 2007.

that could influence project economics. The objective of this detailed evaluation process was to provide information to Hawaiian Electric to select bids with the greatest value consistent with the stated objectives and requirements in the RFP. The results of this detailed evaluation yielded the bids selected for the final award group. Kalaeloa Solar (SunPower Corporation, Systems) was selected to Hawaiian Electric's final award group due to the high ranking in the final evaluation.

During the course of the final negotiations, Kalaeloa Solar notified Hawaiian Electric that they were unable to reach agreement on terms of a lease for their proposed site. As a result, Kalaeloa Solar proposed to relocate their project from the original site to a nearby subleased parcel located on land owned by the Department of Hawaiian Home Lands. Because the new parcel was essentially a greenfield site, Kalaeloa Solar elected to revise their design to a ground mounted tracking system. Hawaiian Electric accepted this revision from Kalaeloa Solar on the basis that there was no significant change to the shortlisted bid, i.e. the project was still a 5 MW PV facility and the revised project and location would not materially alter the results of the previous bid evaluations. As an added measure, Hawaiian Electric requested the Independent Observer ("IO") review Hawaiian Electric's determination of accepting the revised Kalaeloa Solar proposal to be allowable by the RFP and Competitive Bidding Framework. The IO confirmed Hawaiian Electric's determination that accepting Kalaeloa Solar's revised site and design was reasonable and not inconsistent with the RFP or the Framework.

2. INDEPENDENT OBSERVER PARTICIPATION

While not required by the Framework, Hawaiian Electric retained the services of an Independent Observer to assist in the development and monitoring of this competitive

solicitation. New Energy Opportunities was selected by Hawaiian Electric and approved by the Commission on October 9, 2007, to serve in this capacity. The IO provided reports to the Commission on both the short list selection process and the final award group. In summary, the IO concluded in both reports that the Company's results were reasonable. The IO's report on Hawaiian Electric's bid evaluation and short list selection process is attached hereto as Exhibit 3.² The IO report on Hawaiian Electric's selection of the final award group is attached hereto as Exhibit 4.³

D. ENERGY PRICING: THE PPA PRICES ARE REASONABLE

1. The pricing for this PPA is reasonable and in the interests of Hawaiian Electric's customers. During the negotiation process, Hawaiian Electric and Kalaeloa Solar agreed to the stepped pricing structure set forth at Appendix D and Table D-1 of the PPA. (Exhibit 1, pages 117 and 118). The levelized price is comparable to Hawaiian Electric's calculated avoided cost, comparable to a similar technology and sized purchase power agreement recently executed, and also comparable to Hawaiian Electric's proposed price for Feed-In Tariff Tier 3 projects.

2. Energy payments by Hawaiian Electric to Kalaeloa Solar under the PPA are based on a pricing structure and pricing level determined through the competitive bid process and a series of proposals and negotiations between Hawaiian Electric and Kalaeloa Solar described

² See New Energy Opportunities, Inc., "Report of the Independent Observer on Hawaiian Electric Company's Bid Evaluation and Short List Selection Process—Renewable Energy RFP," Docket No. 2007-0331 (Jan. 23, 2009). A portion of the Independent Observer's report contains confidential information provided by the bidders in the competitive bidding process and disclosure of such confidential information could disadvantage Hawaiian Electric in any future negotiations with bidders, power suppliers, contractors, and/or other vendors. The confidential information is protected pursuant to Protective Order No. 23875, dated December 6, 2007, Docket No. 2007-0331. Pursuant to HAR § 6-61-47, the Commission may take official notice of such confidential portion by reference.

³ See New Energy Opportunities, Inc., "Report of the Independent Observer on Hawaiian Electric Company's Selection of the Final Award Group—Renewable Energy RFP," Docket No. 2007-0331 (Nov. 13, 2009). A portion of the Independent Observer's report contains confidential information provided by the bidders in the competitive bidding process and disclosure of such confidential information could disadvantage Hawaiian Electric in any future negotiations with bidders, power suppliers, contractors, and/or other vendors. The confidential information is protected pursuant to Protective Order No. 23875, dated December 6, 2007, Docket No. 2007-0331. Pursuant to HAR § 6-61-47, the Commission may take official notice of such confidential portion by reference.

below and at Exhibit 8 to this application.

Kalaeloa Solar will sell to Hawaiian Electric, and Hawaiian Electric will purchase from Kalaeloa Solar, all of the “Actual Output” (see contract definitions section to the PPA) produced by the Facility and delivered to the Point of Interconnection, from the initial delivery of energy under the PPA through the end of the “Term”, (see Section 2)(a) of the PPA and Appendix D to the PPA. (Exhibit 1, pages 17 and 117)) in accordance with the terms and conditions of the PPA. The initial rate for the delivery of electric energy to Hawaiian Electric under the PPA is set forth at Appendix D, Section 1, of the PPA. See Appendix D and Table D-1 to the PPA. (Exhibit 1, pages 117 and 118).

Hawaiian Electric is obligated to use commercially reasonable efforts to accept test energy that is delivered as part of the normal testing for generators (e.g., energy delivered to Hawaiian Electric during the Control System Acceptance Test but not during the Acceptance Test), provided that Kalaeloa Solar must use commercially reasonable efforts to coordinate such normal testing with Hawaiian Electric so as to minimize adverse impacts on Hawaiian Electric’s System (see contract definitions section to the PPA) and operations. Hawaiian Electric is required to compensate Kalaeloa Solar for test energy at the rate set forth in Appendix D of the PPA. (Exhibit 1, page 117).

Kalaeloa Solar intends to operate its Facility as a nonfossil fuel producer, as provided for and encouraged in Hawaii Revised Statutes (HRS) § 269-27.2:

The public utilities commission may direct public utilities that supply electricity to the public to arrange for the acquisition of and to acquire electricity generated from nonfossil fuel sources as is available from, and the producers are willing and able to make available to, the public utilities, and to employ and dispatch the nonfossil fuel generated electricity in a manner consistent with the availability thereof to maximize the reduction in consumption of fossil fuels in the generation of electricity to be provided to the public.

See HRS § 269-27.2(b).

As further discussed at Exhibit 8, the rate payable by the public utility to the producer for the nonfossil fuel generated electricity supplied to the public utility has been agreed to between the public utility and the supplier. See HRS § 269-27.2(c). Hawaiian Electric has utilized a methodology that removes or significantly reduces any linkage between the price of fossil fuels and the rate for the nonfossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of nonfossil fuel generated electricity. See HRS § 269-27.2(c).

HRS § 269-27.2(c) mandates delinking renewable energy rates from the price of fossil fuels:

The rate payable by the public utility to the producer for the nonfossil fuel generated electricity supplied to the public utility shall be as agreed between the public utility and the supplier and as approved by the public utilities commission; provided that in the event the public utility and the supplier fail to reach an agreement for a rate, the rate shall be as prescribed by the public utilities commission according to the powers and procedures provided in this chapter.

The commission's determination of the just and reasonable rate shall be accomplished by establishing a methodology that removes or significantly reduces any linkage between the price of fossil fuels and the rate for the nonfossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of nonfossil fuel generated electricity. As the commission deems appropriate, the just and reasonable rate for nonfossil fuel generated electricity supplied to the public utility by the producer may include mechanisms for reasonable and appropriate incremental adjustments, such as adjustments linked to consumer price indices for inflation or other acceptable adjustment mechanisms. [Emphasis added.]

The Legislature explained that:

[G]iven the alarming rise and precipitous drop of oil prices over the past year and a general lack of confidence in long-term fuel pricing forecasts, the regulatory standard of avoided cost has been difficult to define and has created barriers in the negotiations process for power purchase agreements, especially for clean energy products.

Therefore, the purpose of this Act is to refocus the regulatory standard to a methodology that is just and reasonable by significantly reducing any linkages between the volatile prices of fossil fuels and the rate for nonfossil fuel generated electricity. This Act also potentially enables utility customers to share in the benefits of price stability and fuel cost savings resulting from the use of nonfossil fuel generated electricity.

Section 1, Act 50, SLH 2009.

The final pricing structure of the PPA was determined through analysis of Kalaeloa Solar's submission of its bid proposal in conformance with the RFP and a subsequent series of proposals and negotiations between Kalaeloa Solar and Hawaiian Electric. See Exhibit 8. The negotiations, and Hawaiian Electric's determination that Kalaeloa Solar's pricing proposal was reasonable, took into account, among other things (1) competitive pricing provided in response to Hawaiian Electric's RFP; (2) Hawaiian Electric's desire for additional renewable energy resources; (3) the objective of delinking the pricing of Kalaeloa Solar's energy from fossil fuel prices; (4) the pricing of the proposal compared to Hawaiian Electric's estimated long-run avoided energy costs (taking into consideration uncertainties with respect to future oil prices); and (5) comparability to a similar technology and sized purchase power agreement, recently executed, and (6) also comparability to cost of generation based pricing developed in Hawaiian Electric's Feed-In Tariff program in Docket No. 2008-0273.⁴

After completing its evaluation, Hawaiian Electric concluded that the proposed pricing structure and pricing level negotiated and agreed upon by the Parties, as set forth in Appendix D of the PPA, are reasonable considering that (a) over the 20-year contract Term, the net present value ("NPV") of payments to Kalaeloa Solar are comparable to the NPV of Hawaiian Electric's

⁴ Hawaiian Electric also considered other pricing proposal information available to it, which supports its conclusion that the pricing is not unreasonable. In the future, Hawaiian Electric intends to develop information that considers the cost of developing and financing renewable energy projects, and will use such information in negotiating and structuring future pricing proposals.

total avoided costs based on the February 2010 fuel price forecast; (b) Kalaeloa Solar's initial energy pricing is within the range of Hawaiian Electric's filed avoided energy costs over the past year; (c) Kalaeloa Solar's pricing structure meets the requirement of HRS § 269-27.2(c) because there is no linkage between Kalaeloa Solar's energy price and Hawaiian Electric's cost of fossil fuels; (d) the fixed price structure is simple and will contribute to stabilizing Hawaiian Electric's overall energy prices; and (e) the pricing structure is comparable to the proposed Schedule FIT Tariff – Tier 3 – Oahu or Hawaiian Electric's calculation of avoided cost for such a facility. The information supporting the long-term avoided energy costs analysis and additional detailed discussion of Hawaiian Electric's evaluation and support of Kalaeloa Solar's pricing structure and pricing levels are found in Exhibit 8 to this Application, portions of which exhibit are or will be submitted under and subject to a protective order issued or to be issued in this proceeding.⁵

3. Pursuant to the PPA, Hawaiian Electric will purchase renewable energy from Kalaeloa Solar for a fixed price over a term of twenty (20) years. In addition to the monitoring of actual field data from the proposed Facility in order to appropriately characterize levelized cost value, the proposed Facility is expected to provide long-term value to ratepayers by acting as a renewable energy hedge against the uncertainty of future fossil fuel costs.

Hawaii Administrative Rules ("HAR") § 6-60-6(2) provides that:

No changes in fuel and purchased energy costs may be included in the fuel adjustment clause unless the contracts or prices for the purchase of such fuel or energy have been previously approved or filed with the [C]ommission.

4. For the same reasons provided above, Hawaiian Electric also seeks Commission

⁵ A redacted version of Exhibit 8 (Confidential) entitled "Pricing Structure and Negotiations" is attached hereto. (Pages 1, 3, 7, 8, 10, 11, 21, 23 and 24 of 26 contain confidential and proprietary information and have been redacted.) A copy of the confidential pages of Exhibit 8 (Confidential) will be filed with the Commission pursuant to protective order, as the negotiations and negotiation strategies are confidential and proprietary information, and disclosure of this confidential information could disadvantage Hawaiian Electric in its future negotiations for renewable energy.

approval to recover Hawaiian Electric's purchased energy charges and payments under the PPA through its ECAC, to the extent that the costs are not recovered in base rates, pursuant to HAR § 6-60-6 of the Commission's Rules Establishing Standards for Electric and Gas Utility Service in the State of Hawai'i.

5. Accordingly, in light of the above, Hawaiian Electric respectfully submits that the energy charges to be paid to Kalaeloa Solar are just and reasonable, and are consistent with HRS § 269-27.2, as amended, and the applicable provisions of HAR Chapter 6-74. For these reasons, Hawaiian Electric requests that the Commission find that the purchased energy charges to be paid by Hawaiian Electric pursuant to the PPA are reasonable.

E. THE PPA TERMS AND CONDITIONS ARE REASONABLE

The specific terms and conditions of the PPA, summarized above, and provided in Exhibit 1 were negotiated by the Parties at arm's-length and contain indemnification, insurance and other provisions which will serve to protect Hawaiian Electric and its customers from certain risks associated with interconnecting with Kalaeloa Solar's Facility. Moreover, the terms and conditions of the PPA will not affect Hawaiian Electric's ability to provide electric service to its customers and are not discriminatory to other small power producers. For these reasons, Hawaiian Electric requests that (1) the Commission approve the PPA, (2) the Commission find that the purchased energy charges to be paid by Hawaiian Electric pursuant to the PPA are reasonable, and (3) the Commission determine that the purchased power arrangements (e.g., terms and conditions) under the PPA, pursuant to which Hawaiian Electric purchases energy from Kalaeloa Solar, are prudent and in the public interest.

F. HAWAIIAN ELECTRIC-OWNED INTERCONNECTION FACILITIES

1. Subject to the terms and conditions in Appendix C of the PPA, Hawaiian Electric

will construct (or may allow Kalaeloa Solar to construct, in whole or in part), own, operate and maintain the Interconnection Facilities on Hawaiian Electric's side of the Point of Interconnection, specifically, to interconnect Hawaiian Electric's System with the Facility at 46 kV, up to the Point of Interconnection. Hawaiian Electric-owned Interconnection Facilities, for which Kalaeloa Solar has agreed to pay in accordance with Section 1.(b) of Appendix C of the PPA, include, but are not limited to, the following: (i) overhead 46 kV line extension; (ii) Direct Transfer Trip and Dead Line Check equipment; (iii) supervisory control and communications equipment (including but not limited to, SCADA/RTU) and space for Hawaiian Electric-owned SM2 RTU unit; (iv) relaying/protection upgrades; (v) primary and backup revenue metering equipment and switches; (vi) fiber communication equipment and link between Hawaiian Electric's Kahe Switching Station and Kalaeloa Solar's Facility; (vii) power quality meter and associated communication equipment and service at Kalaeloa Solar's Facility; (viii) lockout relays and space for Hawaiian Electric-owned relay panel housing lockout relays and associated equipment and (ix) any additional Interconnection Facilities needed to be installed as a result of any supplemental studies and any final determination of the Facility switching station site (the final design of the Facility must enable Hawaiian Electric to complete the Interconnection Facilities and comply with Good Engineering and Operating Practices, considering Hawaiian Electric's isolated island setting). See Section 1.(b) of Appendix C to the PPA. (Exhibit 1, pages 107-109).

2. All such Interconnection Facilities are required to be the property of Hawaiian Electric. See Section 4) of the PPA. (Exhibit 1, page 21). Where any Hawaiian Electric-owned Interconnection Facilities are to be located on the Site of the Facility, Kalaeloa Solar is obligated to provide, at no expense to Hawaiian Electric, a location and access acceptable to Hawaiian

Electric for all such facilities. In addition, Kalaeloa Solar has agreed to provide a reliable 48VDC source and 48VDC distribution panel to power Hawaiian Electric's equipment located at Kalaeloa Solar's Facility for a minimum 12-hour backup period. See Section 1.b.(3)(i) of Appendix B to the PPA. (Exhibit 1, pages 80-81).

3. Kalaeloa Solar is required to pay Hawaiian Electric for the cost to design, engineer, and construct Hawaiian Electric-owned Interconnection Facilities. See Section 2.(a) of Appendix C to the PPA. (Exhibit 1, pages 109-111). This PPA does not utilize a "price adder" mechanism. Specifically, Kalaeloa Solar initially pays to Hawaiian Electric the "Total Estimated Interconnection Cost" in accordance with the schedule set forth in Appendix C, Section 2.(b) of the PPA (Exhibit 1, pages 111-112), (see contract definitions section to the PPA) which is comprised of the estimated costs of (i) acquiring and installing such Hawaiian Electric-owned Interconnection Facilities; (ii) the engineering and design work (including but not limited to work done by Hawaiian Electric, Hawaiian Electric affiliates, and contracted engineers and designers) associated with (a) developing such Hawaiian Electric-owned Interconnection Facilities, and (b) reviewing and specifying those portions of Kalaeloa Solar's Facility which allow the interconnected operations described in Appendix B of the PPA; and (iii) conducting the Acceptance Test and Control System Acceptance Test. See Section 2.(a)(1) of Appendix C to the PPA. (Exhibit 1, pages 109-110). The Total Estimated Interconnection Cost (as defined in Appendix C of the PPA) is \$ 1,857,001. See Section 2.(a)(3) of Appendix C to the PPA. (Exhibit 1, pages 110-111). The Total Actual Interconnection Cost (the actual cost of items (i) through (iii) above), together with the cost of the IRS, comprise the Total Interconnection Cost. See Section 2.(a) of Appendix C to the PPA. (Exhibit 1, pages 109-110). Applicable taxes will be added to the Total Estimated Interconnection Cost and the Total Actual Interconnection Cost.

Once the Total Actual Interconnection Cost is known, a final accounting will occur pursuant to Appendix C, Section 2.(c) of the PPA ([Exhibit 1](#), page 112) to true-up Kalaeloa Solar's payments to equal the Total Actual Interconnection Cost.

G. HAWAII ENERGY POLICY

1. Kalaeloa Solar's project will help Hawaiian Electric meet the Hawaii Energy Policy goals by reducing Hawaiian Electric's reliance on fossil fuels and implementing additional renewable energy resources. It is estimated that the renewable energy supplied by Kalaeloa Solar's project will save approximately 17,000 barrels of fuel oil per year.

2. Hawaii's current reliance on imported fossil fuels, without any real opportunity for hedging against dramatic increases in oil prices, is untenable from an economic and security standpoint. In order to achieve these aggressive Renewable Energy Portfolio Standards ("RPS") goals, Hawaiian Electric must take advantage of solar power, which presents a promising opportunity to significantly advance the development and use of renewable energy for O`ahu.

3. The "Hawaii State Plan," which includes the overall theme, goals, objectives, policies, priority guidelines, and implementation mechanisms established in HRS Chapter 226, requires that planning for the State's facility systems with regard to energy is to be directed towards the achievement of:

- a. Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;
- b. Increased energy self-sufficiency;
- c. Greater energy security in the face of threats to Hawaii's energy supplies and systems; and
- d. Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use.

See HRS § 226-18.

The objectives in the area of alternate and renewable energy are to promote

commercialization of Hawaii's sustainable energy resources and technologies to reduce the State's high dependence on imported oil, increase local economic development, and reduce the potential negative economic impacts of oil price fluctuations.

4. In support of these objectives, the Hawaii State Legislature enacted RPS goals in 2001, and has continued to add to the requirements of Hawaii's RPS law in subsequent legislative sessions. HRS § 269-92(a), as amended by Act 162 (2006), formerly provided that each electric utility company⁶ that sells electricity for consumption in Hawaii will establish a RPS of:

- (1) 10% of its net electricity sales by December 31, 2010;
- (2) 15% of its net electricity sales by December 31, 2015; and
- (3) 20% of its net electricity sales by December 31, 2020.

5. HRS § 269-91 defines "renewable portfolio standard" to mean "the percentage of electrical energy sales that is represented by renewable electrical energy." HRS § 269-92(b)(1) formerly required that at least 50% of the RPS be met by electrical energy generated using renewable energy as the source.

6. In the 2009 legislative session, the Legislature enacted and the Governor subsequently signed Act 155, which adds to or amends various portions of the HRS related to clean energy. Act 155 states: "Attaining independence from Hawaii's detrimental reliance on fossil fuels has been a longstanding objective for the State." "Hawaii is the state most dependent on petroleum for its energy needs. It pays the highest electricity prices in the United States, and its gasoline costs are among the highest in the country." As a result "Reducing our oil dependence and the consequent price volatility and attaining energy security are critical."

⁶ HRS § 269-93 provides: "An electric utility company and its electric utility affiliates may aggregate their renewable portfolios in order to achieve the renewable portfolio standard."

7. Act 155, among other things, increases electric utilities' 2020 RPS requirement from 20% to 25%, and adds a new 40% requirement for the year 2030. In addition, whereas prior to January 1, 2015, only 50% of a utility's RPS needed to be met by "electrical generation using renewable energy as the source", after January 1, 2015, a utility's entire RPS will need to be met by renewable generation, and "electrical energy savings" (i.e., energy efficiency) will no longer count toward RPS requirements.

II. HAWAIIAN ELECTRIC

Hawaiian Electric, whose principal place of business and executive offices are located at 900 Richards Street, Honolulu, Hawai'i 96813, is a corporation duly organized under the laws of the Kingdom of Hawai'i on or about October 13, 1891, and now exists under and by virtue of the laws of the State of Hawai'i. Hawaiian Electric is an operating public utility engaged in the production, transmission, distribution, purchase and sale of electric energy on the island of O'ahu.

III. KALAELOA SOLAR OWNERSHIP AND QUALIFICATION

1. Kalaeloa Solar is a Delaware limited liability company registered to do business in Hawaii and is a wholly owned subsidiary of SunPower Corporation, Systems, a Delaware corporation. Kalaeloa Solar's principal place of business is 1414 Harbour Way South, Richmond, California 94804. A brief description of Kalaeloa Solar and its affiliates is attached hereto as Exhibit 2.

2. Kalaeloa Solar represents and warrants that (i) as of the Effective Date, February 18, 2011, it is an entity in good standing with the Department of Commerce and Consumer Affairs of the State of Hawai'i and (ii) any and all energy delivered by Kalaeloa Solar to Hawaiian Electric from or through Kalaeloa Solar's Facility throughout the term of the PPA

meets the definition of “renewable electrical energy” or “renewable energy” as defined under HRS § 269-91 as of the Effective Date of this PPA. See Section 22(b) of the PPA. (Exhibit 1, page 44). A copy of Kalaeloa Solar’s Certificate of Good Standing dated January 11, 2011 is attached at Exhibit 2 to this application.

IV. CORRESPONDENCE AND COMMUNICATIONS

Pleadings, correspondence, and notices regarding this Application should be directed to the following:

Dean K. Matsuura
Manager, Regulatory Affairs
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawai`i 96840

Copies of such correspondence and communications should be sent to:

Shah J. Bento, Esq.
Law Office of Shah J. Bento, LLLC
P.O. Box 4110
Honolulu, Hawai`i 96812

Correspondence and communications from the Commission in regard to this Application should be addressed to Dean K. Matsuura as listed above.

V. THE KALAELOA SOLAR PHOTOVOLTAIC ENERGY FACILITY

A. SITE

As set forth above, the proposed Facility will be located at Kalaeloa, Ewa District, Kapolei, O’ahu, State of Hawai`i, as further described in Appendix A of the PPA. The approximate location of the Facility is shown on the map attached to this Application as Exhibit 5. The Kalaeloa project site is located at TMK No. (1) 9-1-13:28 and 38 / Kalaeloa, Oahu. Kalaeloa Solar will sublease the site from an affiliate formed to enter into a master lease with the Department of Hawaiian Home Lands for the specific purpose of locating the Facility. (Exhibit

2, page 1) The lease term will cover the life of the PPA, 20.5 to 21 years total. The land is zoned “F-1, Military-Federal”.

B. PHOTOVOLTAIC ENERGY FACILITY

1. 5 MW Photovoltaic Energy Facility

Pursuant to the PPA, Kalaeloa Solar will develop, design, construct, own, operate, and maintain the solar photovoltaic energy facility to produce an estimated 5.0 MW net electrical output. See Section 5.b. of Appendix A to the PPA. (Exhibit 1, pages 63-64). Kalaeloa Solar intends for its parent company, SunPower Corporation, Systems, to operate the Facility. A copy of the agreement between Kalaeloa Solar and the operator will be provided to Hawaiian Electric no later than 60 days after receipt of the Non-Appealable PUC Approval Order. The agreement must establish the scope of operations by the operator and respective rights of Kalaeloa Solar and the operator with respect to the sale of electric energy. Kalaeloa Solar must also provide a certificate warranting that the operator is a company in good standing with the Hawaii Department of Commerce and Consumer Affairs. See contract definitions section of the PPA and Appendix A, Section 2 of the PPA. (Exhibit 1, page 63).

2. Allowed Capacity

The net instantaneous MW output from the Facility may not exceed the “Allowed Capacity” of 5,000 kW as specified in Appendix A of the PPA. See Section 5.e. of Appendix A to the PPA. (Exhibit 1, page 64).

3. Photovoltaic Modules and Inverters

The Facility produces electricity using solar photovoltaic modules and inverters. The Facility will generate dc electric energy using 17,784 photovoltaic modules, which will be converted to ac energy using individual inverters with rated capacity of 100-135kVA (the

inverter specifications to be determined and provided at a later date by Kalaeloa Solar and will be subject to the reasonable approval of Hawaiian Electric). See Section 5.b. of Appendix A, and Section 1.b.(2) of Appendix B to the PPA. (Exhibit 1, pages 63-64 and pages 76-78, respectively).

4. Other Equipment

The Facility will step the inverter output up to 46 kV using 34.5/19.9 kV:265/460 V Generator Step-Up (“GSU”) transformers (with further specifications to be determined and provided at a later date by Kalaeloa Solar subject to reasonable approval by Hawaiian Electric); and a single 4/5 MVA, 46:34.5 kV transformer. The Facility will feed AC electric energy to Hawaiian Electric via an extension of Hawaiian Electric’s existing Kahe-Standard Oil No. 2 46 kV feeder, i.e. overhead (approximately 2,250 feet) to a location proposed by Kalaeloa Solar, near or in its Facility (TMK: 9-1-013:28) from Roosevelt Road. The Facility switching station will include a 72.5 kV, 1200 A circuit breaker, and metering and protection as outlined below. See Section 1.(b) of Appendix C to the PPA (Exhibit 1, page 107; see also Section 5.b. of Appendix A, and Section 1.b.(2) of Appendix B to the PPA. (Exhibit 1, pages 63-64 and pages 76-78, respectively).

5. Metering

Hawaiian Electric will purchase and own meters suitable for Hawaiian Electric to measure the net energy output from Kalaeloa Solar’s photovoltaic energy facility in kilowatts and kilowatthours on a time-of-day basis and of reactive power flow in kilovar hours. The metering point will be at the Point of Interconnection. See Section 10)(a) of the PPA. (Exhibit 1, page 26).

6. Single-line Diagram, Relay List and Trip Scheme

A preliminary single-line diagram and relay list, relay settings, and trip scheme of the Facility are attached to the PPA as Exhibit B-1 (Single-Line Drawing) and Exhibit B-2 (Relay List and Trip Scheme). A final single-line drawing, relay list and trip scheme of the Facility will, after having obtained prior written consent from Hawaiian Electric, be labeled “Final” Exhibit B-1 and Exhibit B-2 and attached to this Agreement and made a part hereof on the Commercial Operations Date. An updated final single-line drawing showing any changes made after the Commercial Operations Date will be provided to Hawaiian Electric within thirty (30) Days after the In-Service Date and be made part of the Agreement. The single-line diagrams will expressly identify the Point of Interconnection of the Facility to Hawaiian Electric’s System. Kalaeloa Solar agrees that no material changes or additions to the Facility as reflected in the final single-line diagram, relay list and trip scheme will be made without Kalaeloa Solar first having obtained prior written consent from Hawaiian Electric if such material changes or additions could reasonably have an adverse impact on the performance of the Facility. See Section 1.a. of Appendix B to the PPA. (Exhibit 1, page 76).

7. Design of the Photovoltaic Energy Facility

In general, Kalaeloa Solar is responsible for the design of its photovoltaic energy facility. If any changes in or additions to Kalaeloa Solar’s Facility, records and operating procedures are required by Hawaiian Electric, Hawaiian Electric will specify such changes or additions to Kalaeloa Solar in writing, and, except in the case of an emergency, Kalaeloa Solar will have the opportunity to review and comment upon any such changes or additions in advance. See Section 1.a. of Appendix B to the PPA. (Exhibit 1, page 76).

8. Permits

Kalaeloa Solar is responsible for the acquisition of all approvals and permits required for the construction and operation of its Facility, including but not limited to rights-of-way, easements or leases. See Section 11)(a) of the PPA. (Exhibit 1, page 27).

VI. TERM

A. TERM

1. Term of PPA

Subject to Section 12) of the PPA, the Term of the PPA commences on the Effective Date of the PPA and remains in effect for an initial term of twenty (20) Contract Years following the Commercial Operations Date and continues thereafter until terminated by either party as provided in the PPA. See Section 12)(a) of the PPA. (Exhibit 1, page 28). Either party may terminate the PPA at any time after the end of the Initial Term upon not less than one hundred eighty (180) Days notice to the other party. The Annual Contract Energy and the Contract Price in effect at the end of the Initial Term remains in effect during any Extension Term until terminated by either party as provided under the PPA.

2. PUC Approval Order

Upon the Effective Date of the PPA, the Parties are required to use their reasonable efforts to obtain a PUC Approval Order satisfactory to the Parties. See Section 12)(c) of the PPA. (Exhibit 1, pages 28-29). A satisfactory PUC Approval Order includes, at a minimum, the following: authorization for the purchased energy charges to be paid by Hawaiian Electric to Kalaeloa Solar under the PPA (and related revenue taxes) to be included in Hawaiian Electric's ECAC (or equivalent), for the Term of this PPA. If the satisfactory PUC Approval Order is not obtained within twelve (12) months of the PUC Submittal Date, (see contract definitions section

to the PPA) or within a longer period as Hawaiian Electric and Kalaeloa Solar may agree to by a written agreement, Hawaiian Electric or Kalaeloa Solar may, by written notice delivered within thirty (30) days of such date, declare the PPA null and void.

3. PUC Approval OrderAppealed

If the PUC Approval Order is appealed, the parties will meet within six months of the PUC Approval Order Date and decide whether to waive the requirement of obtaining a satisfactory Non-appealable PUC Approval Order. Neither party is required to agree to such a Waiver Agreement (see contract definitions section of the PPA). If the parties enter into a Waiver Agreement, Kalaeloa Solar has agreed that it will proceed with its performance solely at its own risk. Furthermore, if the parties conclude a Waiver Agreement, the provisions of the PPA that would otherwise become effective upon obtaining a satisfactory Non-appealable PUC Approval Order will become effective as of the date of the Waiver Agreement Date.

4. Termination

Notwithstanding any of the foregoing, the PPA may be terminated as provided in the PPA at any time upon the occurrence of any condition described in Section 15 (Event of Default).

B. ACCEPTANCE TEST

An Acceptance Test, as defined in the "Definitions" section and referenced in Appendix B (Facility Owned by Seller) of the PPA, means a test conducted by Kalaeloa Solar and, at Hawaiian Electric's option, witnessed by Hawaiian Electric, within thirty (30) Days of completion of all Interconnection Facilities and in accordance with criteria determined by Hawaiian Electric, of Hawaiian Electric-owned Interconnection Facilities (see contract definitions section to the PPA) and the interconnection portion of Kalaeloa Solar's Facility to

determine conformance with Section 3) and Appendix C and Good Engineering and Operating Practices, considering Hawaiian Electric's isolated island setting. Successful completion of the Acceptance Test to Hawaiian Electric's satisfaction is a condition precedent for the performance of the Control System Acceptance Test and the Commercial Operation Date. No energy will be delivered from Kalaeloa Solar to Hawaiian Electric during the Acceptance Test. No later than fifteen (15) Business Days prior to conducting the Acceptance Test, Hawaiian Electric and Kalaeloa Solar are obligated to agree on a written protocol setting out the detailed procedure and criteria for passing the Acceptance Test. Within ten (10) Business Days of successful completion of the Acceptance Test, Hawaiian Electric is required to notify Kalaeloa Solar in writing that the Acceptance Test has been passed and the date upon which the Acceptance Test was passed.

C. CONTROL SYSTEM ACCEPTANCE TEST

1. The Control System Acceptance Test, as defined in the "Definitions" section and referenced in Appendix B (Facility Owned by Seller) of the PPA, means a test or tests performed on the centralized control system and Curtailment Control Interface of Kalaeloa Solar's Facility, consisting of a functional demonstration of the equipment through the successful completion of such test to Hawaiian Electric's satisfaction, and conducted in accordance with the procedures set forth in Section 1.h. of Appendix B to the PPA.

2. Following the successful completion of the Acceptance Test, the Control System Acceptance Test(s) are to be conducted. See Section 1.h. of Appendix B to the PPA. (Exhibit 1, page 84).

D. FAILURE TO ACHIEVE COMMERCIAL OPERATION; LIQUIDATED DAMAGES

Following the applicable cure period(s), if GCOD has still not been achieved, Hawaiian

Electric has the right to collect, and Kalaeloa Solar is obligated to pay, liquidated damages in the amount of \$167 per MW multiplied by the Contract Capacity for each Day ("Daily Delay Damages") up to a maximum amount of \$150,000 as set forth in Section 13)(f) of the PPA. Hawaiian Electric also has the right to collect Termination Damages, which are calculated by multiplying the Allowed Capacity by \$30 per kW in accordance with Section 16 of the PPA. The Parties have agreed that the damages Hawaiian Electric would incur due to early termination would be difficult or impossible to predict with certainty and that the specified Termination Damages are an appropriate approximation of such damages. See Section 16)(c) of the PPA. (Exhibit 1, page 38).

VII. INTERCONNECTION

A. INTERCONNECTION OF KALAELOA SOLAR'S PHOTOVOLTAIC ENERGY FACILITY TO HAWAIIAN ELECTRIC'S SYSTEM

1. Under the PPA, Kalaeloa Solar is required to furnish, install, operate and maintain the Facility including breakers, relays, switches, synchronizing equipment, monitoring equipment and control and protective devices designated by Hawaiian Electric as suitable for parallel operation of the Facility with Hawaiian Electric's System. The Facility must be accessible at all times to authorized Hawaiian Electric personnel including 24 hour vehicle access to Hawaiian Electric-owned poles, switches, and 46 kV overhead conductors. See Section 1.b.(1) of Appendix B to the PPA. (Exhibit 1, page 76).

2. The net instantaneous MW output from the Facility is not permitted under the PPA to exceed the Allowed Capacity specified in Appendix A of the PPA. Hawaiian Electric may take appropriate action to limit the Allowed Capacity to the extent provided for under the PPA. See Section 3)(b) of the PPA. (Exhibit 1, page 20).

3. Kalaeloa Solar has agreed to furnish space at no expense to Hawaiian Electric for

those Interconnection Facilities required to be placed at the Facility/Site, as well as easements for and rights of access to any Hawaiian Electric-owned Interconnection Facilities located on the Site or at the Facility. See Section 1.(a) of Appendix C to the PPA. (Exhibit 1, page 107). Kalaeloa Solar must also furnish, install, operate, and maintain Kalaeloa Solar's Facility including breakers, relays, switches, synchronizing equipment, monitoring equipment and control and protective devices designated by Hawaiian Electric as suitable for parallel operation of Kalaeloa Solar's Facility with Hawaiian Electric's System, including such equipment, records and operating procedures as are more fully described in Appendix B of the PPA. See Section 1.b. of Appendix B to the PPA. (Exhibit 1, page 76).

4. The Point of Interconnection is shown on the single-line drawing, provided by Kalaeloa Solar and reviewed by Hawaiian Electric, which is attached as Exhibit B-1 to Appendix B, and required under Section 1.a. of Appendix B of the PPA. The Point of Interconnection will be at the voltage level of Hawaiian Electric's System. If it is necessary to step up the voltage at which Kalaeloa Solar's energy is delivered to Hawaiian Electric's System, the Point of Interconnection will be on the high voltage side of the step-up transformer. See generally Section 1.a. and 1.b. of Appendix B to the PPA. (Exhibit 1, pages 76-81).

B. INTERCONNECTION REQUIREMENTS STUDY

1. An "Interconnection Requirements Study" ("IRS") (see contract definitions section to the PPA) was required to be performed at Kalaeloa Solar's expense. A copy of the "IRS Letter Agreement" dated March 13, 2009, is attached hereto as Exhibit 6.⁷ The primary purposes of the IRS are to: (a) identify the system requirements to integrate the Facility with

⁷ Exhibit 6 has been redacted in its entirety. It consists of the executed "Interconnection Requirements Study Agreement for SunPower Corporation" (IRS Letter Agreement) and pages 1 through 4 thereof (which includes the terms, conditions and signature page of the IRS Letter Agreement. The unredacted Exhibit 6 will be provided to the Commission under a protective order.

Hawaiian Electric's system, (b) evaluate the steady state and dynamic impacts to Hawaiian Electric's system of the Proposed Facility, and (c) develop performance requirements for the Facility, in each case taking into account, as appropriate, that Hawaiian Electric's system will continue to evolve and that the integration of the Facility should be accomplished in a manner that does not compromise the integration of future generation resources. See generally Exhibit 6, page 1, and Exhibit 7.

2. On July 2, 2010, on behalf of Hawaiian Electric, Black & Veatch Corporation ("Black & Veatch") issued its IRS entitled "Renewable Energy RFP Interconnection Requirements Study – SunPower Corporation" ("IRS").⁸

3. In summary, the Kalaeloa Solar project will be interconnected to the Hawaiian Electric system at 46 kV along the Kahe-Standard Oil No. 2 circuit. Black & Veatch conducted power flow, short circuit, and dynamic simulations to analyze the impact that the Kalaeloa Solar project would have on the existing Hawaiian Electric system. See Exhibit 7.

C. KALAELOA SOLAR'S PROVISION OF SERVICE AND/OR MATERIAL FOR SPECIFIED HAWAIIAN ELECTRIC-OWNED INTERCONNECTION FACILITIES

1. Kalaeloa Solar will transfer ownership of Hawaiian Electric-owned Interconnection Facilities to the extent such facilities were designed and constructed by Kalaeloa Solar and/or its Contractors, free and clear of liens and encumbrances, on the Transfer Date (see contract definitions section to the PPA). See Section 7 of Appendix C to the PPA, (Exhibit 1, pages 115-116).

2. Kalaeloa Solar will also obtain all required approvals and permits required to

⁸ Exhibit 7 has been redacted in its entirety. It consists of the cover sheet, Table of Contents, and pages 1 through 105 (which includes the Executive Summary, Conclusions and Recommendations) of the IRS. The unredacted Exhibit 7 will be provided to the Commission under a protective order.

construct, own, operate and maintain Hawaiian Electric-owned Interconnection Facilities. See Appendix C, Section 8 of the PPA. (Exhibit 1, page 116). Kalaeloa Solar is in the process of negotiating the easements for the 46 kV overhead route. Under the PPA, Kalaeloa Solar will also obtain all easements, rights of way, licenses and leases on the Site of the Facility and any other affected property, which are required to construct, maintain and operate Hawaiian Electric-owned Interconnection Facilities. See Section 9) of Appendix C to the PPA. (Exhibit 1, page 116).

D. PAYMENT OF INTERCONNECTION COSTS

In addition to all amounts payable to Hawaiian Electric by Kalaeloa Solar pursuant to Appendix C of the PPA, Kalaeloa Solar is required to pay to Hawaiian Electric a monthly metering charge of \$25.00 per month which is in addition to any charges due Hawaiian Electric pursuant to the applicable rate schedule pursuant to Section 2)(f) of the PPA. See Section 7) of the PPA. (Exhibit 1, page 23). Kalaeloa Solar is also required to obtain an Irrevocable Standby Letter of Credit with no Documentary Requirement (“Standby Letter of Credit”) (or such other form of security as is agreed to by Hawaiian Electric in writing) to ensure that Hawaiian Electric is paid by Kalaeloa Solar for Hawaiian Electric-owned Interconnection Facilities to be provided and/or constructed by Hawaiian Electric as described in Section 2 of Appendix C of the PPA. Requirements for the Standby Letter of Credit are set forth in Section 5 of Appendix C of the PPA. See Section 5 of Appendix C to the PPA. (Exhibit 1, pages 113-114).

The list of Hawaiian Electric-owned Interconnection Facilities, and engineering and testing costs for Hawaiian Electric-owned Interconnection Facilities, for which Kalaeloa Solar agrees to pay in accordance with Section 2 of Appendix C of the PPA, are subject to revision if:

(a) before approving the PPA, the Commission approves a power purchase agreement for

another non-Hawaiian Electric-owned electric generating facility (“Second NUG Contract”) to supply energy to Hawaiian Electric, using the same line to which the Facility is to be connected, or (b) the line to which the Facility is to be connected and/or the related transformer(s) need(s) to be upgraded and/or replaced as a result of the PPA and a Second NUG Contract, and the Commission, in approving the PPA, determines that Kalaeloa Solar should pay for all or part of the cost of the upgrade and/or replacement. See Section 1.(b) of Appendix C to the PPA. (Exhibit 1, pages 107-109).

The PPA allows Hawaiian Electric to bill Kalaeloa Solar monthly for any costs incurred in operating, maintaining and replacing (to the extent not covered by insurance) Hawaiian Electric-owned Interconnection Facilities. Hawaiian Electric’s costs are to be determined on the basis of, but are not limited to, direct payroll, material costs, applicable overheads at the time incurred, consulting fees and applicable taxes. Kalaeloa Solar must, within thirty (30) days after the billing date, reimburse Hawaiian Electric for the monthly billed operation and maintenance charges. See Section 3 of Appendix C to the PPA. (Exhibit 1, page 113).

Hawaiian Electric will bill Kalaeloa Solar for any costs incurred in relocating Hawaiian Electric-owned Interconnection Facilities in the event that Kalaeloa Solar’s land rights contain a relocation clause and such clause is exercised or if Hawaiian Electric-owned Interconnection Facilities must be relocated for any other reason not caused by Hawaiian Electric. Kalaeloa Solar is required, within thirty (30) days after the billing date, to reimburse Hawaiian Electric for the billed relocation charges. See Section 4 of Appendix C to the PPA. (Exhibit 1, page 113).

E. SITE RESTORATION

After termination of the PPA, or if applicable, when Kalaeloa Solar’s Facility ceases operations as set forth in Section 6.(b) of Appendix C of the PPA, Kalaeloa Solar is required, at

its expense, to remove all (1) Hawaiian Electric-owned Interconnection Facilities from the Site, and (2) Kalaeloa Solar-owned Interconnection Facilities designated by Hawaiian Electric; provided, however, that Hawaiian Electric may elect to have Hawaiian Electric rather than Kalaeloa Solar remove all or part of the designated Hawaiian Electric-owned Interconnection Facilities and/or designated Kalaeloa Solar-owned Interconnection Facilities because of operational concerns over the removal of such Interconnection Facilities, in which case Kalaeloa Solar will reimburse Hawaiian Electric for its reasonable costs to remove Hawaiian Electric-owned Interconnection Facilities and/or Kalaeloa Solar-owned Interconnection Facilities. See Section 6 of Appendix C to the PPA. (Exhibit 1, pages 114-115). Notwithstanding any other provision in the PPA, if pursuant to any arrangement then permitted under applicable law Kalaeloa Solar's Facility continues to operate and generate energy following the termination of the PPA, Kalaeloa Solar will not be required to remove any Interconnection Facilities necessary to continue its operations until such time as Kalaeloa Solar's Facility permanently ceases to generate energy pursuant to applicable law. See Section 6.(b) of Appendix C to the PPA. (Exhibit 1, pages 114-115). Nothing in the foregoing grants Kalaeloa Solar any right to use Hawaiian Electric-owned Interconnection Facilities following the termination of the PPA and, to the extent Kalaeloa Solar continues to operate Kalaeloa Solar's Facility and utilize any Interconnection Facilities following the termination of the PPA, Kalaeloa Solar has agreed to indemnify, defend and hold Hawaiian Electric harmless, as more fully set forth in the PPA at Section 6.(b) of Appendix C.

VIII. DELIVERY OF AS-AVAILABLE ENERGY

A. INTRODUCTION

The PPA is for as-available energy pursuant to which Hawaiian Electric will purchase the

energy made available to the Hawaiian Electric system in accordance with the terms and conditions of the PPA, subject to Hawaiian Electric's rights in the PPA to curtail the output of the Facility for reasons such as excess energy and to disconnect the Facility.

B. NORMAL CURTAILMENT PROVISIONS

1. Under Section 8) of the PPA, Hawaiian Electric may require Kalaeloa Solar to temporarily curtail, interrupt or reduce deliveries of energy from the Facility when necessary: (1) in order for Hawaiian Electric to construct, install, maintain, repair, replace, remove, investigate, test or inspect any of its equipment or any part of Hawaiian Electric's System (see Section 8)(a) of the PPA (Exhibit 1, pages 23-24)) including, but not limited to, accommodating the installation and/or acceptance test of non-utility-owned facilities to Hawaiian Electric's System; (2) if Hawaiian Electric determines that curtailment, interruption or reduction is necessary because of Hawaiian Electric's System emergency, "Forced Outage", (see contract definitions section to the PPA) or operating conditions on Hawaiian Electric's System; (3) if Hawaiian Electric is unable to accept deliveries of energy due to light loading conditions (see Section 8)(d) of the PPA (Exhibit 1, pages 24-25)); or (4) if either the Facility does not operate in compliance with Good Engineering and Operating Practices, considering Hawaiian Electric's isolated island setting, or acceptance of energy from Kalaeloa Solar by Hawaiian Electric would require Hawaiian Electric to operate its system outside of Good Engineering and Operating Practices, considering Hawaiian Electric's isolated island setting, which includes, but is not limited to, excessive system frequency fluctuations or excessive voltage deviations, and any situation that Hawaiian Electric's System Operator (see contract definitions section to the PPA) determines, at his or her sole discretion using Good Engineering and Operating Practices considering Hawaiian Electric's isolated island setting, could place the reliability of Hawaiian

Electric's System in jeopardy. See Section 8)(a) of the PPA. (Exhibit 1, pages 23-24).

2. In the event that Hawaiian Electric initiates a "Curtailment Event" pursuant to Section 8)(a), Hawaiian Electric is not obligated to accept or pay for any energy from Kalaeloa Solar except for the energy that Hawaiian Electric notifies Kalaeloa Solar that it is able to take during the duration of this period.

3. Pursuant to Section 8)(b) of the PPA, Hawaiian Electric is not required to purchase energy during any period during which, due to operational circumstances, purchases from Kalaeloa Solar will result in costs greater than those which Hawaiian Electric would incur if it did not make those purchases, but instead generated an equivalent amount of energy itself. Hawaiian Electric is required to provide Kalaeloa Solar with at least twenty-four (24) hours advance oral or written notice of any such period to allow Kalaeloa Solar to cease the delivery of energy to Hawaiian Electric. Hawaiian Electric will not curtail pursuant to Section 8)(b) solely as a consequence of Hawaiian Electric's filed Avoided Energy Cost Data being lower than the applicable price per MWh paid to Kalaeloa Solar under the PPA. Hawaiian Electric and Kalaeloa Solar have acknowledged that this section is construed in accordance with 18 CFR § 292.304(f) of the Regulations under PURPA issued by the Federal Energy Regulatory Commission and HAR § 6-74-24, "Standards for Small Power Production and Cogeneration" promulgated by the Commission.

4. Notwithstanding the above, the curtailment terms and conditions under Section 8) of the PPA are not intended to permit Hawaiian Electric to require Kalaeloa Solar to curtail, interrupt or reduce deliveries of energy based on Hawaiian Electric's economic dispatch, (for example, as a consequence of Hawaiian Electric's filed Avoided Cost Data being lower than the applicable price per MWh paid to Kalaeloa Solar under this Agreement, or to make purchases

from a Qualifying Facility). See Section 8)(c) of the PPA. (Exhibit 1, page 24).

5. Hawaiian Electric has agreed to take all reasonable steps (such as reducing the output of a base load generating unit, including its own base load generating units, during light loading conditions, taking into consideration factors such as the need to maintain system reliability and stability under changing system conditions and configurations, the need for downward regulating reserves, the terms and conditions of power purchase agreements for base load units or scheduled energy, and the normal minimum loading levels of such base load units) to minimize the number and duration of curtailments, interruptions or reductions, subject to and in accordance with Appendix B of the PPA.⁹ In addition to the above, Hawaiian Electric will provide Kalaeloa Solar with a “Curtailment Report” in the form attached as Appendix B-3 of the PPA documenting the curtailment to the Facility on a monthly basis. See Section 8)(f) of the PPA. (Exhibit 1, page 25). See also Appendix B-3 to the PPA.

C. SAFETY DISCONNECTION OR CURTAILMENTS

1. Kalaeloa Solar must separate from Hawaiian Electric’s System whenever requested to do so by Hawaiian Electric’s System Operator pursuant to Sections 8) and 9) of the PPA. When separated from Hawaiian Electric’s System, Kalaeloa Solar is prohibited from reclosing into Hawaiian Electric’s System without first obtaining specific approval to do so from Hawaiian Electric’s System Operator. See Sections 2.b. and 2.d. of Appendix B to the PPA. (Exhibit 1, page 85).

2. Notwithstanding any other provisions of the PPA, if at any time Hawaiian Electric reasonably determines that the Facility may endanger Hawaiian Electric’s personnel, and/or the continued operation of the Facility may endanger the integrity of Hawaiian Electric’s System or

have an adverse effect on Hawaiian Electric's other customers' electric service, Hawaiian Electric has the right to curtail or disconnect the Facility from Hawaiian Electric's System, as determined by Hawaiian Electric's System Operator in his or her sole discretion. See Section 9) of the PPA. (Exhibit 1, pages 25-26).

The Facility must remain curtailed or disconnected, as the case may be, until such time as Hawaiian Electric is satisfied that the condition(s) referred to above have been corrected, and Hawaiian Electric is not obligated to accept or pay for any energy except for such energy as is accepted by Hawaiian Electric from Kalaeloa Solar during such period. If Hawaiian Electric curtails or disconnects the Facility from Hawaiian Electric's System for personnel or system safety reasons, it is obligated, as soon as practicable, to notify Kalaeloa Solar by telephone and thereafter confirm in writing the reasons for the curtailment or disconnection. See Section 9) of the PPA (Exhibit 1, pages 25-26).

D. CURTAILMENT CONTROL INTERFACE

1. Kalaeloa Solar must provide and maintain in good working order all equipment, computers and software necessary to initiate, control the level of, and remove curtailments when required under Section 2.e of Appendix B ("Curtailment Control Interface") (see contract definitions section of the PPA). The implementation of the Curtailment Control Interface will allow Hawaiian Electric's System Operator to initiate the curtailment, vary the level of curtailment, and remove the curtailment remotely from Hawaiian Electric's System Operations Control Center through control signals from Hawaiian Electric's SCADA and EMS systems.

See Section 1.g. of Appendix B to the PPA. (Exhibit 1, pages 83-84).

⁹ See Section 8)(d) of the PPA. (Exhibit 1, pages 24-25). See also Sections 1.g. and 2.e. of Appendix B to the PPA (Exhibit 1, pages 83 and 85, respectively) for the description of the Curtailment Control Interface and the operating procedures required to curtail energy deliveries by Kalaeloa Solar.

2. The Curtailment Control Interface will include, but is not limited to, a demarcation cabinet, ancillary equipment and software necessary for Kalaeloa Solar to connect to Hawaiian Electric's Remote Terminal Unit (RTU), located in Hawaiian Electric's portion of the Facility switching station which will provide the control signals to the Facility and send feedback status to Hawaiian Electric's System Operations Control Center. The Curtailment Control Interface will also include provision for a feedback point from the Facility indicating when curtailment is in effect, the instantaneous MW output of all individual generating units, and the net instantaneous MW output of the Facility at the Point of Interconnection. Kalaeloa Solar will provide an analog input to the RTU for the MW output of the individual generating units, and an analog signal for the total MW output at the Point of Interconnection. See Section 1.g. of Appendix B to the PPA. (Exhibit 1, pages 83-84).

3. When a curtailment lower control signal is received by the Facility through the Curtailment Control Interface, the corresponding action (e.g., decrease in the Facility's output) will be initiated without delay. The Curtailment Control Interface will provide for separate curtailment control and the indication of curtailment for the individual generating units, and for Kalaeloa Solar's Facility as a whole; provided, however, that if such separate control features are not provided by Kalaeloa Solar, whether temporarily or throughout the term of the PPA, then, notwithstanding any other provision of Appendix B to the PPA, Hawaiian Electric will have the right to curtail all of the Facility during those periods that such separate control features are not provided. The Curtailment Control Interface will be capable of receiving from Hawaiian Electric a set point curtailment limit of any level between the maximum output of the Facility and zero. Provided that the curtailment limit set by Hawaiian Electric is below the present output of the Facility, the output will be ramped from the present output to the curtailment limit at a ramp rate

not to exceed the limits in Section 3.c of Appendix B to the PPA. The ramp rate limits specified in Section 3.c of Appendix B to the PPA will not be exceeded when the Facility's output is being curtailed or uncurtailed. The requirements of the Curtailment Control Interface may be modified as mutually agreed upon in writing by the parties. See Section 1.g. of Appendix B to the PPA. (Exhibit 1, pages 83-84).

E. LOCAL CONTROL

If either Hawaiian Electric's SCADA and EMS Systems or Seller's Curtailment Control Interface system is unavailable due to loss of a communication link, RTU failure, or other event resulting in the loss of remote control by Hawaiian Electric, provision must be made by Kalaeloa Solar to institute, within 30 minutes or such other period as Hawaiian Electric accepts in writing, local curtailment raise and lower control, open breaker control, and change in power factor target via the local controls upon verbal request by Hawaiian Electric's System Operator. See Section 2.e.(3) of Appendix B to the PPA. (Exhibit 1, pages 86-87).

F. CURTAILMENT PRIORITY

1. When Hawaiian Electric determines that curtailment of energy becomes necessary for reasons other than those directly attributable to the Facility, curtailments will be made to the extent possible in reverse chronological order of the chronological seniority dates determined by Hawaiian Electric for the power purchase agreements, with deliveries under the agreement with the most recent chronological seniority date being the first curtailed, and deliveries under the agreement with the earliest chronological seniority date being the last curtailed.

2. The chronological seniority date will be the PUC Approval Order Date of the satisfactory Non-appealable PUC Approval Order. If Kalaeloa Solar does not achieve a Commercial Operations Date on or before twelve (12) months following the earlier of the

Waiver Agreement Date or the satisfactory Non-appealable PUC Approval Order Date, the chronological seniority date for curtailment will change by adding one Day for each Day the Commercial Operations Date is later than twelve (12) months after the earlier of the Waiver Agreement Date or the satisfactory Non-Appealable PUC Approval Order Date.

3. When Hawaiian Electric determines that curtailment of energy becomes necessary for engineering and/or operating reasons that are directly attributable to the Facility, reverse chronological curtailment order may not apply. Hawaiian Electric will not be liable to Kalaeloa Solar for any such curtailments unless they were in violation of Section 8 or Section 9 of the PPA. Kalaeloa Solar must not override Hawaiian Electric's curtailment. See Section 2.e of Appendix B to the PPA. (Exhibit 1, pages 85-86).

IX. SCHEDULING

Kalaeloa Solar will submit a schedule of maintenance outages for the next five year period beginning with January of the following year in writing to Hawaiian Electric each year by June 30. See Section 5)(b) of the PPA. (Exhibit 1, pages 21-22). The schedule will state the estimated periods of operation, number of anticipated and scheduled shutdowns or reductions of output and the reasons, and the proposed dates and durations of scheduled maintenance, including the scope of work for the maintenance requiring shutdown or reduction in output of the Facility. Hawaiian Electric will review the maintenance schedule for the five year period and inform Kalaeloa Solar in writing no later than December 1 of the same year of Hawaiian Electric's concurrence or requested revisions. Kalaeloa Solar will revise its schedule for timing and duration of scheduled shutdowns and scheduled reductions of output of the Facility to accommodate Hawaiian Electric's revisions, unless such revisions would not be consistent with Good Engineering and Operating Practices, and make all reasonable efforts, consistent with

Good Engineering and Operating Practices, to accommodate any subsequent changes in such schedule reasonably requested by Hawaiian Electric if such changes are deemed necessary by Hawaiian Electric to meet its electrical system requirements.

X. FORECASTING

Forecasting the photovoltaic energy facility's output will be important to Hawaiian Electric's efforts to add substantial amounts of renewable electrical energy to its system as contemplated by the Hawaii Clean Energy Initiative. The forecasting provision in the PPA outlines a non-binding, good faith provision for yearly and daily forecasting requirements which Kalaeloa Solar must provide to Hawaiian Electric. See Section 6)(e) of the PPA. (Exhibit 1, page 23). For Hawaiian Electric's planning purposes, Kalaeloa Solar will, by December 1 of each year during the Term of the Agreement (except during the last year of the term), provide a forecast of each month's average-day energy production from the Facility, by hour, for the following calendar year. This forecast (i) will include an expected range of uncertainty based on historical operating experience, and (ii) will be updated on a monthly basis by notice given to Hawaiian Electric at least six Business Days before the first Business Day of each month. By 0900 Hawai'i Time on each Day immediately preceding a Day on which energy from the Facility is to be delivered, Kalaeloa Solar will provide Hawaiian Electric with an hourly forecast of deliveries for each hour of the next Day. Kalaeloa Solar will update a forecast any time information becomes available indicating a change in the forecast of generation of net output from the then current forecast; provided, however, that Kalaeloa Solar will not be required to update such forecasts more frequently than once per hour. In order to make Kalaeloa Solar's forecasts as accurate as possible, Kalaeloa Solar will install and maintain appropriate equipment for that purpose including but not limited to electronic or internet connections to appropriate

insolation instrumentation, measuring and recordation sites. See Section 6) of the PPA. (Exhibit 1, pages 22 to 23).

XI. OPERATING PROCEDURES

A. PERFORMANCE STANDARDS

1. Voltage regulation

Kalaeloa Solar must operate at a constant power factor at the Point of Interconnection. Hawaiian Electric's System Operator must be able to specify the power factor through Hawaiian Electric's SCADA/EMS, within the power factor range specified in Section 3.b.(1) of Appendix B, at which electric energy is to be delivered by Kalaeloa Solar to Hawaiian Electric and Kalaeloa Solar must deliver the electric energy at the Point of Interconnection at that specified power factor. See Section 3.a. of Appendix B to the PPA. (Exhibit 1, page 87).

2. Reactive Amount

Kalaeloa Solar will deliver electric energy to Hawaiian Electric at power factors ranging from 95% leading at the Point of Interconnection (Kalaeloa Solar receiving reactive power from Hawaiian Electric while delivering real power to Hawaiian Electric) to 95% lagging at the Point of Interconnection (Kalaeloa Solar delivering reactive power to Hawaiian Electric while delivering real power to Hawaiian Electric). Kalaeloa Solar will use Good Engineering and Operating Practices to take reasonable measures to provide reactive power if Kalaeloa Solar's Facility is operating at less than 20 percent of its Allowed Capacity. Hawaiian Electric will not be obligated to purchase reactive power from Kalaeloa Solar. Kalaeloa Solar's Facility will contain equipment able to continuously and actively control the output of reactive power, and to react to system fluctuations. If Kalaeloa Solar's Facility does not operate in accordance with Section 3.b.(1) of Appendix B, Hawaiian Electric may disconnect all or a part of Kalaeloa

Solar's Facility from Hawaiian Electric's System until Kalaeloa Solar corrects its operation (such as by installing capacitors at Kalaeloa Solar's expense). See Section 3.b. of Appendix B to the PPA. (Exhibit 1, pages 87-88).

3. Ramp Rate

Kalaeloa Solar will ensure that the ramp rates of Kalaeloa Solar's Facility are less than the following limits for all conditions including start up, normal operations, and shut down for the following periods, to the extent technically feasible using Good Engineering and Operating Practices.

- Maximum Ramp Rate Upward of 2.0 MW/minute for all periods except during Early Morning Low-Load Periods (typically Midnight to 4:00 am) where Maximum Ramp Rate Upward is 1 MW/minute.
- Maximum Ramp Rate Downward of 2.0 MW/minute for all periods except during Evening Periods (typically 4:00 pm to 8:00 pm) where Maximum Ramp Rate Downward is 1 MW/minute.

See Section 3.c. of Appendix B to the PPA. (Exhibit 1, page 88).

4. Power Fluctuation Rate

Kalaeloa Solar will ensure that the power fluctuation rate of Kalaeloa Solar's Facility is less than the following limit for all conditions including start up, normal operations, and shut down:

Instantaneous:	1 megawatt/2-second scan
Subminute Average:	an average of 0.3 megawatt/2-second scan for any 60-second period

In order for Kalaeloa Solar's Facility to conform to these specifications, it may be necessary for Hawaiian Electric to require that Kalaeloa Solar may start up only one generating unit at a time.

See Section 3.d. of Appendix B to the PPA. (Exhibit 1, pages 88-89).

5. Undervoltage Ride-Through

Either the undervoltage relays for Kalaeloa Solar's Facility will be set, or a compensation device external to a generator will be installed at Kalaeloa Solar's Facility, so that Kalaeloa Solar's Facility will meet the following undervoltage ride-through requirements during an undervoltage disturbance affecting one or more of the three voltage phases ("V" is the voltage of any three voltage phases at the Point of Interconnection):

$V \geq 0.80 \text{ pu}$ Kalaeloa Solar's Facility remains connected to Hawaiian Electric's System.

$0.10 \text{ pu} \leq V < 0.80 \text{ pu}$ Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if the voltage remains in this range for more than 2 seconds.

$0.00 \text{ pu} \leq V < 0.10 \text{ pu}$ Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if voltage remains in this range for more than 200 milliseconds.

Kalaeloa Solar must have sufficient capacity to fulfill the above mentioned requirements to ride-through the following sequences or combinations thereof:

- Normally cleared 138 kV transmission faults cleared after 5 cycles with one reclose attempt, cleared in 5 cycles, 30 cycles after the initial fault was cleared. The voltage at the point of interconnection will recover above the 0.80 p.u. level for the 30 cycles between the initial clearing time and the reclosing time.
- Normally cleared 46kV subtransmission faults cleared in 36 cycles with one reclose attempt, cleared in 36 cycles, 30 cycles after the initial fault was cleared. The voltage at the point of interconnection will recover above the 0.80 p.u. level for the 23 cycles between the initial clearing time and the reclosing time.

See Section 3.e. of Appendix B to the PPA. (Exhibit 1, pages 89-90).

6. Overvoltage ride-through

The overvoltage protection equipment at Kalaeloa Solar's Facility will be set so that Kalaeloa Solar's Facility will meet the following overvoltage ride-through requirements during an overvoltage disturbance affecting one or more of the three voltage phases ("V" is the voltage of any of the three voltage phases at the point of interconnection):

$1.00 \text{ pu} \leq V < 1.10 \text{ pu}$	Kalaeloa Solar's Facility remains connected to Hawaiian Electric's System.
$1.10 \text{ pu} \leq V < 1.15 \text{ pu}$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if voltage remains in this range for more than 3 seconds.
$1.15 \text{ pu} \leq V$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if voltage remains in this range for more time than allowed by equipment manufacturer's specifications.

See Section 3.f. of Appendix B to the PPA. (Exhibit 1, page 90).

7. Fault Ride Through

For transmission and sub-transmission faults, if voltage dips at the Point of Interconnection stay within the limits of the under voltage ride-through requirements in Section 3.e. (Undervoltage Ride Through) of Appendix B, upon clearing of the fault, Kalaeloa Solar will as soon as practical, but no longer than 1 second after the voltage recovers to 0.80 p.u., provide at least 90% of the active and reactive power output at the Point of Interconnection immediately before the fault within the parameters of available solar insolation without regard to the ramp rate limits specified in Section 3.e above. This does not apply if Kalaeloa Solar's Facility was operating at less than 5% of its rated MW capacity. See Section 3.h. of Appendix B to the PPA. (Exhibit 1, pages 90-91).

8. Underfrequency ride-through

The underfrequency relays for Kalaeloa Solar's Facility will be set so that Kalaeloa Solar's Facility will meet the following underfrequency ride-through requirements during an underfrequency disturbance ("f" is Hawaiian Electric's System frequency at the Point of Interconnection):

$f \geq 57.0 \text{ Hz}$	Kalaeloa Solar's Facility remains connected to Hawaiian Electric's System.
$56.0 \text{ Hz} \leq f < 57.0 \text{ Hz}$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if frequency remains in this range for more than 6 seconds.
$f < 56.0 \text{ Hz}$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System immediately.

See Section 3.i. of Appendix B to the PPA. (Exhibit 1, page 91).

9. Overfrequency ride-through

The overfrequency relays for Kalaeloa Solar's Facility will be set so that Kalaeloa Solar's Facility will meet the following overfrequency ride-through requirements during an overfrequency disturbance ("f" is Hawaiian Electric's System frequency at the Point of Interconnection):

$f \leq 61.5 \text{ Hz}$	Kalaeloa Solar's Facility remains connected to Hawaiian Electric's System.
$61.5 \text{ Hz} < f \leq 63.0 \text{ Hz}$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System if frequency remains in this range for more than 6 seconds.
$f > 63.0 \text{ Hz}$	Kalaeloa Solar's Facility may initiate disconnection from Hawaiian Electric's System immediately.

See Section 3.j. of Appendix B to the PPA. (Exhibit 1, pages 91-92).

10. Voltage Flicker

Any voltage flicker at the Point of Interconnection caused by Kalaeloa Solar's Facility will not exceed the limits defined by the "Borderline of Visibility Curve" identified in IEEE Standard 519-1992, or latest version "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems." See Section 3.k. of Appendix B to the PPA. (Exhibit 1, page 92).

11. Harmonics

Harmonic distortion at the Point of Interconnection caused by Kalaeloa Solar's Facility will not exceed the limits stated in the following:

- IEEE Standard 519-1992 ("IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems")
- IEEE 1547-2008 ("IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems")
- Latest version of either of these documents.

Kalaeloa Solar will be responsible for the installation of any necessary controls or hardware to limit the voltage and current harmonics generated from Kalaeloa Solar's Facility to defined levels. See Section 3.l. of Appendix B to the PPA. (Exhibit 1, page 92).

12. Transient Overvoltages

The IRS showed that unacceptable overvoltage conditions initiated by Kalaeloa Solar's Facility could occur following a breaker trip at Hawaiian Electric's Kahe substation. Within 3 months of the PUC Submittal Date, Kalaeloa Solar will provide to Hawaiian Electric data verifying the magnitude and duration of these overvoltages and confirming that Hawaiian Electric's existing lightning arresters are adequately rated to withstand the expected overvoltages based on the arrester's temporary over voltage curves. Kalaeloa Solar will demonstrate during

the Acceptance Test that the overvoltage performance of Kalaeloa Solar's Facility is reasonably consistent with the data provided by Kalaeloa Solar so that Hawaiian Electric's existing lightning arresters will be able to withstand the expected overvoltages. Hawaiian Electric and Kalaeloa Solar will agree on a written protocol setting out the detailed overvoltage test procedure and criteria for passing the Acceptance Test. Kalaeloa Solar must timely correct any deficiencies identified during the Acceptance Test. See Section 3.n. of Appendix B to the PPA. (Exhibit 1, pages 92-93).

B. REVISIONS TO PERFORMANCE STANDARDS

Section 23) of the PPA contains an agreed-upon process for addressing revisions to Performance Standards (see contract definitions section to the PPA) during the Term of the PPA. The process is intended to address necessary revisions to the Performance Standards to enhance integration of intermittent resources into Hawaiian Electric's System, or to comply with future laws and regulations which may be driven in part by higher integration of intermittent resources, and is not intended for either party to provide a means for renegotiating any other terms of the PPA or to materially increase Kalaeloa Solar's risk of non-performance or default. See Section 23)(i) of the PPA. (Exhibit 1, page 47).

C. OPERATIONS AND MAINTENANCE

Each party has agreed to install, operate and maintain its respective equipment and facility and to perform all obligations required to be performed by the respective party under the PPA in accordance with Good Engineering and Operating Practices in the electric industry, considering Hawaiian Electric's isolated island setting, and applicable laws, rules, orders and tariffs. See Section 25)(a) of the PPA. (Exhibit 1, page 52). Kalaeloa Solar is also required to keep logs for information on unit availability including reasons for planned and Forced Outages,

circuit breaker trip operations, relay operations, including target initiation and other unusual events. Hawaiian Electric has the right to review these logs, especially when analyzing system disturbances. Kalaeloa Solar is required to maintain these records for a period of not less than thirty-six (36) months. See Section 2.c. of Appendix B to the PPA. (Exhibit 1, page 85).

D. SYSTEM PROTECTION

Among other requirements set forth herein and in the PPA, Hawaiian Electric has the right, but not the obligation, to specify the type of electrical equipment, the interconnection wiring, and the type of protective relaying equipment, including, but not limited to, the control circuits connected to it and the disconnecting devices, and the settings that affect the reliability and safety of operation of Hawaiian Electric's and Kalaeloa Solar's interconnected system. See Section 1.c. of Appendix B to the PPA. (Exhibit 1, pages 81-82).

E. MAINTENANCE OF KALAELOA SOLAR'S INTERCONNECTION FACILITIES

1. Kalaeloa Solar is required to address any “Disconnection” according to the requirements of Appendix B, Section 4 of the PPA. For this purpose, a “Disconnection” is a disconnection from Hawaiian Electric’s System of at least 1.7 MW from the Facility over a “rolling 120-second period”, if such disconnection is due to a defect in or a failure of Kalaeloa Solar-owned Interconnection Facilities. A “rolling 120-second period” means a period that is comprised of 120 seconds and such rolling period will change as each new one (1) second elapses. See Section 4.a. of Appendix B to the PPA. (Exhibit 1, page 93).

2. For every disconnection from Hawaiian Electric’s System of 1.7 MW or more over a rolling 120-second period (“Disconnection Event”), Kalaeloa Solar will investigate the cause of the Disconnection Event, and determine if it is a Disconnection as defined in Appendix B, Section 4.a. Within three (3) Business Days of the Disconnection Event, Kalaeloa Solar will

provide, in writing to Hawaiian Electric, an incident report that summarizes the sequence of events and probable cause of the Disconnection Event, and stating whether Kalaeloa Solar believes the Disconnection Event is a disconnection. See Section 4.b. of Appendix B to the PPA. (Exhibit 1, page 93).

3. Within forty-five (45) Days of a Disconnection, Kalaeloa Solar will provide, in writing to Hawaiian Electric, Kalaeloa Solar's findings, data relied upon for such findings, and proposed actions to prevent reoccurrence of a Disconnection ("Proposed Actions"). Hawaiian Electric may assist Kalaeloa Solar in determining the causes of and recommendations to remedy or prevent a Disconnection ("Hawaiian Electric's Recommendations"). Kalaeloa Solar will implement such Proposed Actions (as modified to incorporate Hawaiian Electric's Recommendations, if any) and Hawaiian Electric's Recommendations (if any) in accordance with the time period agreed to by the parties. See Section 4.c. of Appendix B to the PPA. (Exhibit 1, pages 93-94).

4. In the event Kalaeloa Solar and Hawaiian Electric disagree as to whether a Disconnection Event occurred, the sequence of events and/or probable cause of the Disconnection Event, whether the Disconnection Event is a Disconnection, the Proposed Actions, Hawaiian Electric's Recommendations, and/or the time period to implement the Proposed Actions and/or Hawaiian Electric's Recommendations, then the parties will follow the procedure set forth in Appendix B, Section 5 of the PPA. See Section 4.d. of Appendix B to the PPA. (Exhibit 1, page 94).

5. If after following the procedures set forth in Appendix B, Section 4, Kalaeloa Solar and Hawaiian Electric continue to have a disagreement as to the probable cause of the Disconnection, the Proposed Actions, Hawaiian Electric's Recommendations, and/or the time

period to implement the Proposed Actions and/or Hawaiian Electric's Recommendations, then the parties will commission a study to be performed by a qualified independent Third-Party consultant ("Qualified Consultant") chosen from the Qualified Independent Third-Party Consultants List ("Consultants List") attached to the PPA as Appendix B-2. Such study will review the design of, review the operating and maintenance procedures dealing with, recommend modifications to, and determine the type of maintenance that should be performed on Kalaeloa Solar's Interconnection Facilities ("Study"). Kalaeloa Solar and Hawaiian Electric will each pay for one-half of the total cost of the Study. The Study will be completed within ninety (90) Days from initiation of such Study, unless otherwise agreed to in writing by Kalaeloa Solar and Hawaiian Electric. The Qualified Consultant will send the Study to Hawaiian Electric and Kalaeloa Solar. Kalaeloa Solar (and/or its Third-Party consultants and contractors), at Kalaeloa Solar's expense, will change the design of, change the operating and maintenance procedures dealing with, implement modifications to, and/or perform the maintenance on Kalaeloa Solar's Interconnection Facilities recommended by the Study. Such design changes, operating and maintenance procedure changes, modifications, and/or maintenance will be completed no later than forty-five (45) Days from the Day the completed Study is issued by the Qualified Consultant, unless otherwise agreed to in writing by Hawaiian Electric. In the event the time requirement for the commissioning of the Study, completion of the Study, or (iii) completion of the design change, operating and maintenance procedure change, modifications, and/or maintenance recommended by the Study is not achieved, Hawaiian Electric may limit the total Allowed Capacity to a level that maintains reliable operations in accordance with Good Engineering and Operating Practices. Nothing in this provision affects Hawaiian Electric's right to curtail the Facility as provided for in the PPA. See Section 4.e. of Appendix B to the PPA.

(Exhibit 1, pages 94-95).

XII. FINANCIAL COMPLIANCE AND OTHER FINANCIAL IMPACTS

Section 24 of the PPA requires, among other things, that Kalaeloa Solar provide or cause to be provided to Hawaiian Electric on a timely basis, as reasonably determined by Hawaiian Electric, all information, including but not limited to information that may be obtained in any audit referred to below (the “Information”), reasonably requested by Hawaiian Electric for purposes of permitting Hawaiian Electric and Hawaiian Electric Industries, Inc. (“HEI”) to comply with the initial and on-going requirements of (i) identifying variable interest entities (“VIE”) and determining primary beneficiaries under the accounting principles of Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 810,¹⁰ Consolidation, (ii) Section 404 of the Sarbanes-Oxley Act of 2002 (“SOX 404”) and (iii) all clarifications, interpretations and revisions of and regulations implementing FASB ASC 810 and SOX 404 issued by the FASB, Securities and Exchange Commission, the Public Company Accounting Oversight Board, Emerging Issues Task Force or other governing agencies.¹¹

Section 24 of the PPA also requires Kalaeloa Solar to provide information so that Hawaiian Electric and/or HEI meet their financial reporting requirements as follows:

- Kalaeloa Solar shall allow Hawaiian Electric and/or HEI or its independent auditor (if required) access to Kalaeloa Solar documents and records, including its system of internal controls over financial reporting, to meet the compliance requirements.

¹⁰ Formerly FASB interpretation No. 46, "Consolidation of Variable Interest Entities" and FASB Statement of Financial Accounting Standards No. 167, "Amendments to FASB Interpretation No. 46R." Effective July 1, 2009, all various U.S. Generally Accepted Accounting Principles issued by FASB, American Institute of Certified Public Accountants, EITF, etc. (with the exception of the SEC) have been codified into a single source of authoritative guidance. For the purposes of this Application, included is the new codification reference as well as the original standard reference for ease of review. See “Summary of Interpretation No. 46 (revised December 2003)” filed in Docket No. 04-0113, HECO’s 2005 test year rate case, HECO-2114 for additional information on this accounting guidance.

¹¹ See Section 24 of the PPA. (Exhibit 1, pages 49-52).

- Kalaeloa Solar agrees to provide this information only for the purposes defined in Section 24 of the PPA.
- Provisions are also made to limit public disclosure of the information, to the extent reasonably possible, as provided in Section 24 of the PPA. If Hawaiian Electric and/or HEI become legally compelled to provide certain information, Hawaiian Electric and/or HEI will undertake reasonable efforts to provide prompt notice of such disclosure to Kalaeloa Solar.¹²

A. CONSOLIDATION ACCOUNTING

FASB ASC 810 addresses VIE and primary beneficiaries (entities that consolidate VIEs). FASB ASC 810 could potentially require that the purchaser under a power purchase agreement or contract, such as Hawaiian Electric, consolidate the seller, such as Kalaeloa Solar. If the PPA were determined to constitute a variable interest in Kalaeloa Solar and Hawaiian Electric to be the primary beneficiary, then Hawaiian Electric would be required to consolidate Kalaeloa Solar onto its financial statements. Consolidating Kalaeloa Solar onto its financial statements would have uncertain impacts on the assessments of investors and/or credit rating agencies on the risks associated with the PPA and Hawaiian Electric's creditworthiness. In addition, if Hawaiian Electric must consolidate Kalaeloa Solar in its financial statements, Hawaiian Electric management must also assess the adequacy of its internal controls over financial reporting in order to comply with SOX 404.

A preliminary evaluation of the PPA was performed and based on the information currently available to Hawaiian Electric and representations made by Kalaeloa Solar, it appears consolidation under FASB ASC 810 is not required at this time. However, Hawaiian Electric

¹² See Section 24 of the PPA. (Exhibit 1, pages 49-52).

will continuously reassess its evaluation on an on-going basis. In addition, Hawaiian Electric will monitor the status of Kalaeloa Solar and of this PPA for any significant changes and will revisit this evaluation on a periodic basis thereafter.

LEASE ACCOUNTING

FASB ASC 840¹³ specifies tests to be applied to an arrangement (in this case, the PPA) to determine whether or not the arrangement contains a lease and specifies the circumstances under which an arrangement should be evaluated to determine whether or not it contains a lease.

If the PPA were deemed a lease, it would need to be classified as either an operating or capital lease. If it were deemed an operating lease, Hawaiian Electric would account for payments as expenses and Kalaeloa Solar would report the investment in assets, related depreciation expense and lease revenue. While there is no recorded liability for the long-term lease expense payments, credit rating agencies would reflect these obligations as imputed debt in the financial ratios used to evaluate Hawaiian Electric's risk profile. See further discussion of imputed debt below. If the PPA were deemed a capital lease, Hawaiian Electric would report an investment in asset, related depreciation expense, a capital lease obligation and related interest expense.

A preliminary evaluation of the PPA was performed under FASB ASC 840, and it appears that the PPA does contain a lease and should be classified as an operating lease. FASB ASC 840 also specifies certain conditions under which Hawaiian Electric must re-assess whether lease accounting treatment is required. Hawaiian Electric will re-perform this analysis if and when Commission approval is received for this PPA, and thereafter, if necessary.

¹³ As described in footnote10, above, accounting principles have been codified into a single source of authoritative guidance effective July 1, 2009. Therefore, the guidance in EITF 01-8 is now codified in FASB ASC 840. See further explanation of EITF 01-8 in "Lease Arrangements Have Broadened" filed in Docket No. 04-0113 (i.e., Hawaiian Electric's 2005 test year rate case, HECO-2113).

C. IMPACT OF IMPUTED DEBT ON CREDIT QUALITY

The payments Hawaiian Electric is to make under the PPA are for energy purchases only. Standard & Poor's ("S&P"), on May 7, 2007, published an article titled "Standard & Poor's Methodology For Imputing Debt For U.S. Utilities' Power Purchase Agreements". In this article, S&P described that for PPAs with energy purchases only, they consider "an implied capacity price that funds the recovery of the supplier's capital investment to be subsumed within the all-in energy price." S&P determines an implied capacity payment for the PPAs in order to calculate imputed debt.¹⁴

Hawaiian Electric prepared estimates of the imputed debt and rebalancing costs based on S&P's methodology as described. Imputed debt at inception is estimated to be approximately \$602,000, with annual rebalancing costs estimated at about \$49,000. The balance of imputed debt and related rebalancing costs will level off after the eighth year of the contract, primarily due to the evergreen effect applied in S&P's methodology.¹⁵

XIII. OTHER PPA TERMS AND CONDITIONS

A. EVENTS OF DEFAULT AND TERMINATION

1. Upon the occurrence of an "Event of Default" with respect to Kalaeloa Solar, Hawaiian Electric has the right to terminate the PPA by written notice to Kalaeloa Solar,

¹⁴ "The pricing for some PPA contracts is stated as a single, all-in energy price. Standard & Poor's considers an implied capacity price that funds the recovery of the supplier's capital investment to be subsumed within the all-in energy price. Consequently, we use a proxy capacity charge, stated in \$/kW, to calculate an implied capacity payment associated with the PPA. The \$/kW figure is multiplied by the number of kilowatts under contract.

"We derive the proxy cost of capacity using empirical data evidencing the cost of developing new peaking capacity. We will reflect regional differences in its analysis. The cost of new capacity is translated into a \$/kW figure using a weighted average cost of capital and a proxy capital recovery period. This number will be updated from time to time to reflect prevailing costs for the development and financing of the marginal unit, a combustion turbine."

¹⁵ In order to minimize the potential distortion caused by short-term and intermediate term contracts in the analysis of the net present value of the fixed obligations of a utility with a portfolio of PPAs made up of longer-term commitments, S&P extends out shorter-term contracts to a common length of 12 years ("evergreen treatment"). The price for the capacity added by this evergreen treatment is the estimated cost of developing new peaking capacity.

withhold any payments, suspend performance, and exercise any other right or remedy available at law or in equity to the extent permitted under the PPA. See Section 15)(c) of the PPA. (Exhibit 1, page 37). As set forth in Section 15)(b) of the PPA, an Event of Default means, with respect to Kalaeloa Solar as the defaulting party, Kalaeloa Solar's: (i) delivery or attempt to deliver to the Point of Interconnection for sale under this PPA energy that was not generated by the Facility; (ii) failure by Kalaeloa Solar to deliver at least sixty (60) percent of the initial Annual Contract Energy for a period of three (3) consecutive Contract Years; (iii) failure by Kalaeloa Solar to meet the Guaranteed Commercial Operation Date after the cure period set forth in the PPA pursuant to Section 13)(e); (iv) failure to satisfy the Credit Assurance and Security requirements agreed to pursuant to Section 14) of the PPA; (v) subject to applicable cure periods, if any, failure to install, operate, maintain, or repair the Facility in accordance with Good Engineering and Operating Practices, considering Hawaiian Electric's isolated island setting; (vi) failure to provide energy to Hawaiian Electric for a period of three hundred sixty-five (365) or more consecutive Days; or (vii) Kalaeloa Solar materially breaches or defaults on any material covenant, condition or other provision of the PPA and fails to cure such breach or default pursuant to the PPA. See Section 15)(b) of the PPA. (Exhibit 1, pages 36-37).

2. Upon the occurrence of an "Event of Default" with respect to a defaulting party, the non-defaulting party has the right to terminate the PPA, withhold any payments due to the defaulting party, suspend performance, and exercise any other right or remedy available at law or in equity to the extent permitted under the PPA. An Event of Default means, with respect to the defaulting party: (i) failure to make any payments required under and pursuant to the terms of the PPA; (ii) making any false or misleading representation or warranty; (iii) bankruptcy; (iv) consolidating, amalgamating, merging or transferring all or substantially all assets but not the

obligations of the transferor; or (v) in the case of Hawaiian Electric, material breach of or default on any material covenant, condition or provision of the PPA and failure to cure such breach or default under the PPA.

B. TERMINATION DAMAGES

Hawaiian Electric will also have the right to collect Termination Damages for an Event of Default. If the PPA is terminated by Hawaiian Electric where Kalaeloa Solar is the defaulting party before the Commercial Operations Date, Termination Damages will be calculated by multiplying the Allowed Capacity by \$30 per kW in accordance with Section 16) of the PPA . If the PPA is terminated by Hawaiian Electric where Kalaeloa Solar is the defaulting party after the Commercial Operations Date, Termination Damages will be calculated by multiplying the Allowed Capacity by \$40 per kW in accordance with Section 16) of the PPA . (Exhibit 1, pages 37-38). The Parties have agreed that the damages Hawaiian Electric would incur due to early termination would be difficult or impossible to predict with certainty and that the specified Termination Damages are an appropriate approximation of such damages. See Section 16)(c) of the PPA. (Exhibit 1, page 38).

C. DEVELOPMENT SECURITY AND OPERATING PERIOD SECURITY

1. To guarantee its undertaking to meet the Guaranteed Commercial Operations Date, Kalaeloa Solar has agreed to provide Development Period Security in an amount of \$30/kW based on the original Contract Capacity. When the Commercial Operations Date has been achieved, the Development Period Security minus an amount, if any, for Daily Delay Damages that is due and owing to Hawaiian Electric, will be converted to Operating Period Security. See Section 14)(b) of the PPA. (Exhibit 1, page 32).

2. To guarantee its performance of Kalaeloa Solar's obligations under the PPA from

the Commercial Operations Date to the expiration or termination of the PPA, Kalaeloa Solar has agreed to provide Operating Period Security to Hawaiian Electric in the amount of \$40/kW based on the original Allowed Capacity within five (5) Days of the Commercial Operations Date. See Section 14)(d) of the PPA. (Exhibit 1, page 32).

D. CONSTRUCTION MILESTONES AND PROJECT MILESTONES

Section 13)(g) of the PPA provides for monthly progress reports to be provided by Kalaeloa Solar to Hawaiian Electric commencing on the Effective Date of the PPA. These reports notify Hawaiian Electric of the status of each Construction Milestone and include a list of documentation to any Governmental Authority and other documents reasonably requested by Hawaiian Electric. Kalaeloa Solar must also advise Hawaiian Electric of any problems or issues of which it is aware that may materially impact its ability to meet Construction Milestones. See Section 13)(g) of the PPA and Appendix H to the PPA. (Exhibit 1, pages 31 and pages 124-135, respectively).

E. COMMERCIAL OPERATION

Hawaiian Electric will notify Kalaeloa Solar when the Facility has achieved the Commercial Operation Date. This notification is contingent upon Kalaeloa Solar providing evidence reasonably acceptable to Hawaiian Electric of the satisfaction or occurrence of all of the conditions set forth in Section 11) and Appendices E (Guaranteed Project Milestones) and F (Reporting Milestones of the PPA). Subject to the conditions as provided for in the PPA, the Facility must be fully capable of producing renewable energy under the PPA and delivering renewable energy to the Point of Interconnection no later than the Commercial Operation Date specified in Appendix E of the PPA. See Section 13) of the PPA, and Appendix E and Appendix F to the PPA (Exhibit 1, pages 29-31, page 119, and pages 120-121, respectively).

F. ENVIRONMENTAL CREDITS

To the extent not prohibited by law, any “Environmental Credit” (see contract definitions section to the PPA) is the property of Hawaiian Electric, provided that Environmental Credits are to the benefit of Hawaiian Electric’s ratepayers in that the value will be credited “above the line.” The PPA requires Kalaeloa Solar to use all reasonable efforts to ensure that the Environmental Credits are vested in Hawaiian Electric pursuant to the requirements of the PPA. See Sections 2)(a) and 30)(p) of the PPA. (Exhibit 1, pages 17 and 60-61, respectively).

G. INDEMNIFICATION AND INSURANCE

Provisions with respect to Kalaeloa Solar’s indemnification of Hawaiian Electric and Hawaiian Electric’s indemnification of Kalaeloa Solar are addressed in Section 17) of the PPA. (Exhibit 1, pages 38-39). With respect to insurance, Section 18) of the PPA requires Kalaeloa Solar to, among other things, maintain both commercial general liability insurance with a bodily injury and property damage combined single limit of at least \$2,000,000 for any occurrence. Both insurance coverages are required to include contractual liability coverage for written contracts and agreements including the PPA, name Hawaiian Electric as an additional insured, and are required to be non-cancelable and non-alterable without 30 days prior written notice to Hawaiian Electric. (Exhibit 1, pages 39-40).

H. ASSIGNMENT

The PPA may not be assigned by either Hawaiian Electric or Kalaeloa Solar without the prior written consent of the other party (such consent not to be unreasonably withheld, conditioned, or delayed); provided that Kalaeloa Solar can, for the purposes of arranging or rearranging debt and/or equity financing for Kalaeloa Solar’s Facility, assign all or any part of its rights or benefits, but not its obligations, to any lender providing debt financing for Kalaeloa

Solar's Facility without obtaining Hawaiian Electric's prior consent. See Section 19) of the PPA. (Exhibit 1, page 40).

I. SALE OF ENERGY TO THIRD PARTIES

Kalaeloa Solar is prohibited from selling energy from the Facility to any "Third Party". The term "Third-Party" includes subsidiaries or affiliates of Kalaeloa Solar. See Section 20) of the PPA. (Exhibit 1, page 40).

J. PATENTS

Each party to the PPA has agreed that in fulfilling its respective responsibilities under the PPA, it will not use any process, program, design, device or material that infringes on any United States patent. Each party has also agreed to indemnify, defend and hold harmless the other party from and against all losses, damages, claims, fees and costs, including but not limited to reasonable attorneys' fees and costs, arising from or incidental to any suit or proceeding brought against the other party for patent infringement arising out of such party's performance under the PPA, including but not limited to patent infringement due to the use of technical features of the Facility to meet the "Performance Standards" specified in Section 3 of Appendix B of the PPA. See Section 30)(s) of the PPA. (Exhibit 1, page 61).

K. LIMITATION OF LIABILITY

Neither Kalaeloa Solar nor Hawaiian Electric will be liable to the other party for any indirect, consequential, incidental, or punitive damages; provided, however, this limitation on damages does not apply to a party's indemnification obligations, claims arising from or related to breaches of confidentiality obligations, or claims arising from or related to gross negligence or willful misconduct of a party. See Section 29) of the PPA. (Exhibit 1, page 57).

XIV. COMMISSION APPROVAL

A. HAR § 6-60-6

Commission approval is sought pursuant to HAR § 6-60-6 of the Commission's Rules Establishing Standards for Electric and Gas Utility Service in the State of Hawaii. HAR § 6-60-6(2) provides that:

No changes in fuel and purchased energy costs may be included in the fuel adjustment clause unless the contracts or prices for the purchase of such fuel or energy have been previously approved or filed with the [C]ommission.

B. HAWAII REVISED STATUTES § 269-27.6(a) – 46kV TRANSMISSION LINES

1. A Commission determination is requested for the installation of 46kV transmission lines above the surface of the ground, pursuant to HRS § 269-27.6(a). As noted in Appendix C of the PPA, Hawaiian Electric will construct, own, operate and maintain all Interconnection Facilities required to interconnect its system with the Facility at 46 kV, up to the Point of Interconnection which includes, among other things, the placement of a 46 kV overhead line extension estimated at approximately \$600,000. See Sections 1.(b) and 2 of Appendix C to the PPA. (Exhibit 1, pages 107-109 and 109-112, respectively); see also Exhibit 9 (Map and Description of the 46 kV Transmission Line Work).

HRS § 269-27.6(a) provides that:

Notwithstanding any law to the contrary, whenever a public utility applies to the public utilities commission for approval to place, construct, erect, or otherwise build a new 46 kilovolt or greater high-voltage electric transmission system, either above or below the surface of the ground, the public utilities commission shall determine whether the electric transmission system shall be placed, constructed, erected, or built above or below the surface of the ground; provided that in its determination, the public utilities commission shall consider:

- (1) Whether a benefit exists that outweighs the costs of placing the electric transmission system underground;
- (2) Whether there is a governmental public policy requiring the electric

transmission system to be placed, constructed, erected, or built underground, and the governmental agency establishing the policy commits funds for the additional costs of undergrounding;

(3) Whether any governmental agency or other parties are willing to pay for the additional costs of undergrounding;

(4) The recommendation of the [D]ivision of [C]onsumer [A]dvocacy of the [D]epartment of [C]ommerce and [C]onsumer affairs, which shall be based on an evaluation of the factors set forth under this subsection; and

(5) Any other relevant factors.

As a result, Hawaiian Electric requests a Commission determination that the installation of a 46 kV transmission line above the surface of the ground satisfies the requirements of HRS § 269-27.6(a).

2. The scope of this portion of the Project consists of extending the existing Hawaiian Electric Kahe-Standard Oil No. 2 46 kV line, i.e. overhead (approximately 2,250 circuit feet) from Roosevelt Road to Kalaeloa Solar's Facility substation located south of Boxer Road. The cost includes the installation of new overhead poles, conductors, and a 46 kV lockable, group operated, manual, pole mounted switch. The work consists of: 1) the installation of three (3) 70 foot steel poles and six (6) 65 foot wood poles; 2) the installation of approximately 2,250 circuit feet of 556 AAC 46 kV conductors; and 3) the installation of a 46 kV lockable, group operated, manual, pole mounted switch. See Section 1.(b) of Appendix C to the PPA. (Exhibit 1, page 107). See, Section 2.(a)(3) of Appendix C to the PPA. (Exhibit 1, pages 109-111). Exhibit 9 attached to this Application provides a map and further description of the 46kV transmission line work.

3. The requirements of HRS § 269-27.6(a) are satisfied by this project. With respect to the overhead transmission line extension, the visual impact will not be materially impacted as there are already existing 46 kV, 12 kV, and secondary overhead lines in the area. (See Exhibit

9, pages 3-5.) The benefits, if any, of placing this portion of the 46 kV line underground do not outweigh the costs. Hawaiian Electric estimates that it would cost approximately four (4) times more to underground this portion of the line than to construct it overhead. This is based on an estimated cost of \$2,228,331 for the underground alternative versus the \$599,434 estimated overhead cost. (See Exhibit 9, pages 6 and 7.) Hawaiian Electric understands that the Hawaii Community Development Authority (“HCDA”) may be contemplating draft rules for undergrounding certain utility transmission facilities if they are located in the Kalaeloa development district. In the event that draft rules are finalized and promulgated to consider undergrounding, and if the transmission line falls within the development district, Hawaiian Electric will work with HCDA towards installation of the overhead transmission line pursuant to such HCDA processes as an exemption or waiver. Hawaiian Electric is unaware of any governmental public policy that currently requires the undergrounding of this portion of the line, and no governmental agency or other party has indicated any willingness to pay for the additional costs of undergrounding the line at its expense. Finally, Hawaiian Electric is not aware of any other “relevant factors” that would apply to undergrounding the line.

4. Kalaeloa Solar has represented to Hawaiian Electric that the additional cost to underground the 46kV line to connect Hawaiian Electric’s system with Kalaeloa Solar’s Facility would make the project not viable economically, and has begun discussions with the real estate developer of the area for an overhead line.

C. HAWAII REVISED STATUTES § 269-27.5 – PUBLIC HEARING

The Project involves the construction of a 46kV overhead transmission line. A public hearing pursuant to HRS § 269-27.5 is not required because there are no existing homes near the Project site, and as such the proposed transmission line does not run through a residential area.

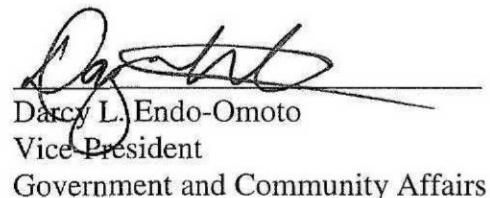
The land is used and zoned "F-1, Military-Federal". The existing homes closest to the proposed overhead 46kV transmission lines are located approximately 3,500 feet away at Barber's Point Housing; the 46 kV line extension will not be visible from these areas due to the distance and terrain.

CONCLUSION

WHEREFORE, Hawaiian Electric requests that this Honorable Commission:

- 1) Approve the Power Purchase Agreement for As-Available Energy dated February 18, 2011 by and between Hawaiian Electric and Kalaeloa Solar Two, LLC;
- 2) Authorize Hawaiian Electric to include the purchased energy charges (and related revenue taxes) that Hawaiian Electric incurs under the PPA in and through Hawaiian Electric's ECAC to the extent not included in base rates for the term of the PPA;
- 3) Find that the purchased energy charges to be paid by Hawaiian Electric are reasonable;
- 4) Find that Hawaiian Electric's purchased power arrangements under the PPA, pursuant to which Hawaiian Electric purchases energy on an as-available basis from Kalaeloa Solar, are prudent and in the public interest;
- 5) Determine that the 46 kV line extension included as part of Hawaiian Electric-owned Interconnection Facilities, as described herein, should be constructed above the surface of the ground pursuant to HRS § 269-27.6(a); and
- 6) Grant such other and further relief as may be just and reasonable in the premises.

DATED: Honolulu, Hawai'i, March 9, 2011.



Darcy L. Endo-Omoto
Vice President
Government and Community Affairs

VERIFICATION

STATE OF HAWAII)
)
CITY AND COUNTY OF HONOLULU) SS:
)

DARCY L. ENDO-OMOTO, being first duly sworn, deposes and says: That she is the Vice President – Government and Community Affairs of Hawaiian Electric Company, Inc., the within-named Applicant in the above proceeding; that she makes this verification for and on behalf of Applicant and is authorized so to do; that she has read the foregoing Application, and knows the contents thereof; and that the same is true.



DARCY L. ENDO-OMOTO

This one (1) page Verification to the Application of Hawaiian Electric Company, Inc., dated March 9, 2011, was subscribed and sworn to before me on March 9, 2011 in the First Circuit, State of Hawai`i by Darcy L. Endo-Omoto.



Deborah Ichishita
Print Name: DEBORAH ICHISHITA
Notary Public, State of Hawai`i
My Commission Expires: July 18, 2012



EXHIBIT INDEX

<u>EXHIBIT</u>	<u>DESCRIPTION</u>
1	Power Purchase Agreement for As-Available Energy between Hawaiian Electric Company, Inc. and Kalaeloa Solar Two, LLC dated February 18, 2011
2	Description of Kalaeloa Solar Two, LLC Affiliates and Subsidiaries
3	New Energy Opportunities, Inc. (“NEO”), “Report of the Independent Observer on Hawaiian Electric Company’s Bid Evaluation and Short List Selection Process—Renewable Energy RFP,” Docket No. 2007-0331 (Jan. 23, 2009) (Publicly Available Copy-Redacted by NEO Subject to Protective Order No. 23875 dated Dec. 6, 2007, Docket No. 2007-0331)
4	New Energy Opportunities, Inc., “Report of the Independent Observer on Hawaiian Electric Company’s Selection of the Final Award Group—Renewable Energy RFP,” Docket No. 2007-0331 (Nov. 13, 2009) (Publicly Available Copy-Redacted by NEO Subject to Protective Order No. 23875 dated Dec. 6, 2007, Docket No. 2007-0331)
5	Map Depicting the Location of Seller’s Facility
6	Interconnection Requirements Study (“IRS”) Letter Agreement dated March 13, 2009 (Confidential and Subject to Protective Order)*
7	Interconnection Requirements Study dated July 2, 2010 (Confidential and Subject to Protective Order)*
8	Pricing Structure and Negotiations Support (Redacted Copy)**
9	Map and Description of 46kV Transmission Line Work

* This Exhibit is not attached hereto but will be provided to the Commission pursuant to protective order because (i) certain information is proprietary to persons other than Hawaiian Electric and/or (ii) certain information is confidential and proprietary to Hawaiian Electric and disclosure of this information could disadvantage Hawaiian Electric in its negotiations for as-available energy.

** A redacted version of this Exhibit is attached hereto. The redacted provisions contain confidential and proprietary information. An unredacted copy of the affected pages will be provided to the Commission pursuant to protective order because (i) certain information is proprietary to persons other than Hawaiian Electric and (ii) certain provisions such as negotiating positions, proposals, strategies, and/or technical and financial information are confidential and proprietary to Hawaiian Electric and disclosure of this information could disadvantage Hawaiian Electric in its on-going negotiations for as-available renewable energy.

EXHIBIT 1

**Power Purchase Agreement for
As-Available Energy between
Hawaiian Electric Company, Inc.
and Kalaeloa Solar Two, LLC
dated February 18, 2011**



*Power Purchase Agreement
For
As-Available Renewable Energy*

Kalaeloa Solar Two, LLC

Dated: February 18, 2011

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APPENDIX A	Description of Seller's Facility
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EXHIBIT B-1	Single Line Drawing
EXHIBIT B-2	Relay List and Trip Scheme
APPENDIX B-1	Methods and Formulas for Measuring Performance Standards
APPENDIX B-2	Consultants List
APPENDIX B-3	Form of Curtailment Report

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APPENDIX C	Interconnection Facilities Owned by the Company
APPENDIX D	Energy Purchases by the Company
APPENDIX E	Guaranteed Project Milestone
APPENDIX F	Reporting Milestones
APPENDIX G	Form of Letter of Credit
APPENDIX H	Form of Monthly Progress Report

POWER PURCHASE AGREEMENT FOR AS-AVAILABLE ENERGY

THIS POWER PURCHASE AGREEMENT FOR AS-AVAILABLE ENERGY ("Agreement") is made this 18th day of February, 2011 (the "Effective Date"), by and between Hawaiian Electric Company, Inc. (hereinafter called the "Company") and Kalaeloa Solar Two, LLC (hereinafter called the "Seller").

WHEREAS, the Company is an operating electric public utility on the Island of Oahu, subject to the Hawaii Public Utilities Law (Hawaii Revised Statutes, Chapter 269) and the rules and regulations of the Public Utilities Commission of the State of Hawaii (hereinafter called the "PUC"); and

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

WHEREAS, the Seller desires to build, own, and operate a renewable energy facility that is classified as an eligible resource under the RPS Law; and

WHEREAS, the Seller understands the need to use all reasonable efforts to maximize the overall Company's System reliability; and

WHEREAS, the Seller's Facility will be located at Kalaeloa, O'ahu, State of Hawaii and is more fully described in Appendix A and Appendix B attached hereto and made a part hereof; and

WHEREAS, the Seller desires to sell to the Company electric energy generated by the Seller's Facility, and the Company agrees to purchase such energy from the Seller, upon the terms and conditions set forth herein.

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

DEFINITIONS

Acceptance Test: A test conducted by Seller and, at the Company's option, witnessed by the Company, within thirty (30) Days of completion of all Interconnection Facilities and in accordance with criteria determined by the Company, of the Company-owned Interconnection Facilities and the interconnection portion of the Seller's Facility to determine conformance with Section 3 and Appendix C and Good Engineering and Operating Practices. Successful completion of the Acceptance Test to the Company's satisfaction shall be a condition precedent for the performance of the Control System Acceptance Test and the Commercial Operation Date. Seller shall provide the Company with at least seven (7) Days advance written notice of the Acceptance Test. No energy will be delivered from Seller to the Company during this Acceptance Test. No later than 15 Business Days prior to conducting the Acceptance Test, the Company and Seller shall agree on a written protocol setting out the detailed procedure and criteria for passing the Acceptance Test. Within 10 Business Days of successful completion of the Acceptance Test, the Company shall notify Seller in writing that the Acceptance Test has been passed and the date upon which the Acceptance Test was passed.

Actual Output: The total quantity of energy (measured in kilowatt hours) produced by the Seller's Facility over a given time period and delivered to the Point of Interconnection, as measured by the revenue meter.

Allowed Capacity: Shall have the meaning set forth in Section 5(e) of Appendix A to this Agreement.

Agreement: Shall have the meaning set forth in the preamble.

Annual Adjusted Energy: The Actual Output during a Contract Year as increased by (1) the amount of energy that was not delivered because of events or conditions of Force Majeure and (2) the amount of Curtailed Excess energy, unless energy was curtailed by the Company because the Seller's Facility was not operating in compliance with Good Engineering and Operating Practices or other requirements set forth in this Agreement, and (3) outages on the Company's transmission system unless such outages were caused by Seller's actions or inactions that were not in compliance with this Agreement.

Annual Contract Energy: The amount of energy specified in Section 2(d) of this Agreement, subject to adjustment in accordance with Section 2(b) of this Agreement. The initial amount of Agreement

Energy that is specified in Section 2(d) of this Agreement represents Seller's estimate of expected annual average energy deliveries to Company under this Agreement over the Term of this Agreement.

As-Available Energy: Energy provided to the Company on an unscheduled basis as Seller determines it to be available from the Seller's Facility, in accordance with the terms and conditions of this Agreement, rather than at prearranged times and in prearranged amounts.

Average Annual Energy: A four-year average of Annual Adjusted Energy over a rolling period of four(4)consecutive Contract Years calculated at the end of each Contract Year beginning with the end of the fourth Contract Year.

Average Insolation: The three-year average of insolation during measured hours at the measuring station that most closely reflects the insolation at Seller's Facility.

Bill of Material: A list of equipment to be installed at the Seller's Facility including, but not necessarily limited to, items such as relays, breakers, and switches.

Business Day: Any calendar day that is not a Saturday, a Sunday, or a federal or Hawaii state holiday.

Capacity: The output potential Seller's Facility can produce or carry under specified conditions expressed in kW or MW. The Capacity for Seller's Facility is set forth in Section 5.b of Appendix A to this Agreement.

Commercial Operations: Seller's Facility shall be considered to have achieved Commercial Operations when all of the following events have occurred: (1) the Acceptance Test has been passed, (2) generating units representing 80% of the Seller's Facility's Capacity have passed Control System Acceptance Tests, (3) Seller provides Company with written notice that (a)Seller is ready to declare the Commercial Operation Date, (b) Seller reasonably expects that the generating units representing the remaining 20% of the Seller's Facility's Capacity will be ready to undergo the Control System Acceptance Tests within the following sixty (60) days, and (c) the Commercial Operation Date has therefore occurred.

Commercial Operation Date (or "COD"): The date on which Seller's Facility first achieves Commercial Operations.

Company: Shall have the meaning set forth in the preamble.

Company-owned Interconnection Facilities: Shall have the meaning set forth in Section 1 of Appendix C (Interconnection Facilities Owned by Company).

Company's Dispatch: The Company's sole and absolute right to control, from moment to moment, through supervisory equipment, 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 Seller to the Company, subject to the operating constraints of Seller's Facility and as permitted under this Agreement.

Company's System: 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.

Company's System Operator: The authorized representative of the Company who is responsible for carrying out Company's Dispatch.

Competitive Bidding Framework: 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 the order issued December 8, 2006.

Construction Milestones: Shall have the meaning set forth in Section 13 of this Agreement.

Construction Start Date: The date on which continuous construction of permanent structures begins at the Site. In the case of a solar photovoltaic project, the Construction Start Date occurs when Seller begins pouring foundations for the mounting and racking components.

Contract Capacity: Shall have the meaning set forth in Section 2(e) of this Agreement.

Contract Price: The price that the Company will pay Seller for energy delivered on a monthly basis as set forth in Table D-1 of Appendix D to this Agreement.

Contract Year: A twelve calendar month period which begins on the first day of the month coincident with or next following the Commercial Operation Date and, thereafter, anniversaries thereof; provided, however, that, in the event the Commercial Operation Date is not the first day of the calendar month, the initial Contract

Year shall also include the days from the Commercial Operation Date to the first day of the succeeding month.

Control System Acceptance Test(s): A test or tests performed on the centralized control system and Curtailment Control Interface of Seller's Facility, consisting of a functional demonstration of such equipment through the successful completion of such test to Company's satisfaction, and conducted in accordance with procedures set forth in Section 1.h of Appendix B.

Curtailed Excess Energy: Shall mean the difference (measured in kilowatt hours) between the Seller's Facility's Actual Output and its Uncurtailed Output over a given period of curtailment, as measured by equipment installed by Seller at the Seller's Facility sufficient to enable Seller to collect data necessary to reasonably demonstrate the amount of Curtailed Excess Energy to the Company. The Company shall have the right on a real time basis 24 hours per day to access this data electronically at the Company's expense.

Curtailment Control Interface: Shall have the meaning set forth in Section 1.g of Appendix B of this Agreement.

Daily Delay Damages: Shall have the meaning set forth in Section 13(f) of this Agreement.

Day: Means a calendar day.

Development Period Security: Shall have the meaning set forth in Section 14(b) of this Agreement.

Effective Date: Shall have the meaning set forth in the preamble.

Energy Cost Adjustment Clause: The provision in the Company's rate schedules that allows the Company to pass through to its customers the Company's costs of fuel and purchased power.

Environmental Credits: Any environmental credit, offset, or other benefit allocated, assigned or otherwise awarded by any governmental or international agency to the Company or the Seller based in whole or in part on the fact that the Seller's Facility is a non-fossil fuel facility. Such Environmental Credits shall include, but not be limited to, emissions credits, including credits triggered because such facility does not produce carbon dioxide when generating electric energy, or any renewable energy credit, but in all cases shall not mean any existing or future tax credits (however those tax credits may be styled including, without limitation, energy, production investment and other such tax credits or any grants in lieu of any such tax credits).

Event of Default: Shall have the meaning set forth in Section 15 of this Agreement.

Extended Term: Shall have the meaning set forth in Section 12(a).

Facility Debt: Means the obligations of Seller to any lender pursuant to the Financing Documents, including without limitation, principal of, premium and interest on indebtedness, fees, expenses or penalties, amounts due upon acceleration, prepayment or restructuring, swap or interest rate hedging brokerage costs and any claims or interest due with respect to any of the foregoing.

Facility Lender: Means, collectively, any lender(s) providing any Facility Debt and any successor(s) or assigns thereto.

Financing Documents: The loan and credit agreements, notes, bonds, indentures, security agreements, lease financing agreements, mortgages, deeds of trust, interest rate exchanges, swap agreements and other documents relating to the development, bridge, construction and/or permanent debt financing for the Seller's Facility, including any credit enhancement, credit support, working capital financing, or refinancing documents, and any and all amendments, modifications, or supplements to the foregoing that may be entered into from time to time at the discretion of Seller in connection with development, construction, ownership, leasing, operation or maintenance of the Seller's Facility.

Force Majeure: Shall have the meaning set forth in Section 21 of this Agreement.

Forced Outage: An unplanned unit shutdown caused by factors such as automatic or programmed protective trips and operator-initiated trips due to equipment malfunction.

Good Engineering and Operating Practices: The practices, methods and acts engaged in or approved by a significant portion of the electric utility industry for similarly situated U.S. facilities, considering Company's isolated island setting, that at a particular time, in the exercise of reasonable judgment in light of the facts known or that reasonably should be known at the time a decision is made, would be expected to accomplish the desired result in a manner consistent with law, regulation, reliability for an island system, safety, environmental protection, economy and expedition. With respect to the Seller's Facility, Good Engineering and Operating Practices include, but are not limited to, taking reasonable steps as necessary or appropriate for a solar photovoltaic facility to ensure that:

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1. Adequate materials, resources and supplies, including fuel, are available to meet the Seller's Facility's needs under normal conditions and reasonably anticipated abnormal conditions.
2. Sufficient operating personnel are available and are adequately experienced and trained to operate the Seller's Facility properly, efficiently and within manufacturer's guidelines and specifications and are capable of responding to emergency conditions.
3. Preventive, routine and non-routine maintenance and repairs are performed on a basis that ensures reliable long-term and safe operation, and are performed by knowledgeable, trained and experienced personnel utilizing proper equipment, tools, and procedures.
4. Appropriate monitoring and testing is done to ensure equipment is functioning as designed and to provide assurance that equipment will function properly under both normal and emergency conditions.
5. Equipment is operated in a manner safe to workers, the general public and the environment and in accordance with equipment manufacturer's specifications, including, without limitation, defined limitations such as steam pressure, temperature, moisture content, chemical content, quality of make-up water, operating voltage, current, frequency, rotational speed, polarity, synchronization, control system limits, etc.

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

Guaranteed Commercial Operation Date: The date specified in Appendix E of this Agreement.

Guaranteed Project Milestone: Shall have the meaning set forth in Section 13(b) of this Agreement.

Ideal Output: Means the maximum number of kilowatt hours that the Seller's Facility is capable of producing over a given period of time at a given point along its Power Curve taking into account actual operating conditions during that period of time, for example,

derated units, and adjusted for any electricity consumed by the Seller's Facility and electrical losses, if any, to the Point of Interconnection. For example, the Ideal Output of a solar photovoltaic project during a period of curtailment is equal to one hundred percent (100%) of the kilowatt hours which should be generated during the period of curtailment, calculated by combining the Power Curve with the Average Insolation over the entire period of curtailment, adjusted for any electricity consumed by the Seller's Facility and electrical losses from the photovoltaic modules to the Point of Interconnection.

Ideal Output Ratio: Means the Seller's Facility's Actual Output divided by its Ideal Output.

Independent Evaluator: A person empowered to resolve disputes due to failure of the parties to agree on a Performance Standards Revision Document pursuant to Section 23(e) and Section 23(j) of this Agreement.

In-Service Date: The date that both the Acceptance Test and Control System Acceptance Test(s) for all generating units are deemed by the Company to have been successfully completed.

Initial Term: Shall have the meaning set forth in Section 12(a).

Interconnection Facilities: The equipment and devices required to permit Seller's Facility to operate in parallel with and deliver electric energy to Company's System, such as, but not limited to, transmission lines, transformers, switches, and circuit breakers.

Interconnection Requirements Study ("IRS"): A study, performed in accordance with the terms of the IRS Letter Agreement and with Section 4 and Appendix C of this Agreement, to assess the projected interaction of the Seller's Facility with the Company's System.

Interconnection Requirements Study Letter Agreement ("IRS Letter Agreement"): The letter agreement and any written, signed amendments thereto, between the Company and the Seller that describes the scope, schedule, and payment arrangements for the Interconnection Requirements Study.

kV: Kilovolt.

kW: Kilowatt.

Motion for Reconsideration: A motion to the PUC for reconsideration, rehearing, further hearing, or modification, suspension, vacation, or a combination thereof, of a PUC Order.

MW: Megawatt.

Non-appealable PUC Approval Order: (1) A PUC Approval Order that is not subject to appeal to any Circuit Court of the State of Hawaii or the Supreme Court of the State of Hawaii, because the thirty (30) day period (accounting for weekends and holidays as appropriate) permitted for such an appeal has passed without the filing of notice of such an appeal, or (2) a PUC Approval Order that was affirmed on appeal to any Circuit Court of the State of Hawaii or the Supreme Court, or the Intermediate Appellate Court upon assignment by the Supreme Court, of the State of Hawaii, or was affirmed upon further appeal or appellate process, and that is not subject to further appeal, because the jurisdictional time permitted for such an appeal (and/or further appellate process such as a motion for reconsideration or an application for writ of certiorari) has passed without the filing of notice of such an appeal (or the filing for further appellate process).

Non-appealable PUC Approval Order Date: The date that the PUC Approval Order becomes a Non-appealable PUC Approval Order.

Operating Period Security: Shall have the meaning set forth in Section 14(d) of this Agreement.

Performance Standards: The various performance standards for the operation of Seller's Facility and the delivery of energy from the Seller's Facility to the Company specified in Section 3 of Appendix B as such standards may be revised from time to time pursuant to Section 23 of this Agreement.

Performance Standards Information Request: A written notice from Company to Seller proposing revisions to one or more of the Performance Standards then in effect and requesting information from Seller concerning such proposed revision(s).

Performance Standards Modifications: For each Performance Standards Revision, any capital improvements, additions, enhancements, replacements, repairs or other operational modifications to Seller's Facility and/or to changes in Seller's operations or maintenance practices necessary to enable Seller's Facility to achieve the performance requirements of such Performance Standards Revision.

Performance Standards Pricing Impact: Any adjustment in Agreement pricing in \$/MWh necessary to specifically reflect the recovery of the net costs and/or net lost revenues specifically attributable to any Performance Standards Modification necessary to comply with a Performance Standard Revision, which shall consist of the following:

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(1) recovery of any capital investment (a) made over a cost recovery period starting after the Performance Standards Revision is made effective following a PUC Performance Standards Revision Order through the end of the initial Term and (b) based on a proposed capital structure that is commercially reasonable for such an investment and the return on investment is at market rates for such an investment or similar investment); (2) recovery of reasonably expected net additional operating and maintenance costs; and (3) an adjustment in pricing necessary to compensate Seller for reasonably expected reductions, if any, in the delivery of energy to Company under this Agreement, which shall consist of (A) an increase in payments necessary to compensate Seller for expected reduced energy payments under this Agreement; and (B) to the extent applicable, an increase in payments necessary to compensate Seller for reasonably expected reductions in receipt of Production Tax Credits (pursuant to Section 45 of the Internal Revenue Code) calculated on an after-tax basis.

Performance Standards Proposal: A written communication from Seller to Company detailing the following with respect to a proposed Performance Standards Revision: (1) a statement as to whether Seller believes that it is technically feasible to comply with the Performance Standards Revision and the basis therefore; (2) the Performance Standards Modifications proposed by Seller to comply with the Performance Standards Revision; (3) the capital and incremental operating costs of any necessary technical improvements, and any other incremental net operating or maintenance costs associated with any necessary operational changes, and any expected lost revenues associated with expected reductions in energy delivered to Company; (4) the Performance Standards Pricing Impact of such costs and/or lost revenues; (5) information regarding the effectiveness of such technical improvements or operational modifications; (6) proposed contractual consequences for failure to comply with the Performance Standard Revision that would be commercially reasonable under the circumstances; and (7) such other information as may be reasonably required by the Company to evaluate Seller's proposals. A Performance Standards Proposal may be issued either in response to a Performance Standards Information Request or on Seller's own initiative.

Performance Standards Revision: A revision, as specified in a performance Standards Information Request or a Seller-initiated Performance Standards Proposal, to the Performance Standards in effect as of the date of such Request or Proposal.

Performance Standards Revision Document: A document specifying one or more Performance Standards Revisions and setting forth the changes to the Agreement necessary to implement such Performance

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Standards Revision(s). A Performance Standards Revision Document may be either a written agreement executed by Company and Seller or as directed by the Independent Evaluator pursuant to Section 23(j) of this Agreement, in the absence of such written agreement.

Permit Application Filing Date: The Construction Milestone by which Seller shall file all applications for Permits required for the construction and operation of the Seller's Facility.

Permits: All permits, licenses, approvals, certificates, entitlements and other authorizations issued by Governmental Authorities required for the construction, ownership and operation of the Seller's Facility, and all amendments, modifications, supplements, general conditions and addenda thereto.

Point of Interconnection: The point of delivery of energy and/or Capacity supplied by Seller to Company where Seller's Facility interconnects with Company's System. The Point of Interconnection shall be identified on the Single Line Diagram attached as Exhibit B-1.

Power Curve: The manufacturer-warranted power curve.

Project: The Seller's Facility as described in Appendix A.

PUC (Public Utilities Commission): Shall have the meaning set forth in the recitals.

PUC Approval Order: The decision and order of the PUC approving the application or motion as filed on the PUC Submittal Date by the parties seeking approval of this Agreement as set forth in Section 12 of this Agreement.

PUC Approval Order Date: The PUC Approval Order Date shall be defined as follows:

- (1) If a PUC Approval Order is issued, and is not made subject to a Motion for Reconsideration, the PUC Approval Order Date shall be the issuance date of the PUC Approval Order;
- (2) If the PUC Approval Order becomes subject to a Motion for Reconsideration, and the Motion for Reconsideration is denied or the PUC Approval Order is affirmed after reconsideration, the PUC Approval Order Date shall be deemed to be the issuance date of the order denying reconsideration or affirming the PUC Approval Order.

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PUC Performance Standards Revision Order: The decision and order of the PUC approving the application or motion by the parties seeking (1) approval of the Performance Standards Revision in question and the associated Performance Standards Revision Document, (2) finding that the impact of the Agreement pricing changes on Company's revenue requirements is reasonable, and (3) approval to include the costs arising out of pricing changes in the Company's Energy Cost Adjustment Clause (or equivalent).

PUC's Standards: Standards for Small Power Production and Cogeneration in the State of Hawaii, issued by the Public Utilities Commission of the State of Hawaii, Chapter 74 of Title 6, Hawaii Administrative Rules, currently in effect and as may be amended from time to time.

PUC Submittal Date: The date of submittal of the Company's complete application or motion for approval to include the costs of purchased energy under this Agreement in the Company's Energy Cost Adjustment Clause (or equivalent).

PURPA: Public Utility Regulatory Policies Act of 1978 (P.L. 95-617) as amended from time to time and as applied in Hawaii by the Public Utilities Commission.

Qualifying Facility: As defined in the Public Utility Regulatory Policies Act of 1978 and the regulations issued thereunder.

RPS Law: The Hawaii law that mandates that the Company and its subsidiaries generate or purchase certain amounts of their net electricity sales over time from qualified renewable resources. Those requirements are 10% by 2010, 15% by 2015, 25% by 2020, and 40% by 2030. The RPS requirements in Hawaii are codified as Hawaii Revised Statutes (HRS) 269-91 through 269-95.

Security Funds: A collective designation for the Development Period Security and Operating Period Security established by Seller as provided in Section 14 of this Agreement.

Seller: Shall have the meaning set forth in the preamble.

Seller-owned Interconnection Facilities: All Interconnection Facilities required to interconnect the Seller's Facility with the Company's System at 46,000 volts, at the Point of Interconnection.

Seller's Facility: Seller's renewable energy facility that is the subject of this Agreement and is classified as an eligible resource under the RPS Law, including the Seller-owned Interconnection Facilities and all equipment, devices, associated appurtenances

owned, controlled, operated and managed by Seller in connection with, or to facilitate, the production, generation, transmission, delivery or furnishing of electricity by Seller to Company and required to interconnect with Company's System.

Site: The parcel of real property on which the Seller's Facility will be constructed and located, including any easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the construction, operation and maintenance of the Seller's Facility. The Site is more specifically described in Appendix A to this Agreement.

Term: Shall mean the Initial Term and the Extended Term (if any), collectively.

Termination Damages: Shall have the meaning set forth in Section 15(c) and shall be calculated in accordance with Section 16 of this Agreement.

Third Party: Any person or entity other than the Company or the Seller, and includes, but is not limited to, any subsidiary or affiliate of the Seller.

Total Actual Interconnection Cost: Actual costs for the Company-owned Interconnection Facilities, to be designed, engineered and constructed by Company, as provided in Appendix C.

Total Estimated Interconnection Cost: Estimated costs for the Company-owned Interconnection Facilities, to be designed, engineered and constructed by Company, as provided in Appendix C.

Transfer Date: The date, prior to the Commercial Operation Date, upon which Seller transfers to Company all right, title and interest in and to the Company-owned Interconnection Facilities to the extent, if any, that such facilities were constructed by Seller and/or its Contractors.

Uncurtailed Output: Means the quantity of energy that would have been produced by a curtailed Seller's Facility and delivered to the Point of Interconnection over a given period of curtailment had the Seller's Facility's generation not been so curtailed. The Seller's Facility's Uncurtailed Output shall be calculated by multiplying the Seller's Facility's Ideal Output Ratio over the ten (10) minute period immediately prior to the Seller's Facility's receipt of the curtailment signal by the Seller's Facility's Ideal Output for the period of curtailment.

Waiver Agreement: A written agreement between the Company and the Seller to waive the requirement of obtaining a satisfactory Non-appealable PUC Approval Order as provided in Section 12(d) of this Agreement.

Waiver Agreement Date: The date on which the Waiver Agreement is effective as stated in the Waiver Agreement.

AGREEMENT PROVISIONS

1) Parallel Operation

The Company agrees to allow the Seller to interconnect and operate the Seller's Facility in parallel with the Company's System provided that such interconnection and operation shall not: (a) adversely affect the Company's property or the operations of its customers and customers' property; (b) present safety hazards to the Company's System, property or employees or the Company's customers or the customers' property or employees; or (c) otherwise fail to comply with this Agreement. Such parallel operation shall be contingent upon the satisfactory completion, as reasonably determined solely by the Company, of the Acceptance Test and, to the extent applicable, the Control System Acceptance Test in accordance with Good Engineering and Operating Practices.

2) Purchase and Sale of Energy; Rate for Purchase and Sale; Billing and Payment;

- (a) The Seller agrees to deliver to the Company all of the Actual Output produced by the Seller's Facility and delivered to the Point of Interconnection from the initial delivery of energy under this Agreement through the end of the Term, in accordance with the terms and conditions of this Agreement. The Company agrees to purchase Actual Output from the Seller pursuant to the terms and conditions of this Agreement. Included in the purchase and sale of Actual Output are all of the Environmental Credits associated with the Actual Output. The Company will not reimburse the Seller for any taxes or fees imposed on the Seller including, but not limited to, State of Hawaii general excise tax.
- (b) The Seller will be paid for Actual Output on a monthly basis equal to the product of the price specified in Appendix D and the Actual Output; provided, in any Contract Year, if the Actual Output exceeds 120% of the quantity of Annual Contract

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Energy specified in Section 2(d), below, the price paid on a monthly basis for the Actual Output in excess of the Annual Contract Energy in such Contract Year shall be 75% of the Contract Price for such month. The level of Annual Contract Energy shall be adjusted based on the performance of the Seller in meeting its Agreement requirements. For the first four Contract Years of the Agreement, the Annual Contract Energy will be the Annual Contract Energy specified in Section 2(d). After the fourth Contract Year and subsequently on each anniversary of the end of the fourth Contract Year, the Company will calculate the Average Annual Energy. When the Average Annual Energy is less than 80% of the Annual Contract Energy for that same four-year period, the Annual Contract Energy amount will be reduced such that the Annual Contract Energy in any year shall be based on the lowest four year rolling average of Average Annual Energy. For the period following the Effective Date and prior to the earlier of the Commercial Operation Date, the Non-Appealable PUC Approval Order Date or the Waiver Agreement Date, the Company shall not be obligated to accept or pay for any energy delivered by the Seller, however, any energy accepted by the Company during this period shall be paid for at a rate equivalent to 75% of the first year Contract Price.

- (c) Curtailment adjustments will be based on the difference between the Actual Output during any hour of curtailment and the Uncurtailed Output. This difference is the Curtailed Excess Energy. For purposes of calculating Uncurtailed Output, the Seller shall provide an estimate to the Company with data reasonably sufficient to calculate the Seller's Facility's Ideal Output during the hour of curtailment.
- (d) The initial Annual Contract Energy is set at 11,550 MWh for a Contract Year.
- (e) The Contract Capacity is set at 5 MW. The Allowed Capacity is specified in Appendix A. Seller shall not make any alteration or modification to the Seller's Facility which results in a change to the Contract Capacity or the Allowed Capacity without the Company's prior written consent.
- (f) Sales of energy by the Company to the Seller shall be governed by an applicable rate schedule filed with the PUC and not by this Agreement, except with respect to the reactive amount adjustment referred to in Appendix B.
- (g) By the fifth Business Day of each calendar month, the Company shall provide the Seller or its designated agent with the

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appropriate data for the Seller to compute the energy charge for the Actual Output in the preceding calendar month as determined in accordance with this Agreement.

- (h) By the tenth Business Day of each calendar month, the Seller shall submit to the Company an invoice that separately states the following for the preceding month: (i) the Actual Output during this period; (ii) the energy charge for energy purchased by the Company as set forth in Appendix D of this Agreement; and (iii) the monthly metering charge as set forth in Section 7 of this Agreement.
- (i) By the twentieth Business Day of each calendar month (but, except as otherwise provided in the following sentence, no later than the last Business Day of that month if there are less than twenty Business Days in that month), the Company shall make payment on such invoice, or, if the Company has a reasonable basis for disputing all or any portion of such invoice, provide to the Seller an itemized statement of its objections to all or any portion of such invoice and pay any undisputed amount. The time in which the Company must make payment to Seller shall be increased on a day-for-day basis for each Day that Seller is delinquent in providing to the Company the information under Section 2(h) of this Agreement. If the Company is not timely in providing data required in Section 2(g) and the Seller's invoice is subsequently not received by the Company in accordance with Section 2(h), the Company must still meet the twentieth Business Day payment date. An estimated payment, subject to reconciliation with the complete invoice, may be made as an interim provision until a complete invoice can be prepared by the Seller and received by the Company.
- (j) Notwithstanding all or any portion of such invoice in dispute, any payment not made to the Seller by the twentieth Business Day of each calendar month (or the last Business Day of that month if there are less than twenty Business Days in that month), or by the due date for such payment if extended pursuant to Section 2(i), shall accrue interest at the average daily prime rate at the Bank of Hawaii plus two percent (2%) for the period until the outstanding interest and invoiced amounts (or amounts due to the Seller if determined to be less than the invoiced amounts) are paid in full. Partial payments shall be applied first to outstanding interest and then to outstanding invoice amounts.
- (k) In the event adjustments are required to correct inaccuracies in an invoice after payment, the party requesting adjustment

shall recompute and include in the party's request the amounts due during the period of the inaccuracy. The difference between the amount paid and that recomputed for the invoice shall either be (i) paid to Seller, or set-off by the Company against the next invoice payment to Seller, as appropriate, together with interest from the date that such invoice was payable until the date that such recomputed amount is paid at the average daily prime rate at the Bank of Hawaii for the period, or (ii) objected to by the party responsible for such payment within thirty (30) Days following its receipt of such request. All claims for adjustments shall be waived for any deliveries of electricity made more than twelve (12) months preceding the date of any such request.

- (1) The Seller, after giving reasonable advance written notice to the Company, shall have the right to review all billing, metering and related records relating to the Seller's Facility during normal working hours on Business Days. The Company shall maintain such records for a period of not less than twelve (12) months.

3) Facility Owned and/or Operated by the Seller

- (a) The Seller agrees 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 damages resulting from the parallel operation of the Seller's Facility, including such equipment, records and operating procedures as more fully described in Appendix B. The Seller agrees that no material changes or additions to the Seller's Facility shall be made without prior written approval by the Company and amendment to the Agreement.
- (b) The net instantaneous MW output from the Seller's Facility may not exceed the Allowed Capacity as specified in Section 5.e of Appendix A. The Company may take appropriate action to limit the Actual Output of Seller's Facility to the extent provided for elsewhere under this Agreement.
- (c) The Point of Interconnection is shown on the final single-line drawing, provided by the Seller and reviewed by the Company, which is attached to Exhibit B-1. The Point of Interconnection will be at the voltage level of the Company's System. If it is necessary to step up the voltage at which the Seller's energy is delivered to the Company's System, the Point of Interconnection will be on the high voltage side of the step-up transformer.

4) Interconnection Facilities Owned by the Company

Subject to the terms and conditions included in Appendix C, the Company agrees to furnish, install (or, pursuant to Appendix C, may allow the Seller to install in whole or in part), own, operate and maintain such Interconnection Facilities on the Company's side of the Point of Interconnection with the Seller's Facility as required to accept energy from the Seller's Facility and for parallel operation of the Seller's Facility with the Company's System as more fully described in Appendix C. All such Interconnection Facilities shall be the property of the Company. Where any Company-Owned Interconnection Facilities are to be located on the Site, the Seller shall provide, at no expense to the Company, a location and access acceptable to the Company for all such Company-owned Interconnection Facilities. If power sources (120/240VAC) are required, the Seller shall provide such sources, at no expense to the Company.

5) Scheduling

- (a) Scheduling of Output: To the extent that scheduling is required now or in the future, (i) Seller will reasonably cooperate with the Company with respect to the scheduling of Actual Output, and (ii) each party shall designate authorized representatives to communicate with regard to scheduling and related matters arising under this Agreement.
- (b) Scheduling of Maintenance: The Seller shall submit a schedule of maintenance outages for the next five year period beginning with January of the following year in writing to the Company each year by June 30. The schedule shall state the estimated periods of operation, number of anticipated and scheduled shutdowns or reductions of output and the reasons therefore, and the proposed dates and durations of scheduled maintenance, including the scope of work for the maintenance requiring shutdown or reduction in output of the Seller's Facility. The Company shall review the maintenance schedule for the five year period and inform the Seller in writing no later than December 1 of the same year of the Company's concurrence or requested revisions. The Seller shall revise its schedule for timing and duration of scheduled shutdowns and scheduled reductions of output of the Seller's Facility to accommodate the Company's revisions, unless such revisions would not be consistent with Good Engineering and Operating Practices, and make all reasonable efforts, consistent with Good Engineering and Operating Practices, to accommodate any subsequent changes in such schedule reasonably requested by

the Company if such changes are deemed necessary by the Company to meet the Company's System requirements.

6) Forecasting

- (a) For the Company's planning purposes, Seller shall, by December 1 of each year during the Term of the Agreement (except for the last year of the Term), provide a forecast of each month's average-day energy production from the Seller's Facility, by hour, for the following calendar year. This forecast (i) shall include an expected range of uncertainty based on historical operating experience, and (ii) shall be updated on a monthly basis by notice given to the Company at least six Business Days before the first Business Day of each month.
- (b) By 0900 Hawaii time on the Business Day immediately preceding the day on which energy from the Facility is to be delivered, Seller shall provide the Company with an hourly forecast of deliveries for each hour of the next day. Seller shall update a forecast any time information becomes available indicating a change in the forecast of generation or net output from the then current forecast; provided, however, that Seller shall not be required to update such forecasts more frequently than once per hour.
- (c) In order to make Seller's forecasts as accurate as possible, Seller will install and maintain appropriate equipment for that purpose or appropriate electronic or internet connections to appropriate insulation measuring sites.
- (d) When Seller learns that any of its equipment will be taken out of service or will be returned to service which may affect its delivery of energy to the Company, Seller shall notify the Company as soon as practicable, and in any event, no later than the daily forecasts required by Section 6(b), above. This requirement to notify shall include, but not be limited to, notice to the Company of Seller's intention to take a segment of the Seller's Facility off-line due to factors such as an inverter malfunction, repair or replacement. Any segment start-up or shut-down must be coordinated with the Company in advance to the extent necessary and practicable to allow a reasonable amount of time for the Company to make generation adjustments required by the additional energy resulting from a return to service of or a segment or the loss of energy from a segment shut-down.

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- (e) The forecasts called for by this Agreement shall be non-binding, good faith estimates only, and shall be substantially in the form reasonably requested by the Company. Seller shall prepare such forecasts and updates by utilizing an insolation prediction model or service that is (i) commercially available or proprietary to the Seller, and (ii) comparable in accuracy to models or services commonly used in the solar energy industry, so long as such model or service is available at a commercially reasonable cost and is satisfactory to the Company in the exercise of its reasonable discretion.

7) Seller Payments

Seller shall pay to the Company (a) all amounts pursuant to Appendix C, and (b) a monthly metering charge of \$25.00 per month, which is in addition to any charges due the Company pursuant to the applicable rate schedule pursuant to Section 2(f) of this Agreement.

8) Continuity of Service

- (a) General. The Company may require the Seller to temporarily curtail, interrupt or reduce deliveries of energy when necessary in order for the Company to construct, install, maintain, repair, replace, remove, investigate, test or inspect any of its equipment or any part of the Company System including, but not limited to, accommodating the installation and/or Acceptance Test of non-utility owned facilities to the Company's System; or if the Company determines that such curtailment, interruption or reduction is necessary because of a system emergency, forced outage, operating conditions on its system such as, but not limited to, those described in Appendix B, Section 2; or the inability to accept deliveries of energy due to light loading conditions as described in Section 8(e); or if either the Seller's Facility does not operate in compliance with Good Engineering and Operating Practices or acceptance of energy from the Seller by the Company would require the Company to operate the Company's System outside of Good Engineering and Operating Practices which in this case shall include, but not be limited to, excessive system frequency fluctuations or excessive voltage deviations, and any situation that the Company's System Operator determines, at his or her sole discretion using Good Engineering and Operating Practices, could place in jeopardy system reliability. In the event that the Company temporarily curtails, interrupts, or reduces deliveries of energy pursuant to this Section 8(a), the

Company shall not be obligated to accept or pay for any energy from the Seller except for such energy that the Company notifies the Seller that it is able to take during this period due to the aforesaid circumstances.

- (b) Negative Avoided Cost. The Company shall not be required to purchase energy during any period during which, due to operational circumstances, purchases from the Seller will result in costs greater than those which the Company would incur if it did not make those purchases, but instead generated an equivalent amount of energy itself. The Company shall provide the Seller with at least twenty-four (24) hours advance oral or written notice of any such period to allow the Seller to cease the delivery of energy to the Company. The Company and the Seller will work to develop a mutually acceptable format for this notice, including, but not limited to, a listing of typical parameters that define anticipated constraints in purchases from the Seller. If the Company fails to provide such notice, it will pay the same rate for such purchase of energy as would be required had the period not occurred. The Company shall not curtail pursuant to this Section 8(b) of the Agreement solely as a consequence of the Company's filed avoided energy cost data being lower than the applicable price per MWh paid to the Seller under this Agreement. The Company and the Seller acknowledge that this Section 8(b) shall be construed in accordance with 18 CFR § 292.304(f) of the Regulations under PURPA issued by the Federal Energy Regulatory Commission and § 6-74-24 of the Standards for Small Power Production and Cogeneration issued by the PUC.
- (c) No Economic Dispatch. Section 8 of this Agreement is not intended to permit the Company to require the Seller to curtail, interrupt or reduce deliveries of energy based on the Company's economic dispatch (for example, as a consequence of Company's filed Avoided Cost Data being lower than the applicable price per MWh paid to Seller under this Agreement, or to make purchases from a Qualifying Facility).
- (d) Reasonable Steps. The Company shall take all reasonable steps (such as reducing the output of base-load generation, including its own base-load generating units, during light loading conditions, taking into consideration factors such as the need to maintain system reliability and stability under changing system conditions and configurations, the need for downward regulating reserves, the terms and conditions of power purchase agreements for base-loaded firm capacity or scheduled energy, and the normal minimum loading levels of

such units) to minimize the number and duration of curtailments, interruptions or reductions, subject to and in accordance with Appendix B.

- (e) Light Loading Conditions. For purposes of this Section 8, as of the Effective Date, light loading conditions typically occur between the hours of 12:00 midnight and 7:00 a.m., but the timing of such conditions may change over time.
- (f) Curtailment Report. Company will provide Seller with a Curtailment Report in the form of Appendix B-3 documenting the curtailment to Seller's Facility on a monthly basis. The curtailment report will include the start and end time of each Curtailment Event, the amount of Curtailed Energy (provided Seller provided Company with the electronic signal to gather such data), the reason for curtailment, and, if a Curtailment Event is due to excess energy, the sum of all gross system generation on-line at the initiation of such Curtailment Event. The Curtailment Report shall not include curtailment instituted by the Seller, curtailment for scheduled maintenance of the 46kV line, or Curtailment Events during which less than one (1) MWh of energy is curtailed. The report will be due to the Seller thirty (30) Days from the end of the previous calendar month and shall cover curtailment during the previous calendar month. For the purposes of this paragraph a "Curtailment Event" is defined as the time between when the Seller's Facility's MW output equals the curtailment signal from Company to the time when the Seller's Facility's MW output first drops below the curtailment signal from Company.

9) Personnel and System Safety

Notwithstanding any other provisions of this Agreement, if at any time the Company reasonably determines that the Seller's Facility may endanger the Company's personnel, and/or the continued operation of the Seller's Facility may endanger the integrity of the Company's System or have an adverse effect on the Company's other customers' electric service, the Company shall have the right to curtail or disconnect, as determined in the sole discretion of Company's System Operator, the Seller's Facility from the Company's System. The Seller's Facility shall remain curtailed or disconnected, as the case may be, until such time as the Company is satisfied that the condition(s) referred to above have been corrected, and the Company shall not be obligated to accept or pay for any energy except for such energy as is accepted by Company from the Seller during such period. If the Company curtails or disconnects the Seller's Facility from the

Company's System for personnel or system safety reasons, it shall as soon as practicable notify the Seller by telephone and thereafter confirm in writing the reasons for the curtailment or disconnection.

10) Metering

- (a) Meters - The Company shall purchase and own standard meters generally used in the electric utility industry suitable for measuring the net energy output of the Seller's Facility sold to the Company in kilowatts and kilowatthours on a time-of-day basis and of reactive power flow in kilovars and true root mean square kilovarhours. The metering point shall be at the Point of Interconnection. The Seller shall supply, at no expense to the Company, a mutually agreeable location and mounting structure for meters and associated equipment. The Company will calibrate these devices in accordance with the latest edition of the American National Standards Institute (ANSI) Code for Electricity Metering. All meters shall be ratcheted to prevent reversal. The Company shall install, maintain and bi-annually (every two years) test such meters and shall be reimbursed by Seller for all reasonably incurred costs for such installation, maintenance and testing work.
- (b) Meter Testing - The Company shall provide at least forty-eight (48) hours' notice to Seller prior to any test it may perform on the metering or telemetering equipment. The Seller shall have the right to have a representative present during each such test. Seller may request, and the Company shall perform if requested, tests in addition to the annual test and Seller shall pay the cost of such test. The Company may, at its own discretion, perform tests in addition to the annual test and the Company shall pay the cost of such test. If any of the metering equipment is found to be inaccurate at any time, as determined by testing in accordance with this Section 10(b), the Company shall promptly cause such equipment to be made accurate, and the period of inaccuracy, as well as an estimate for correct meter readings, shall be determined in accordance with Section 10(c).
- (c) Corrections - If any test of metering equipment conducted by the Company indicates that the meter readings are in error by one percent (1%) or more, the meter readings shall be corrected as follows: (i) determine the error by testing the meter at approximately ten percent (10%) of the rated current (test amperes) specified for the meter; (ii)

determine the error by testing the meter at approximately one hundred percent (100%) of the rated current (test amperes) specified for the meter; (iii) the average meter error shall then be computed as the sum of one-fifth (1/5) the error determined in Section 10(c)(i) and four-fifths (4/5) the error determined in Section 10(c)(ii). The average meter error shall be used to adjust the bills for the amount of electric energy supplied to the Company for the previous six (6) months from the Seller's Facility, unless records of the Company conclusively establish that such error existed for a greater or lesser period, in which case the correction shall cover such actual period of error.

11) Permits, Licenses and Land Rights

- (a) The Seller shall obtain, at its expense, any and all Permits required for the construction and operation of the Seller's Facility, including but not limited to rights-of-way, easements or leases. The Seller shall install, operate and maintain the Seller's Facility safely and in compliance with all applicable laws and regulations. To the extent private land or land owned by a government entity is involved, the Seller shall obtain, at its expense, any necessary Permits, rights-of-way, easements and leases required in order that the Seller's Facility can be interconnected with the Company's System.
- (b) If the land on which the Seller's Facility is located is not owned by the Seller's Facility's owner, a copy of the agreement with the owner of the land which establishes the right of the Seller's Facility's owner to put the Seller's Facility on the land and the existence of required rights-of-way, easements and leases shall be provided to the Company before the Construction Start Date.
- (c) Seller shall, prior to commencement of construction of the Company-owned Interconnection Facilities (whether to be built by the Seller or by the Company), provide the necessary Permits, rights of way, easements, leases and/or rights-of-entry for construction, ownership, operation and maintenance of the Company-owned Interconnection Facilities. Seller shall also provide the Company access to occupy designated space, operate, maintain, modify, and remove such Company-owned Interconnection Facilities.
- (d) The parties' representatives shall follow all safety and other rules generally applicable to the parties' personnel safety procedures when accessing the Seller's Facility and

the Site and shall conduct themselves in a manner that will not interfere with the operation of the Seller's Facility. Seller will provide Company with information about such safety procedures to enable Company to comply with this requirement.

12) Term

- (a) Subject to Section 12(b) of this Agreement, the initial term of this Agreement shall commence upon the Effective Date of this Agreement and shall remain in effect for twenty (20) Contract Years following the Commercial Operation Date ("Initial Term") and shall continue in effect thereafter ("Extended Term") until terminated by either party as provided for herein. Either the Company or Seller may terminate this Agreement at any time after the end of the Initial Term upon not less than 180 Days' advance written notice to the other party. Such notice may be provided at any time after the Initial Term. The Annual Contract Energy and the Contract Price in effect at the end of the Initial Term shall remain in effect during any Extension Term until this Agreement is terminated by either party as provided herein.
- (b) Except where obligations of the parties are explicitly stated as being effective before the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date, only Section 3 (Facility Owned and/or Operated by the Seller), Section 12 (Term), Section 14 (Credit Assurance and Security) as it relates to Development Period Security, Section 17 (Indemnification), Section 22 (Warranties and Representations), Section 24 (Financial Compliance), Section 28 (Dispute Resolution), Section 30 (Miscellaneous) and the Definitions of this Agreement shall become effective on the Effective Date of this Agreement. All other portions of this Agreement become effective on the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date.
- (c) Upon the Effective Date of this Agreement, the parties shall use their reasonable efforts to obtain a PUC Approval Order satisfactory to the parties. Company shall submit to the PUC an application for a satisfactory PUC Approval Order. A satisfactory PUC Approval Order shall include authorization for the purchased energy charges to be paid by the Company to the Seller hereunder (and related revenue taxes) to be included in the Company's Energy Cost Adjustment Clause (or equivalent) for the Term of this Agreement. If the

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satisfactory PUC Approval Order is not obtained within twelve (12) months of the PUC Submittal Date, or within such longer period as the Company and the Seller may agree to by a written agreement, the Company or the Seller may, by written notice delivered within 30 days of such date, declare this Agreement null and void. In the event the 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 not obtained within eighteen (18) months of the PUC Submittal Date, or within such longer period as the Company and the Seller may agree to by a subsequent written agreement, the Company or the Seller may, by written notice delivered within 30 days of such date, declare this Agreement null and void. If the Agreement is declared null and void as provided herein, the parties hereto shall thereafter be free of all obligations hereunder and shall pursue no further remedies against one another; provided, however, that the provision of Section 12 shall continue to remain in effect, regardless. However, if the Seller had requested the Company to incur costs associated with the Company-owned Interconnection Facilities prior to receipt of a satisfactory PUC Approval Order, or if there is an appeal, a Non-appealable PUC Approval Order, the Seller shall pay the Company the actual costs and cost obligations incurred by the Company as of the date the Agreement is declared null and void for the Company-owned Interconnection Facilities and any reasonable costs incurred thereafter.

- (d) If the PUC Approval Order is appealed, the parties shall meet within six months of the PUC Approval Order Date and decide whether to waive the requirement of obtaining a satisfactory Non-appealable PUC Approval Order. Neither party shall be required to agree to such a waiver. If the parties agree in writing to such a waiver ("Waiver Agreement"), Seller agrees that it shall proceed with its performance solely at its own risk. Furthermore, if the parties conclude a Waiver Agreement, the provisions of the Agreement that would otherwise become effective upon obtaining a satisfactory Non-appealable PUC Approval Order shall become effective as of the date of the Waiver Agreement Date.
- (e) Notwithstanding any of the foregoing, the Company or Seller may terminate the Agreement at any time upon the occurrence of any condition described in Section 15, Event of Default.

13) Construction Milestones

- (a) Time is of the essence of this Agreement, and Seller's ability to meet certain milestones is critically important. Seller's inability to achieve Commercial Operations for the Project by the Guaranteed Commercial Operation Date may cause the Company to not meet applicable requirements under the RPS Law. As such, the Company may incur financial consequences for failure to meet such requirements.
- (b) The Construction Milestones include a Guaranteed Project Milestone, namely the Commercial Operation Date, which shall occur no later than the date set forth in Appendix E (the "Guaranteed Commercial Operation Date"), subject to any allowed extension caused by Force Majeure. If the Guaranteed Commercial Operation Date is missed, then Section 13(e) below shall apply.
- (c) The Construction Milestones also include the Reporting Milestones that are set forth in Appendix F.
- (d) If Seller misses the Permit Application Filing Date Milestone, the Construction Financing Closing Milestone or the Construction Start Date as set forth in Appendix F, by more than ninety (90) Days, Seller shall submit to the Company, within ten (10) Business Days of such missed Construction Milestone date, a remedial action plan which shall provide a detailed description of Seller's course of action and plan to achieve the missed Construction Milestone date and all subsequent Construction Milestones, provided that delivery of any remedial action plan shall not relieve Seller of its obligation to meet any subsequent Construction Milestones.
- (e) Seller shall cause the Project to meet the Guaranteed Commercial Operation Date on or before the date for that Construction Milestone specified in Appendix E to this Agreement. In the event Seller fails to achieve the Guaranteed Commercial Operation Date, Seller shall have ninety (90) days to cure its failure to perform; provided, however, that if the Guaranteed Commercial Operation Date cannot be achieved within such ninety (90) day cure period, Seller shall have up to an additional sixty (60) days (for a total of one hundred and fifty (150) days) to cure its failure to perform and achieve the Guaranteed Commercial Operation Date provided that Seller (i) promptly provide to the Company a plan for achieving the Guaranteed Commercial Operation Date and (ii) promptly and diligently execute such plan. In the event Seller's delay in meeting the Guaranteed

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Commercial Operation Date is caused by Force Majeure, Seller shall have up to a maximum of three hundred sixty-five (365) days from the Guaranteed Commercial Operation Date to cure its failure to perform. After the cure period, the Company shall be entitled on a monthly basis to draw upon the Development Period Security for liquidated damages equal to Daily Delay Damages, as calculated in Section 13(f), below, for each day that Seller fails to meet the Guaranteed Commercial Operation Date. Each party agrees and acknowledges that (i) the damages that the Company would incur due to delay in achieving the Guaranteed Commercial Operation Date would be difficult or impossible to predict with certainty, and (ii) the Daily Delay Damages are an appropriate approximation of such damages.

- (f) Daily Delay Damages shall be calculated as follows: the Seller shall pay the Company, for each day that Seller fails to meet the Guaranteed Commercial Operation Date specified in Appendix E to this Agreement, after applicable cure periods as provided in Section 13(e), an amount of \$167/MW multiplied by the Contract Capacity up to a maximum amount of \$150,000 (\$30,000/MW x Contract Capacity).
- (g) Commencing upon the Effective Date of this Agreement, Seller shall submit to the Company, on the first Day of each calendar month until the Commercial Operation Date is achieved, progress reports in a form set forth on Appendix H. These progress reports shall notify the Company of the current status of each Construction Milestone. Seller shall include in such report a list of all letters, notices, applications, approvals, authorizations, filings, permits and licenses relating to any Governmental Authority and shall provide any such documents as may be reasonably requested by the Company. In addition, Seller shall advise the Company as soon as reasonably practicable of any problems or issues of which it is aware which may materially impact its ability to meet the Construction Milestones. Seller shall provide the Company with any requested documentation to support the achievement of Construction Milestones within ten (10) Business Days of receipt of such request from the Company. Upon the occurrence of a Force Majeure, Seller shall also comply with the requirements of Section 21(c) to the extent such requirements provide for communications to Company beyond those required under this Section 13(g).

14) Credit Assurance and Security

- (a) Seller is required to post Development Period Security and Operating Period Security based on the following requirements.
- (b) Development Period Security: To guarantee its undertaking to meet the Guaranteed Commercial Operation Date, the Seller shall provide Development Period Security to the Company within ten (10) Days of Effective Date of the Agreement in an amount of \$30/kW based on the original Contract Capacity.
- (c) PUC Approval: In the event a Non-appealable PUC Approval Order is not obtained within eighteen (18) months of the PUC Submittal Date, or within such longer period as the Company and the Seller may agree by a subsequent written agreement as provided in Section 12(c) of this Agreement, and the parties do not enter into a Waiver Agreement as provided in Section 12(d) of this Agreement, or if the PUC issues an order denying approval for an application for a PUC Approval Order, or if the PUC issues an order that is not a complete approval and which is not satisfactory to Company or Seller, the Development Period Security (including any accumulated interest, if applicable) shall be returned to the Seller.
- (d) Operating Period Security: To guarantee the performance of the Seller's obligations under the Agreement for the period starting from the Commercial Operation Date to the end of the Agreement, the Seller shall provide Operating Period Security to the Company in the amount of \$40/kW based on the original Contract Capacity, due within five (5) Days of the Commercial Operation Date. Upon receipt of the Operating Period Security, the Development Period Security (including any accumulated interest, if applicable) shall be returned to Seller minus an amount, if any, for Daily Delay Damages that is due and owing to Company but not previously paid by Seller.
- (e) Form of Security: Seller may supply the Development Period and Operating Period Security required in the form of cash or an irrevocable letter of credit from a bank or other financial institution with a credit rating of "A-" or better, which will be substantially in the form attached to this Agreement as Appendix G or such other form as may be required by such bank or financial institution. If the rating (as measured by Standard & Poors) of the bank or financial institution issuing the irrevocable letter of credit falls below A-, the Company may require Seller to replace the irrevocable letter of credit with an irrevocable letter of credit from another bank or financial institution

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with a credit rating of "A-" or better. If security of the form of an irrevocable letter of credit is utilized by the Seller, such security must be issued for a minimum term of one (1) year. Furthermore, at the end of each year the security must be renewed for a period of at least an additional one (1) year term so that at the time of such renewal, the remaining term of any such security shall not be less than one (1) year. Security in the form of an irrevocable letter of credit shall be consistent with this Agreement and include a provision for at least thirty (30) Days advance notice to the Company of any expiration or earlier termination of the security so as to allow the Company sufficient time to exercise its rights under said security if Seller fails to extend or replace the security.

- (f) The Development Period Security and Operating Period Security (collectively referred to as the "Security Funds") established, funded, and maintained by Seller pursuant to the provisions of this Section 14 shall be available to pay any amount due the Company pursuant to this Agreement, and to provide the Company security that Seller will construct the Seller's Facility to meet the Construction Milestones. The Security Funds shall also provide security to the Company to cover damages, should the Seller's Facility fail to achieve the Commercial Operation Date or otherwise not operate in accordance with this Agreement. Seller shall maintain the Security Funds at the contractually-required level throughout the Term of this Agreement. Seller shall replenish the Security Funds to such required level within fifteen (15) Business Days after any draw on the Security Funds by the Company.
- (g) In addition to any other remedy available to it, the Company may, before or after termination of this Agreement, draw from the Security Funds such amounts as are necessary to recover amounts the Company is owed pursuant to this Agreement, including, but without limitation, any damages due the Company and any amounts for which the Company is entitled to indemnification under this Agreement. The Company may, in its sole discretion, draw all or any part of such amounts due the Company from any form of security to the extent available pursuant to this Section 14, and from all such forms, and in any sequence the Company may select. Any failure to draw upon the Security Funds or other security for any damages or other amounts due the Company shall not prejudice the Company's rights to recover such damages or amounts in any other manner.

- (h) The Security Funds shall be maintained at Seller's expense, shall be originated by or deposited in a financial institution or company ("Issuer") acceptable to the Company. Seller may change the form of the Security Funds at any time and from time to time upon reasonable prior notice to the Company, but the Security Funds must at all times be comprised of one or a combination of the forms specified above in Section 14(e).
- (i) The form of such security must meet the Company's requirements to ensure that claims or draw-downs can be made unilaterally by the Company in accordance with the terms of this Agreement. If the security is not renewed or extended as required herein, the Company shall have the right to draw immediately upon the security and to place the amounts so drawn, at Seller's cost and with Seller's funds, in an interest bearing escrow account in accordance with Section 14(j) below, until and unless Seller provides a substitute form of such security meeting the requirements of this Section 14. In all cases, the reasonable costs and expenses of establishing, renewing, substituting, canceling, increasing reducing, or otherwise administering the Letter of Credit shall be borne by Seller.
- (j) If the form of security is in the form of cash as permitted in Section 14(e), above, the cash shall be United States currency, in which the Company holds a first and exclusive perfected security interest, deposited with a reputable, federally-insured bank, either: (i) in an account under which the Company is designated as beneficiary with sole authority to draft from the account or otherwise access the security; or (ii) held by Issuer as escrow agent with instructions to pay claims made by the Company pursuant to this Agreement, such instructions to be in a form satisfactory to the Company. Security provided in this form shall include a requirement for immediate notice to the Company from Issuer and Seller in the event that the sums held as security in the account or trust do not at any time meet the required level for the Security Fund as set forth in this Section 14. Funds held in the account may be deposited in a money-market fund, short-term treasury obligations, investment-grade commercial paper and other liquid investment-grade investments with maturities of three months or less, with all investment income thereon to be taxable to, and to accrue for the benefit of, Seller. After the Commercial Operation Date is achieved, annual account sweeps for recovery of interest earned by the Security Fund shall be allowed by Seller. At such times as the balance in

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the escrow account exceeds the amount of Seller's obligation to provide security hereunder, the Company shall remit to Seller on demand any excess in the escrow account above Seller's obligations, including, but not limited to, any and all damages owed by the Seller to the Company under the terms of this Agreement.

- (k) Promptly following the end of the Term, and for such additional period following the Term as provided in Section 12(a), above, and the completion of all of Seller's obligations, including, but not limited to, the obligation to pay any and all damages owed by the Seller to the Company, under this Agreement, the Company shall release the Security Fund (including any accumulated interest, if applicable) to Seller.

15) Event of Default

- (a) An Event of Default shall mean, with respect to a party that is subject to the Event of Default the occurrence of any of the following:
- (i) The failure to make any payments required pursuant to this Agreement when due if such failure is not remedied within five (5) Business Days after written notice is received by the party failing to make such payment;
 - (ii) Any representation or warranty made by such party herein is false and misleading in any material respect when made;
 - (iii) Such party becomes bankrupt;
 - (iv) Such party consolidates or amalgamates with, or merges with or into, or transfers all or substantially all its assets to, another entity and, at the same time of such consolidation, amalgamation, merger or transfer, the resulting, surviving or transferee entity fails to assume all the obligations of such party under this Agreement to which it or its predecessor was a party by operation of law pursuant to an agreement reasonably satisfactory to the other party; or
 - (v) The Company, by act or omission, materially breaches or defaults on any material covenant, condition or other provision of this Agreement, and fails to cure such breach or default within thirty (30) days after

written notice of such breach or default from the Seller, unless (A) such breach or default is due to Force Majeure; provided, however, that if the Company does not cure such breach or default resulting from Force Majeure within 365 days of such notice, Seller may terminate this Agreement or, (B) such breach or default cannot be cured within thirty (30) days and the Company is making diligent efforts to cure such breach or default; provided, however, that if such breach or default is not cured within 365 days of such notice, Seller may terminate this Agreement.

- (b) An Event of Default shall mean, with respect to Seller as the Defaulting Party, the occurrence of any of the following:
- (i) if at any time during the Term of the Agreement, Seller delivers or attempts to deliver to the Point of Interconnection for sale under this Agreement energy that was not generated by the Seller's Facility;
 - (ii) failure by the Seller to deliver from the Seller's Facility at least sixty percent of the initial Annual Contract Energy to the Point of Interconnection for a period of three (3) consecutive Contract Years;
 - (iii) failure by the Seller to meet the Guaranteed Commercial Operation Date after the cure period provided in Section 13(e) of this Agreement;
 - (iv) failure by Seller to satisfy the Credit Assurance and Security requirements agreed to pursuant to Section 14 of this Agreement;
 - (v) failure by the Seller to install, operate, maintain, or repair the Seller's Facility in accordance with Good Engineering and Operating Practices within thirty (30) days of written notice of such breach from the Company, and subject to the same extension of cure periods as set forth in Section 15(b)(vii) below;
 - (vi) failure of the Seller to provide energy to the Company for a period of three hundred sixty-five (365) or more consecutive days, unless such failure is caused by Force Majeure or the inability of the Company to accept such energy; or

- (vii) Seller, by act or omission, materially breaches or defaults on any material covenant, condition or other provision of this Agreement, and fails to cure such breach or default within thirty (30) days after written notice of such breach or default from the Company, unless (A) such breach or default is due to Force Majeure; provided, however, that if Seller does not cure such breach or default resulting from Force Majeure within 365 days of such notice, the Company may terminate this Agreement; or, (B) such breach or default cannot be cured within thirty (30) days and the Seller is making diligent efforts to cure such breach or default; provided, however, that if such breach or default is not cured within 365 days of such notice, the Company may terminate this Agreement.
- (c) If an Event of Default with respect to a defaulting party shall have occurred and be continuing, the other party ("non-defaulting party") shall have the right (i) to terminate this Agreement by sending notice, designating a day, no earlier than the day such notice is deemed to be received and no later than twenty (20) days after such notice is deemed to be received, as an early termination date of the Agreement ("early termination date"); (ii) (to withhold any payments due to the defaulting party under this Agreement; (iii) suspend performance; and (iv) exercise any other right or remedy available at law or in equity or to the extent permitted under this Agreement. If the Agreement is terminated by Company because of one or more of the Events of Default in Section 15(b), above, the Company shall have the right, in addition to the rights set forth above in this Section 15(c), to collect liquidated damages ("Termination Damages"), which shall be calculated in accordance with Section 16 below. Disputes regarding the Termination Damages shall be determined in accordance with Section 28.

16) Damages in the Event of Termination by Company

- (a) If the Agreement is terminated by the Company in accordance with this Agreement before the Commercial Operation Date due to an Event of Default where Seller is the defaulting party, the Company shall be entitled to Termination Damages calculated by multiplying the Contract Capacity by \$30/kW. Such Termination Damages shall be the Company's sole and exclusive monetary remedy in connection with such termination due to such Event of Default.

- (b) If the Agreement is terminated by the Company in accordance with this Agreement after the Commercial Operation Date due to an Event of Default where Seller is the defaulting party, the Company shall be entitled to Termination Damages calculated by multiplying the Contract Capacity by \$40/kW. Such Termination Damages shall be the Company's sole and exclusive monetary remedy in connection with such Event of Default.
- (c) Each party agrees and acknowledges that (i) the damages that the Company would incur due to early termination of the Agreement, as provided in Section 15, would be difficult or impossible to predict with certainty, and (ii) the Termination Damages are an appropriate approximation of such damages.

17) Indemnification

- (a) The Seller shall indemnify, defend and hold harmless the Company and its directors, officers, employees and agents (including but not limited to affiliates and contractors and their employees) from and against any and all liabilities, damages, losses, penalties, claims, demands, suits, costs, expenses (including attorneys' fees), and proceedings of every kind, including those for damage to the property or real property of any person or entity (including the Seller) and/or for injury to or death of any person (including the Seller's employees and agents) (collectively "Injury or Damage"), directly or indirectly arising out of or attributable to or in any manner connected with the location, construction, interconnection or parallel operation of the Seller's Facility with the Company's System, including land restoration costs for which the Seller is responsible, if any, and/or directly or indirectly arising out of or attributable to or in any manner connected with the breach of any of Seller's representations or warranties herein, except to the extent that such Injury or Damage is attributable to the gross negligence or willful misconduct of the Company.
- (b) The Company shall indemnify, defend and hold harmless the Seller and its directors, officers, employees and agents (including but not limited to affiliates and contractors and their employees) from and against any and all liabilities, damages, losses, penalties, claims, demands, suits, costs, expenses (including attorneys' fees), and proceedings of every kind, including those for damage to the property or real property of any person or entity (including the

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Company) and/or for injury to or death of any person (including the Company's employees and agents) (collectively "Injury or Damage"), directly or indirectly arising out of or attributable to or in any manner connected with the location, construction, interconnection or parallel operation of the Company's System with the Seller's Facility, and/or directly or indirectly arising out of or attributable to or in any manner connected with the breach of any of the Company's representations or warranties herein, except to the extent that such Injury or Damage is attributable to the gross negligence or willful misconduct of the Seller.

18) Insurance

The Seller shall, at its own expense and during the Term of the Agreement and during any other time that the Seller's Facility is interconnected with the Company's System, secure and maintain in effect with a responsible insurance company authorized to do insurance business in Hawaii the following insurance that will protect the Seller and the Company. The Seller shall maintain commercial general liability insurance with respect to the Seller's Facility, the Seller's operations, and the Seller's interconnection with the Company's System, with a bodily injury and property damage combined single limit of at least \$2,000,000 for any occurrence. Said insurance shall name the Company as an additional insured, shall include contractual liability coverage for written contracts and agreements including this Agreement, and shall be non-cancelable and non-alterable without thirty (30) days' prior written notice to the Company. "Claims made" policies are not acceptable. The coverage limits shall be reviewed annually by the Company and if, in the Company's discretion, the Company determines that the coverage limits should be increased, the Company shall so notify the Seller. The amount of any increase of the coverage limits, when considered as a percentage of the then existing coverage limits, shall not exceed the cumulative amount of increase in the Consumer Price Index occurring after the coverage limits herein were last set. The Seller shall within thirty (30) days of notice from the Company increase the coverage as directed in such notice and the costs of such increased coverage limits shall be borne by the Seller. The insurance required hereunder shall provide that it is primary with respect to the Seller and the Company. The Seller shall provide evidence of such insurance by providing certificates of insurance to the Company prior to construction of the Company's Interconnection Facilities and within 30 days of any change. The Seller's indemnity and other obligations shall not be

limited by the foregoing insurance requirements. Any deductible shall be the responsibility of the Seller.

19) Assignment

- (a) This Agreement may not be assigned by either Company or Seller without the prior written consent of the other party (such consent not to be unreasonably withheld, conditioned, or delayed); provided that Seller shall have the right, without the consent of Company, to:
 - (i) assign and delegate all of its rights, benefits, and obligations to a wholly-owned subsidiary or to an affiliated company under common control with Seller provided such subsidiary or affiliate unconditionally assumes the obligations of Seller in writing; and
 - (ii) for the purposes of arranging or rearranging debt and/or equity financing for Seller's Facility, assign all or any part of its right, title and interest in or benefits of, but not its obligations, or make a collateral assignment of, the Contract to one or more financing parties and/or financing party surety, providing such financing for Seller's Facility.
- (b) In the case of Section 19(a)(i) or Section 19(a)(ii) above, Seller shall immediately provide written notice to Company of any such assignment and Seller shall provide to Company all information about the assignment and the assignee reasonably requested by Company. In the case of a collateral assignment under Section 19(a)(ii) above, Company shall, if requested by Seller: (A) execute such Hawaii-law-governed documents as may be reasonably requested by the financing parties to acknowledge the assignment and the rights of such financing parties to (1) receive copies of notices of Events of Default where the Seller is the nonperforming party and (2) exercise remedies to assume Seller's obligations under this Agreement (including curing an Event of Default by Seller in accordance with the terms of the Agreement); and (B) provide a legal opinion as to the due authorization of such Company acknowledgment.

20) Sale of Energy to Third Parties

The Seller shall not sell energy from the Seller's Facility to any Third Party, which includes subsidiaries or affiliates of the Seller.

21) Force Majeure

- (a) The term "Force Majeure", as used in this Agreement, means causes or events beyond the reasonable control of, and without the fault or negligence of the party claiming Force Majeure, including, without limitation, acts of God, sudden actions of the elements such as floods, earthquakes, hurricanes, or tornadoes, or volcanic activity; high winds of sufficient strength or duration to materially damage a facility or significantly impair its operation for a period of time longer than normally encountered in similar businesses under comparable circumstances; lightning; fire; sabotage; vandalism beyond that which could reasonably be prevented by the party claiming Force Majeure; terrorism; war; riots; fire; explosion; blockades; insurrection; strike; slow down or labor disruptions (even if such difficulties could be resolved by conceding to the demands of a labor group); and emergency orders issued by a Governmental Authority.
- (b) Force Majeure does not include:
 - (i) any acts or omissions of any third party, including, without limitation, any vendor, materialman, customer, or supplier of Seller, unless such acts or omissions are themselves excused by reason of Force Majeure;
 - (ii) any full or partial curtailment in the electric output of the Seller's Facility that is caused by or arises from a mechanical or equipment breakdown or other mishap or events or conditions attributable to normal wear and tear or flaws, unless such mishap is caused by Force Majeure;
 - (iii) changes in market conditions that affect the cost of the Seller's supplies, or that affect demand or price for any of the Seller's products, or that otherwise render this Agreement uneconomic or unprofitable for the Seller;
 - (iv) Seller's inability to obtain Permits or approvals of any type for the construction, operation, or maintenance of the Seller's Facility;
 - (v) Seller's inability to obtain sufficient fuel, power or materials to operate the Seller's Facility, except if Seller's inability to obtain sufficient fuel, power or

materials is caused solely by an event of Force Majeure as defined above in Section 21(a);

- (vi) Seller's failure to obtain additional funds, including funds authorized by a state or the federal government or agencies thereof, to supplement the payments made by the Company pursuant to this Agreement;
 - (vii) a Forced Outage except where such Forced Outage is caused by an event of Force Majeure as defined above in Section 21(a) of this Agreement;
 - (viii) any full or partial curtailment in the delivery of the Actual Output of the Seller or of the ability of the Company to accept Capacity and Actual Output from the Seller which is caused by any third party including, without limitation, any vendor or supplier of the Seller or the Company, except to the extent due to Force Majeure as defined above in Section 21(a) of this Agreement.
- (c) Neither party shall be responsible or liable for any delay or failure in its performance under this Agreement, nor shall any delay, failure, or other occurrence or event become an Event of Default, to the extent such delay, failure, occurrence or event is substantially caused by conditions or events of Force Majeure, provided that:
- (i) the nonperforming party gives the other party, within 48 hours after the Force Majeure cause or event begins or is reasonably discovered, whichever is later, written notice describing the particulars of the Force Majeure cause or event;
 - (ii) the nonperforming party gives the other party, within 14 days after the Force Majeure cause or event begins, a written explanation of the Force Majeure cause or event and its effect on the nonperforming party's performance, which explanation shall include evidence reasonably sufficient to establish that the occurrence constitutes Force Majeure as defined in Section 21(a) of this Agreement;
 - (iii) the suspension of performance is of no greater scope and of no longer duration than is required by the condition or event of Force Majeure;

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- (iv) the nonperforming party proceeds with reasonable diligence to remedy its inability to perform and provides weekly progress reports to the other party describing actions taken to end the Force Majeure; and
 - (v) when the event or condition of Force Majeure ends and the nonperforming party is able to resume performance of its obligations under this Agreement, that party shall give the other party written notice to that effect.
- (d) Except as otherwise expressly provided for in this Agreement, the existence of a condition or event of Force Majeure shall not relieve the parties of their obligations under this Agreement (including, but not limited to, payment obligations) to the extent that performance of such obligations is not precluded by the condition or event of Force Majeure.
- (e) In no event will any delay or failure of performance caused by any conditions or events of Force Majeure extend this Agreement beyond its stated Term. However,
- (i) If an event of Force Majeure causes the Seller to not achieve the Guaranteed Commercial Operation Date established in Section 13 and Appendix E of this Agreement, then such date shall be extended for such reasonable period of delay directly resulting from such Force Majeure event subject to the limits set forth in Section 13. However, after the Commercial Operation Date, an event of Force Majeure shall not extend the Term of this Agreement.
 - (ii) In the event that any delay or failure of performance caused by conditions or events of Force Majeure continues for an uninterrupted period of three hundred sixty-five (365) Days from its occurrence or inception, as noticed pursuant to Section 21(c)(i) and Section 21(c)(ii), above, the party not claiming Force Majeure may, at any time following the end of such three hundred sixty-five (365) Day period, terminate this Agreement upon written notice to the affected party, without further obligation by either party except as to (A) costs and balances incurred prior to the effective date of such termination and (B) Termination Damages to which the Company is entitled pursuant to Section 16 of this Agreement. The party not claiming Force Majeure may, but shall not be

obligated to, extend such three hundred sixty-five (365) Day period, for such additional time as it, at its sole discretion, deems appropriate, if the affected party is exercising due diligence in its efforts to cure the conditions or events of Force Majeure.

22) Warranties and Representations

- (a) Both the Company and the Seller represent and warrant, respectively, that:
 - (i) Each respective party has all necessary right, power and authority to execute, deliver and perform this Agreement
 - (ii) The execution, delivery and performance of this Agreement by each respective party will not result in a violation of any law or regulation of any governmental authority, or conflict with, or result in a breach of, or cause a default under, any agreement or instrument to which such party is also a party or by which it is bound. No consent of any person or entity not a party to this Agreement, including any governmental authority (other than the PUC and other agencies whose approval is necessary for construction of Company-owned Interconnection Facilities), is required for such execution, delivery and performance by either party.
- (b) Seller represents and warrants that (i) it is an entity in good standing with the Hawaii Department of Commerce and Consumer Affairs and shall provide the Company with a certified copy of a certificate of good standing by the Effective Date and (ii) any and all energy delivered by Seller to the Company from or through Seller's Facility throughout the Term of the Agreement shall meet the definition of "renewable electrical energy" or "renewable energy" as defined under HRS § 269-91 as of the Effective Date.

23) Process for Addressing Revisions to Performance Standards

- (a) The parties acknowledge that, during the Term of the Agreement, certain Performance Standards may be revised to facilitate necessary improvements in integrating intermittent renewable energy resources into the Company's System and operations. In particular, the following Performance Standards in Appendix B to this Agreement may be revised: Section 3.c, Ramp Rate and Section 3.d, Power

Fluctuation Rate. Such revisions may be attributable to, without limitation, the following: changes in penetration levels of intermittent renewable resources on the Company's System, changes to the state of commercially available technology, changes to Company-owned generation resources, changes in customer electrical usage (such as changes in average hourly load profiles), and changes in regulations or laws (e.g., new environmental constraints, which may limit the Company's ability to start/stop its generators in response to integration of intermittent generation, or laws, rules or regulations impacting the power quality standards for the Company's System).

- (b) If Company concludes that a Performance Standards Revision is necessary or important for the operation of the Company's System and is capable of being complied with by Seller, Company shall have the right to issue to Seller a Performance Standards Information Request with respect to such Performance Standards Revision. Seller shall, within a reasonable period of time following Seller's receipt of such Performance Standards Information Request, but in no event more than 90-Days after Seller's receipt of such Request (or such other period of time as Company and Seller may agree in writing), submit to Company a Performance Standards Proposal responsive to the Performance Standards Revision proposed in such Performance Standards Information Request.
- (c) Upon receipt of a Performance Standards Proposal submitted in response to a Performance Standards Information Request, Company will evaluate such Performance Standards Proposal and Seller shall assist Company in performing such evaluation as and to the extent reasonably requested by Company (including, but not limited to, providing such additional information as Company may reasonably request and participating in meetings with Company as Company may reasonably request). Company shall have no obligation to evaluate a Performance Standards Proposal submitted at Seller's own initiative.
- (d) If, following Company's evaluation of a Performance Standards Proposal, Company desires to consider implementing the Performance Standards Revision addressed in such Proposal, Company shall provide Seller with written notice to that effect, such notice to be issued to Seller within 180 Days of receipt of the Performance Standards Proposal, and Company and Seller shall proceed to negotiate in good faith a Performance Standards Revision Document setting forth the specific changes to the Agreement that are

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necessary to implement such Performance Standards Revision. A decision by the Company to initiate negotiations with Seller as aforesaid shall not constitute an acceptance by Company of any of the details set forth in Seller's Performance Standards Proposal for the Performance Standards Revision in question, including but not limited to the Performance Standards Modifications and the Performance Standards Pricing Impact. Any adjustment to Agreement pricing set forth in such Performance Standards Revision Document shall be limited to the Performance Standards Pricing Impact (other than with respect to the financial consequences of non-performance as to a Performance Standards Revision). The time periods set forth in such Performance Standards Revision Document as to the effective date for the Performance Standards Revision shall be measured from the date the PUC Performance Standards Revision Order becomes non-appealable as provided in Section 23(f).

- (e) If Company and Seller are unable to agree upon and execute a Performance Standards Revision Document within 180 Days of Company's written notice to Seller pursuant to Section 23(d) above, Company shall have the option of declaring the failure to reach agreement on and execute such Document to be a dispute and submit such dispute to an Independent Evaluator for the conduct of a determination pursuant to Section 23(j) of this Agreement. Any decision of the Independent Evaluator, rendered as a result of such dispute shall include a form of a Performance Standards Revision Document as described in Section 23(d) above.
- (f) No Performance Standards Revision Document shall constitute an amendment to the Agreement unless and until a PUC Performance Standards Revision Order issued with respect to such Document has become non-appealable. Once the condition of the preceding sentence has been satisfied, such Performance Standards Revision Document shall constitute an amendment to the Agreement. To be "non-appealable" under this Section 23(f), such Order must be either (i) not subject to appeal to any Circuit Court of the State of Hawaii or the Supreme Court of the State of Hawaii, because the thirty (30) day period (accounting for weekends and holidays as appropriate) permitted for such an appeal has passed without the filing of notice of such an appeal, or (ii) affirmed on appeal to any Circuit Court of the State of Hawaii or the Supreme Court, or the Intermediate Appellate Court upon assignment by the Supreme Court, of the State of Hawaii, or affirmed upon further appeal or appellate

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process, and is not subject to further appeal, because the jurisdictional time permitted for such an appeal (and/or further appellate process such as a motion for reconsideration or an application for writ of certiorari) has passed without the filing of notice of such an appeal (or the filing for further appellate process).

- (g) The rights granted to Company under Section 23(d) and Section 23(e) above are exclusive to Company. Seller shall not have a right to initiate negotiations of a Performance Standards Revision Document or to initiate dispute resolution under Section 23(j), as a result of a failure to agree upon and execute any Performance Standards Revision Document.
- (h) Notwithstanding any provision of this Section 23 to the contrary, (i) Company shall have no right to issue a Performance Standards Information Request prior to the end of the fifth Contract Year and (ii) Company shall have no right to issue more than one Performance Standards Information Request during any 12-month period.
- (i) Section 23 is intended to specifically address necessary revisions to the Performance Standards to enhance integration of intermittent resources onto the Company's System, or to comply with future laws and regulations which may be driven in part by higher integration of intermittent resources, and is not intended for either party to provide a means for renegotiating any other terms of this Agreement. Revisions to the Performance Standards in accordance with the provisions of this Section 23 are not intended to materially increase Seller's risk of non-performance or default.
- (j) If the Company decides to declare a dispute as a result of the failure to reach agreement and execute a Performance Standards Revision Document pursuant to Section 23(e), it shall provide written notice to that effect to Seller. Within 30 Days of delivery of such notice Seller and Company shall agree upon an Independent Evaluator, and the terms and conditions for the engagement of such Independent Evaluator, to resolve the dispute regarding a Performance Standards Revision Document. The Independent Evaluator shall be reasonably qualified and expert in renewable energy power generation, matters relating to the Performance Standards, financing, and power purchase agreements. If the parties are unable to agree upon an Independent Evaluator within such 30-Day period, the Company shall apply to the PUC for

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the appointment of an Independent Evaluator. If an Independent Observer retained under the Competitive Bidding Framework is qualified and willing and available to serve as Independent Evaluator, the PUC may appoint one of the persons or entities qualified to serve as an Independent Observer to be the Independent Evaluator; if not, the PUC may appoint another qualified person to serve as Independent Evaluator. In its application, the Company shall ask the PUC to appoint an Independent Evaluator within 30 Days of the application.

- (i) Promptly upon appointment, the Independent Evaluator shall request the parties to address the following matters within the next 15 Days:
 - A. The Performance Standard Revision(s);
 - B. The technical feasibility of complying with the Performance Standard Revision(s) and likelihood of compliance;
 - C. How Seller would comply with the Performance Standard Revision(s);
 - D. Reasonably expected net costs and/or lost revenues associated with the Performance Standards Revision(s);
 - E. The appropriate level, if any, of Performance Standards Pricing Impact in light of the foregoing; and
 - F. Contractual consequences for non-performance that are commercially reasonable under the circumstances.
- (ii) Within 90 Days of appointment, the Independent Evaluator shall render a decision unless it is necessary for the Independent Evaluator to have additional time to render a decision.
- (iii) The parties shall assist the Independent Evaluator throughout the process of preparing its review, including making key personnel and records available to the Independent Evaluator, but neither party shall be entitled to participate in any meetings with personnel of the other party or review of the other party's records. However, the Independent Evaluator will have the right to conduct meetings, hearings or oral arguments in which both parties are represented. The parties may meet with each other during the review process to explore means of resolving the matter on mutually acceptable terms.

- (iv) The following standards shall be applied by the Independent Evaluator in rendering his decision: (A) if it is not technically or operationally feasible for Seller to comply with a Performance Standard Revision, the Independent Evaluator shall determine that the Agreement shall not be amended to incorporate such Performance Standard Revision (unless the parties agree otherwise); (B) if it is technically or operationally feasible for Seller to comply with a Performance Standard Revision, the Independent Evaluator shall incorporate such Performance Standard Revision in a Performance Standards Revision Document including (1) Seller's Performance Standards Modifications, (2) pricing terms that incorporate the Performance Standards Pricing Impact, and (3) contract terms and conditions that are commercially reasonable under the circumstances, especially with respect to the consequences of non-performance by Seller as to Performance Standards Revision(s). In addition to the Performance Standards Revision Document, the Independent Evaluator shall render a decision which sets forth the positions of the parties and Independent Evaluator's rationale for his or her decisions on disputed issues.
- (v) The fees and costs of the Independent Evaluator shall be paid by Company for the first \$25,000.00 of such fees and costs; above those amounts, the party that is not the prevailing party shall be responsible for any such fees and costs; provided, if neither party is the prevailing party, then the fees and costs of the Independent Evaluator above \$25,000.00 shall be borne equally by the parties. The Independent Evaluator in rendering his or her decision shall also state which party prevailed over the other party, or that neither party prevailed over the other.

24) Financial Compliance

- (a) Seller shall provide or cause to be provided to Company on a timely basis, as reasonably determined by Company, all information, including but not limited to information that may be obtained in any audit referred to below (the "Information"), reasonably requested by Company for purposes of permitting Company and Hawaiian Electric Industries, Inc. ("HEI") to comply with the requirements (initial and on-going) of (i) identifying variable interest entities and

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determining primary beneficiaries under the accounting principles of Financial Accounting Standards Board ("FASB") Accounting Standards Codification 810, Consolidation ("FASB ASC 810"), (ii) Section 404 of the Sarbanes-Oxley Act of 2002 ("SOX 404") and (iii) all clarifications, interpretations and revisions of and regulations implementing FASB ASC 810 and SOX 404 issued by the FASB, Securities and Exchange Commission, the Public Company Accounting Oversight Board, Emerging Issues Task Force or other governing agencies. In addition, if required by Company in order to meet its compliance obligations, Seller shall allow Company or its independent auditor, to audit, to the extent reasonably required, Seller's financial records, including its system of internal controls over financial reporting; provided that Company shall be responsible for all costs associated with the foregoing, including but not limited to Seller's reasonable internal costs. Company shall limit access to such Information to persons involved with such compliance matters and restrict persons involved in Company's monitoring, dispatch or scheduling of Seller and/or Seller's Facility, or the administration of the Agreement, from having access to such Information(unless approved in writing in advance, by Seller).

- (b) If there is a change in circumstances during the term of the Agreement that would trigger consolidation of Seller's finances on to Company's balance sheet, and such consolidation is not attributable to Company's fault, then the parties will take all commercially reasonable steps, including modification of the Agreement, to eliminate the consolidation, while preserving the economic "benefit of the bargain" to both parties.
- (c) Company shall, and shall cause HEI to, maintain the confidentiality of the Information as provided in this Section 24. Company may share the Information on a confidential basis with HEI and the independent auditors and attorneys for HEI and Company. (Company, HEI, and their respective independent auditors and attorneys are collectively referred to in this Section 24 as "Recipient.") If either Company, or HEI, in the exercise of their respective reasonable judgments, concludes that consolidation or financial reporting with respect to Seller and/or this Agreement is necessary, Company, and HEI each shall have the right to disclose such of the Information as Company or HEI, as applicable, reasonably determines is necessary to satisfy applicable disclosure and reporting or other requirements and give Seller prompt written notice

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thereof (in advance to the extent practicable under the circumstances). If Company or HEI disclose Information pursuant to the preceding sentence, Company and HEI shall, without limitation to the generality of the preceding sentence, have the right to disclose Information to the PUC and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs of the State of Hawaii ("Consumer Advocate") in connection with the PUC's rate making activities for Company and other HEI affiliated entities, provided that, if the scope or content of the Information to be disclosed to the PUC exceeds or is more detailed than that disclosed pursuant to the preceding sentence, such Information will not be disclosed until the PUC first issues a protective order to protect the confidentiality of such Information. Neither Company nor HEI shall use the Information for any purpose other than as permitted under this Section 24.

- (d) In circumstances other than those addressed in the immediately preceding paragraph, if any Recipient becomes legally compelled under applicable law or by legal process (e.g., deposition, interrogatory, request for documents, subpoena, civil investigative demand or similar process) to disclose all or a portion of the Information, such Recipient shall undertake reasonable efforts to provide Seller with prompt notice of such legal requirement prior to disclosure so that Seller may seek a protective order or other appropriate remedy and/or waive compliance with the terms of this Section 24. If such protective order or other remedy is not obtained, or if Seller waives compliance with the provisions of this Section 24, Recipient shall furnish only that portion of the Information which it is legally required to so furnish and to use reasonable efforts to obtain assurance that confidential treatment will be accorded to any disclosed material.
- (e) The obligation of nondisclosure and restricted use imposed on each Recipient under this Section 24 shall not extend to any portion(s) of the Information which (i) was known to such Recipient prior to receipt, or (ii) without the fault of such Recipient is available or becomes available to the general public, or (iii) is received by such Recipient from a third party not bound by an obligation or duty of confidentiality.
- (f) Company is unwilling to be subject to accounting treatment that results from variable interest entity treatment as set forth in FASB ASC 810. If there is a change in

circumstances during the Term that would trigger consolidation of Seller's finances on to Company's balance sheet, and such consolidation is not attributable to Company's fault, then the parties will take all commercially reasonable steps, including modification of the Agreement, to eliminate the consolidation, while preserving the economic "benefit of the bargain" to both parties.

25) Good Engineering and Operating Practices

- (a) Each party agrees to install, operate and maintain its respective equipment and facility and to perform all obligations required to be performed by such party under this Agreement in accordance with Good Engineering and Operating Practices in the electric industry and applicable laws, rules, orders and tariffs.
- (b) Wherever in this Agreement and the attached Appendices the Company has the right to give specifications, determinations or approvals, such specifications, determinations or approvals shall be given in accordance with the Company's standard practices, policies and procedures and shall not be unreasonably withheld. Any such specifications, determinations, or approvals shall not be deemed to be an endorsement, warranty, or waiver of any right of the Company.

26) Equal Employment Opportunity and Equal Opportunity for Disabled Veterans, Recently Separated Veterans, Other Protected Veterans, and Armed Forces Service Medal Veterans

- (a) Equal Employment Opportunity. (Applicable to all contracts of \$10,000 or more in the whole or aggregate. 41 CFR 60-1.4 and 41 CFR 60- 741.5(a).) Seller is aware of and is fully informed of Seller's responsibilities under Executive Order 11246 (reference to which include amendments and orders superseding in whole or in part) and shall be bound by and agrees to the provisions as contained in Section 202 of said Executive Order and the Equal Opportunity Clause as set forth in 41 CFR 60-1.4 and 41 CFR 60- 741.5(a), which clauses are hereby incorporated by reference.
- (b) Equal Opportunity for Disabled Veterans, Recently Separated Veterans, Other Protected Veterans, and Armed Forces Service Medal Veterans. (Applicable to (i) each contract of \$25,000 or more entered into before December 31, 2003 (41 CFR 60-250.4) or (ii) each federal government contract of \$100,000

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or more, entered into or modified on or after December 31, 2003 (41 CFR 60-300.4) for the purchase, sale or use of personal property or nonpersonal services (including construction).) If applicable, Seller agrees that it is, and shall remain, in compliance with the rules and regulations promulgated under The Vietnam Era Veterans Readjustment Assistance Act of 1974, as amended by the Jobs for Veterans Act of 2002, including the requirements of 41 CFR 60-250.5(a) (for orders/contracts entered into before December 31, 2003) and 41 CFR 60-300.5(a) (for orders/contracts entered into or modified on or after December 31, 2003) which are incorporated into this order/contract by reference.

27) Set Off

The Company shall have the right to set off any payment under this Agreement and any past due payment under the rate schedule referenced in Section 2(f) which is not paid by the Seller against the Company's payments of subsequent monthly invoices as necessary.

28) Dispute Resolution

(a) Good Faith Negotiations

Before any dispute under this Agreement is subjected to the provisions of Section 28(b) or any litigation, the presidents, vice presidents, or authorized delegates from both the Seller and the Company having full authority to settle the dispute, shall personally meet in Hawaii and attempt in good faith to resolve the dispute.

(b) Dispute Resolution Procedures

If the parties are unable to resolve any dispute under this Agreement under the procedures of Section 28(a), such dispute shall be resolved in Hawaii by binding arbitration in accordance with the requirements of this Section 28(b); provided that, this agreement to arbitrate shall be specifically enforceable and this Section 28 shall not preclude either party from pursuing its equitable remedies to enforce this agreement to arbitrate, including without limitation, seeking injunctive relief. Company and Seller agree that the procedures in this agreement to arbitrate shall be followed to the extent not prohibited by Hawaii Revised Statutes Chapter 658A ("Chapter 658A"). If any of such procedures conflict with Chapter 658A, then except as

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otherwise prohibited in Chapter 658A, Company and Seller agree to waive, or vary the effect of, the requirements of Chapter 658A.

(i) Initiation of Arbitration

Either party shall give to the other written notice in sufficient detail of the existence and nature of any dispute proposed to be arbitrated under this Section 28(b) and the remedy sought as well as a detailed statement of its contentions of law and fact. Such notice shall be made within a reasonable time after the dispute in question arose, and in no event shall such notice be made after the date when institution of legal or equitable proceedings based on such dispute would be barred by the applicable statute of limitations but for this Section 28. Such notice will be signed by the president of the party issuing the notice and be delivered to the president of the other party. The other party shall file an answering statement within twenty (20) Days of receipt of the notice. After the answering statement is filed, the parties shall diligently negotiate in good faith for a period of sixty (60) Days.

(ii) Appointment of Arbitrator

If the dispute is not resolved through the negotiations required by Section 28(b)(i), the parties shall attempt to agree on a person with special knowledge and expertise with respect to the design, construction and operation of electric generating facilities to serve as an arbitrator panel of one. If the parties cannot agree on an arbitrator within twenty (20) Days after the negotiation period required by Section 28(b)(i), each party shall within five (5) Days, appoint one person to serve as an arbitrator and the two arbitrators thus appointed shall select a third arbitrator to serve as chairman of the panel of arbitrators; and such three arbitrators shall determine all matters by majority vote; provided, however, if the two arbitrators appointed by the parties are unable to agree upon the appointment of the third arbitrator within twenty (20) Days after their appointment, both shall give written notice of such failure to agree to the parties and, if the parties fail to agree upon the selection of such third arbitrator within twenty (20) Days thereafter, then either of the parties upon written notice to the other may require such appointment from and pursuant to the rules for commercial arbitration of the

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American Arbitration Association. In selecting arbitrators under this Section 28(b)(ii), the parties shall give preference to qualified Hawaiian domiciliaries.

Each arbitrator appointed pursuant to this Section 28(b)(ii) shall swear to conduct such arbitration in accordance with the terms of this Section 28(b), the laws of the State of Hawaii, and the Code of Ethics of the American Arbitration Association. Each arbitrator who would be disqualified for any reason that would disqualify a judge under the Code of Judicial Conduct shall immediately resign or be withdrawn as an arbitrator. The arbitration panel may choose legal counsel to advise it on the remedies it may grant, procedures and such other legal issues as the panel deems appropriate. Copies of the notice, the statement of contentions of law and fact, the answering statement and this Agreement shall promptly be furnished by the initiating party to the arbitrator(s) selected.

(iii) Arbitration Procedures

(A) The parties shall have one hundred and twenty (120) Days from the date of the formation of the arbitration panel to perform discovery and present evidence and argument to the arbitrators. During this period, the arbitrators shall be available to receive and consider all such evidence as is relevant, within reasonable limits due to the restricted time period, and to hear as much argument as is feasible, giving a fair allocation of time to each party to the arbitration. This period may be extended for sufficient cause by the arbitration panel or by agreement of the parties. The arbitration panel shall have the general powers of a court and may proceed in accordance with established rules of evidence and procedure, liberally construed to promote justice and expeditious resolution of the dispute. The arbitration panel shall have complete discretion over the mode and order of discovery, presentation of evidence, and the conduct of the hearing. The arbitrators shall not consider any evidence or argument not presented during such period. To the extent not prohibited by law and to the extent not in conflict with the procedures set forth in this Section 28(b), such arbitration shall be held in accordance with Chapter 658A, and the prevailing rules of the American Arbitration Association for commercial arbitration.

(B) The arbitrators shall use all reasonable means to expedite discovery and to sanction non-compliance with reasonable discovery requests or any discovery order. The Seller shall require and warrant that (1) all records of the Seller, its partners, members, or affiliates pertaining to the negotiation, administration, and enforcement of this Agreement shall be maintained in the possession of the Seller, and (2) each of its officers, employees, general partners, or managing members will submit to the jurisdiction of the arbitration panel appointed pursuant to this Section 28 and shall respond to all reasonable discovery requests of such arbitration panel. All documents and deponents made available in response to reasonable discovery requests shall be made available in Honolulu, Hawaii.

(C) At the conclusion of such one hundred and twenty (120) day period, the arbitrators shall have thirty (30) Days to reach a determination and to give a written decision to the parties, stating their findings of fact, conclusions of law and final order.

(D) Pending resolution of disputes pursuant to this Section 28, which disputes relate to or impact the Seller's construction schedule for the Seller's Facility, all applicable deadlines and cure periods under this Agreement shall be extended on a day-for-day basis.

(iv) Arbitrator Limitations

The arbitrators shall have authority to interpret and apply the terms and conditions of this Agreement and to order any remedy allowed by this Agreement, but may not change any term or condition of this Agreement, deprive either party of a remedy expressly provided hereunder, or provide any right or remedy that has been excluded hereunder.

(v) Decision Binding on the Parties

The decision of the arbitrators shall be binding on the parties at such time as the decision is confirmed by order of a court of competent jurisdiction pursuant to Chapter 658A.

(vi) Cost of Arbitration

The arbitrators in rendering their decision shall also state which party prevailed over the other party, or that neither party prevailed over the other. The costs of arbitration (including the attorney fees and costs of the parties and legal counsel appointed pursuant to Section 28(b)(ii)) will be borne by the party which is not the prevailing party. In the event neither party prevails, the parties shall each pay fifty percent (50%) of the cost of the arbitration, arbitrator/chair of the panel, and any legal counsel appointed pursuant to Section 28(b)(ii). Also, in the event neither party prevails, the parties each shall bear their own costs, including attorney fees, and those of the arbitrator they appointed to the panel of three arbitrators.

- (c) The provisions of this Section 28 shall not apply to any disputes within the authority of an Independent Evaluator under Section 23 (Process for Addressing Revisions to Performance Standards).

29) Limitation of Liability.

Neither Seller nor Company shall be liable to the other party for any indirect, consequential, incidental, or punitive damages; provided, however, the limitation on damages set forth in the previous sentence shall not apply to a party's indemnification obligations, claims arising from or related to breaches of confidentiality obligations, or claims arising from or related to gross negligence or willful misconduct of a party.

30) Miscellaneous

- (a) Amendments. Any amendment or modification of this Agreement or any part hereof shall not be valid unless in writing and signed by the parties. Any waiver hereunder shall not be valid unless in writing and signed by the party against whom waiver is asserted.
- (b) Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors, legal representatives, and permitted assigns.
- (c) Notices. Any written notice provided hereunder shall be delivered personally or sent by registered or certified

first class mail, with postage prepaid, to the other party at the following address:

(i) Company:

(A) By Mail:

Hawaiian Electric Company, Inc.
PO BOX 2750
Honolulu, Hawaii 06840-001
Attn: Director, Energy Contract Administration
Division

(B) Delivered:

Hawaiian Electric Company, Inc.
220 South King Street, 21st Floor
Honolulu, Hawaii 96813
Attn: Director, Energy Contract Administration
Division

(C) By facsimile:

Hawaiian Electric Company, Inc.
Attention: Director, Energy Contract
Administration Division
(808) 203-1801

(D) By email:

Daniel.ching@heco.com

(ii) Seller: The mailing address listed in Appendix A attached hereto.

(iii) Notice sent by mail shall be deemed to have been given on the date of actual delivery or at the expiration of the fifth day after the date of mailing, whichever is earlier. Any party hereto may change its address for written notice by giving written notice of such change to the other party hereto.

(iv) Any notice delivered by facsimile or email must be followed by personal or mail delivery and the effective date of such notice shall be the date of personal delivery or, if by mail, the earlier of the actual date of delivery

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or the expiration of the fifth day after the date of mailing.

- (d) Effect of Section and Appendix Headings. The headings or titles of the several sections and appendices hereof are for convenience of reference and shall not affect the construction or interpretation of any provision of this Agreement.
- (e) Non-Waiver. No delay or forbearance of the Company or the Seller in the exercise of any remedy or right will constitute a waiver thereof, and the exercise or partial exercise of a remedy or right shall not preclude further exercise of the same or any other remedy or right.
- (f) Relationship of the Parties. Nothing in this Agreement shall be deemed to constitute either party hereto as partner, agent or representative of the other party or to create any fiduciary relationship between the parties. The Seller does not hereby dedicate any part of the Seller's Facility to serve the Company, the Company's customers or the public.
- (g) Entire Agreement. This Agreement, Appendices A through H and the IRS Letter Agreement, incorporated by reference, constitutes the entire understanding and agreement between the parties.
- (h) Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Hawaii. The venue for a civil action related to this Agreement shall be the judicial circuit in which the Seller's Facility is located.
- (i) Limitations. Nothing in this Agreement shall limit the Company's ability to exercise its rights as specified in the Company's Tariff as filed with the PUC, or as specified in General Order No. 7 of the PUC's Standards for Electric Utility Service in the State of Hawaii, as either may be amended from time to time.
- (j) Further Assurances. Each of the parties shall from time to time and at all times do such further acts and deliver all such further documents and assurances as shall be reasonably necessary fully to perform and carry out this Agreement.
- (k) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original and

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all of which, when taken together, shall constitute one and the same agreement.

- (1) Definitions. Terms used in this Agreement not otherwise defined in the context in which they first appear are defined in the Definitions Section.
- (m) Severability. If any term or provision of this Agreement, or the application thereof to any person, entity or circumstances is to any extent invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.
- (n) Settlement of Disputes. Except as otherwise expressly provided, any dispute or difference arising out of this Agreement or concerning the performance or the non-performance by either party of its obligations under this Agreement shall be determined in accordance with the dispute resolution procedures set forth in Section 28 of this Agreement.
- (o) Recovery of Payments. The parties to this Agreement believe, and have entered this Agreement relying on the belief, that, under and pursuant to Subchapter 3, Rule 6-74-22 of the PUC's Standards, after a satisfactory, Non-appealable PUC Approval Order has been obtained: (i) no adjustment in the payments to be paid Seller under the provisions of this Agreement is either appropriate or lawful; and, (ii) that, also in light of the foregoing and of the fact that PURPA and 18 Code of Federal Regulations ("CFR") Part 292, require the Company to offer to purchase from a Qualifying Facility at a price equal to or less than avoided cost, it is neither appropriate nor lawful for the PUC or any successor entity to deny the Company the recovery of any or all amounts paid to Seller pursuant to the terms of this Agreement. Both parties will extend their best efforts to resist and appeal any PUC actions, decisions, or orders denying or having the effect of denying or otherwise preventing the Company from recovering any or all amounts paid to Seller pursuant to the terms of the Agreement.
- (p) Environmental Credits. To the extent not prohibited by law, any Environmental Credit shall be the property of the Company; provided, however, that such Environmental Credits

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shall be to the benefit of the Company's ratepayers in that the value must be credited "above the line". Seller shall use all reasonable efforts to ensure such Environmental Credits are vested in the Company, and shall execute all documents, including, but not limited to, documents transferring such Environmental Credits, without further compensation; provided, however, that the Company agrees to pay for all reasonable costs associated with such efforts and/or documentation.

- (q) Appendices. Each Appendix is an essential and necessary part of this Agreement.
- (r) Negotiated Terms. The parties agree that the terms and conditions of this Agreement are the result of negotiations between the parties and that this Agreement shall not be construed in favor of or against any party by reason of the extent to which any party or its professional advisors participated in the preparation of this Agreement.
- (s) Patents. Seller agrees that in fulfilling its responsibilities under this Agreement, it will not use any process, program, design, device or material that infringes on any United States patent. Seller agrees to indemnify, defend and hold harmless the Company from and against all losses, damages, claims, fees and costs, including but not limited to reasonable attorneys' fees and costs, arising from or incidental to any suit or proceeding brought against the Company for patent infringement arising out of Seller's performance under this Agreement, including but not limited to patent infringement due to the use of technical features of Seller's Facility to meet the Performance Standards specified in the Agreement.

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IN WITNESS WHEREOF, the Company and the Seller have executed this Agreement as of the day and year first above written.

HAWAIIAN ELECTRIC COMPANY, INC.

By

Tayne S. Y. Sekimura

Name Tayne S. Y. Sekimura
Its Senior Vice President & CFO

By

Scott W.H. Sen

Name Scott W.H. Sen
Its Vice President, Energy Resources

("Company")

KALAELOA SOLAR TWO, LLC

By

Mark Brown

Name Mark Brown
Its Vice President and General Mgr, NAC

By

Name

Its

("Seller")

APPENDIX A

DESCRIPTION OF SELLER'S GENERATION AND CONVERSION FACILITY

1. Name of Seller's Facility: **Kalaeloa Solar Two, LLC**
 - a. Location: **Tax Map Key No. (1) 9-1-13:28 and 38 / Kalaeloa, Oahu**
 - b. Telephone number (for system emergencies):
(800)251-9728
2. Owner (If different from Seller): **Kalaeloa Solar Two, LLC**

By Effective Date, Seller shall provide the Company with a certified copy of a certificate warranting that the owner is a corporation, partnership or limited liability company in good standing with the Hawaii Department of Commerce and Consumer Affairs.
3. Operator: **SunPower Corporation, Systems**
4. Name of person to whom payments are to be made:
SunPower Corporation, Systems
 - a. Mailing address: File #30728
P.O. Box 6000
San Francisco, CA 94160
 - b. Hawaii Gross Excise Tax License number:
56191810-01
5. Equipment:
 - a. Type of facility and conversion equipment:
 - b. Design and capacity

Total Seller's Facility Capacity: **5,000kW**

Total Number of Generators: Approximately **37**
Description of Equipment: **Inverter**
Individual unit: **100-135 kW rated Inverter**

	kW	kVAR Consumed	kVAR Produced
<u>Full load</u>	5,000kW	0	0
<u>Startup</u>	N/A	0	0

Generator:

Type	Inverter
Rated Power	100-135 kW
Voltage	480 V, 3 phase
Frequency	60 HZ
Class of Protection	N/A
Number of Poles	N/A
Rated Speed	N/A
Rated Current	163A or less
Uncorrected Power Factor	1.0
Corrected Power Factor	1.0
Corrected Current	163A or less

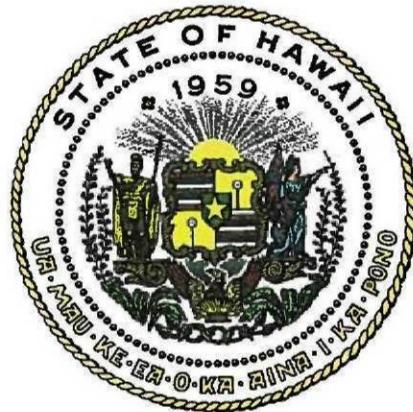
- c. Single or 3 phase: **3 phase**
 - d. Name of manufacturer: **Satcon or similar**
 - e. The "Allowed Capacity" of this Agreement shall be the lower of (i) 5,000 kW, or (ii) the net nameplate capacity (net for export) of the Seller's Facility that is installed by the later of (a) the Commercial Operation Date or (b) In-Service Date.
6. Insurance carrier(s): **Marsh Risk & Insurance Services**
7. If the Seller is not the operator, the Seller shall provide a copy of the agreement between the Seller and the operator which requires the operator to operate the Seller's Facility and which establishes the scope of operations by the operator and the respective rights of the Seller and the operator with respect to the sale of electric energy from the Seller's Facility no later than 60 days after receipt of the Non-Appealable PUC Approval Order. The Seller shall provide a certified copy of a certificate warranting that the operator is a corporation, partnership

or limited liability company in good standing with the Hawaii Department of Commerce and Consumer Affairs.

8. If the Seller is the operator, the Seller shall provide a certified copy of a certificate warranting that the Seller is a corporation, partnership or limited liability company in good standing with the Hawaii Department of Commerce and Consumer Affairs.
9. The Seller, owner and operator shall provide the Company a description of its ownership structure.
10. Any certificate or description of ownership structure required under Appendix A shall be provided to the Company by the Effective Date. In the event of a change in ownership or identity of the Seller, owner or operator, such entity shall provide within 30 Days thereof, a certified copy of a new certificate and a revised ownership structure.
 - As of the Effective Date Kalaeloa Solar Two, LLC is a wholly owned subsidiary of SunPower Corporation, Systems.

EXHIBIT A-1

SELLER'S GOOD STANDING CERTIFICATES



Department of Commerce and Consumer Affairs

CERTIFICATE OF GOOD STANDING

I, the undersigned Interim Director of Commerce and Consumer Affairs of the State of Hawaii, do hereby certify that

KALAELOA SOLAR TWO, LLC

organized under the laws of Delaware

was duly registered to do business in Hawaii as a foreign limited liability company on 12/31/2010 , and that, as far as the records of this Department reveal, has complied with all of the provisions of Chapter 428, Hawaii Revised Statutes, regulating foreign limited liability companies.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Department of Commerce and Consumer Affairs, at Honolulu, Hawaii.

Dated: February 18, 2011

A handwritten signature in black ink.



Interim Director of Commerce and Consumer Affairs

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "KALAELOA SOLAR TWO, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF DECEMBER, A.D. 2010, AT 10:34 O'CLOCK P.M.

4914622 8100

101201727

You may verify this certificate online
at corp.delaware.gov/authver.shtml



Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8444806

DATE: 12-21-10

State of Delaware
Secretary of State
Division of Corporations
Delivered 10:46 PM 12/16/2010
FILED 10:34 PM 12/16/2010
SRV 101201727 - 4914622 FILE

CERTIFICATE OF FORMATION

OF

KALAELOA SOLAR TWO, LLC

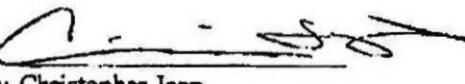
This Certificate of Formation of Kalaeloa Solar Two, LLC (the "Company"), dated as of December 13, 2010, is being duly executed and filed by Christopher Jaap, as an authorized person, to form a limited liability company under the Delaware Limited Liability Company Act (6 Del. C. §18-101, *et seq.*).

FIRST: The name of the limited liability company is Kalaeloa Solar Two, LLC.

SECOND: The address of the registered office of the Company in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801.

THIRD: The name and address of the registered agent for service of process on the Company in the State of Delaware is The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Formation as of the date first above written.

By: 
Name: Christopher Jaap
Title: Authorized Person

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "KALAELOA SOLAR TWO, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-FIRST DAY OF DECEMBER, A.D. 2010.

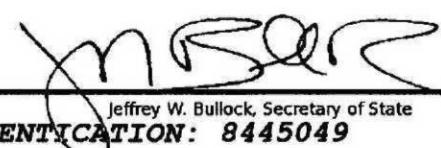
AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

4914622 8300

101217700

You may verify this certificate online
at corp.delaware.gov/authver.shtml




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8445049

DATE: 12-21-10

www.BusinessRegistrations.com
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FORM FLLC-1
7/2010

12/22/2004

FILED 12/31/2010 12:51 PM
Business Registration Division
DEPT. OF COMMERCE AND
CONSUMER AFFAIRS
State of Hawaii

STATE OF HAWAII
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
Business Registration Division
335 Merchant Street
Mailing Address: P.O. Box 40, Honolulu, Hawaii 96810
Phone No. (808) 586-2727



**APPLICATION FOR CERTIFICATE OF AUTHORITY
FOR FOREIGN LIMITED LIABILITY COMPANY**

(Section 405-1002, Hawaii Revised Statutes)

Consent

PLEASE TYPE OR PRINT LEGIBLY IN BLACK INK

The undersigned, in accordance with the provisions of the Hawaii Uniform Limited Liability Company Act, certify as follows:

1. The name of the limited liability company is:

Kalelio Solar Two, LLC

(Name must be exactly as stated on Certificate of Existence excluding spacing and punctuation)

2. Its state or country of organization is: Delaware

3. The mailing address of its principal office is:

a/c Karla Rogers, SunPower Corporation, 3939 N. First Street, San Jose, CA 95134

4. A list of the names and addresses of all members and their respective capital contributions are kept and will be kept at this principal office until this registration is cancelled.

5. The company shall have and continuously maintain in the State of Hawaii a registered agent who shall have a business address in this State. The agent may be an individual who resides in this State, a domestic entity or a foreign entity authorized to transact business in this State.

- a. The name (and state or country of incorporation, formation or organization, if applicable) of the company's registered agent in the State of Hawaii is:

48774D1 The Corporation Company, Inc.

Hawaii

(Name of Registered Agent)

(State or Country)

- b. The street address of the place of business of the person in State of Hawaii to which service of process and other notice and documents being served on or sent to the entity represented by it may be delivered to is:

900 Fort Street Mall, Suite 1800, Honolulu, HI 96813

6. The period of duration is (check one):

At-will

For a specified term to expire on: _____ (Year) _____ (Month) _____ (Year)

HDRS - 12/22/2010 CTS Form Date

FORM FLLC-1
7/2010

1. The company is (check one):

- a. Manager-managed, and the names and addresses of each manager is listed in paragraph "c".
- b. Member-managed, and the names and addresses of each member is listed in paragraph "c".
- c. List the names and addresses of each manager if the company is Manager-managed, or
List the names and addresses of each member if the company is Member-managed.

SunPower Corporation, Systems.

1414 Harbor Way South, Richmond, CA 94804

2. The members of the company (check one):

- Shall not be liable for the debts, obligations and liabilities of the company.
- Shall be liable for all debts, obligations and liabilities of the company.
- Shall be liable for specified debts, obligations and liabilities of the company as stated below, and have consented in writing to the adoption of this provision or to be bound by this provision.

3. Attached is an original certificate of existence or a record of similar import, authenticated by the proper government official having custody of the company records in the state or country under whose laws it is organized, and dated not more than sixty (60) days prior to the filing of this application. If the certificate is in a foreign language, a translation under oath of the translator is attached.

I/we certify under the penalties set forth in the Hawaii Uniform Limited Liability Company Act, that I/we have read the above statements, I/we are authorized to sign this application, and that the above statements are true and correct.

Signed this 14th day of December 2010

Christopher Jaap, Assistant Secretary.

SunPower Corporation, Systems, Sole Member
(Name, Title)

(Signature)

(Signature)

(Signature)

SEE INSTRUCTIONS PAGE. The application must be signed and certified by at least one manager of a manager-managed company or by at least one member of a member-managed company.

Form # 40-22-2010-11 Rev. 10/08

12-22-2010-204

FILED 12/31/2010 12:51 PM
Business Registration Division
DEPT. OF COMMERCE AND
CONSUMER AFFAIRS
State of Hawaii

Delaware

The First State

PAGE 1

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "KALAELOA SOLAR TWO, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-FIRST DAY OF DECEMBER, A.D. 2010.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

12/22/201020004

4914622 8300

101217700

You may verify this certificate online
at corp.delaware.gov/authver.shtml




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8445049

DATE: 12-21-10

Date: December 31, 2010

Department of Commerce & Consumer Affairs
Business Registration Division
P. O. Box 40
Honolulu, HI 96810

FILED 12/31/2010 12:51 PM
Business Registration Division
DEPT. OF COMMERCE AND
CONSUMER AFFAIRS
State of Hawaii

RE: KALAELOA SOLAR TWO, LLC

Ladies/Gentlemen:

There is no objection and hereby consent to the registration of the above referenced name. I am authorized to give this consent on behalf of Kalaeloa Solar One, LLC.

Very truly yours,

KALAELOA SOLAR ONE, LLC 71360C5
KSP Management, LLC, Manager

By: _____



(Signature)

Darren T. Kimura

(print name)

Its _____ **Manager** _____

APPENDIX B

FACILITY OWNED BY THE SELLER

1. Seller's Facility

- a. A preliminary single-line diagram, relay list, relay settings, and trip scheme of the Seller's Facility shall, after Seller has obtained prior written consent from the Company, be attached to this Agreement on the Effective Date. A final single-line drawing, relay list and trip scheme of the Seller's Facility shall, after having obtained prior written consent from the Company, be attached to this Agreement and made a part hereof on the Commercial Operation Date. An updated final single-line drawing, relay list, relay settings, and trip scheme showing any changes made after the Commercial Operation date shall be provided to the Company on the In-Service Date and be made part of the Agreement. The single-line diagrams shall expressly identify the Point of Interconnection of the Seller's Facility to the Company's System. The Seller agrees that no material changes or additions to the Seller's Facility as reflected in the final single-line diagram, relay list and trip scheme shall be made without the Seller first having obtained prior written consent from the Company. If any changes in or additions to Seller's Facility, records and operating procedures are required by the Company, the Company shall specify such changes or additions to the Seller in writing, and, except in the case of an emergency, Seller shall have the opportunity to review and comment upon any such changes or additions in advance.
- b. (1) The Seller shall furnish, install, operate and maintain the Seller's Facility including breakers, relays, switches, synchronizing equipment, monitoring equipment and control and protective devices designated by the Company as suitable for parallel operation of the Seller's Facility with the Company's System. Seller's Facility shall be accessible at all times to authorized Company personnel, including 24-hour vehicle access to Company-owned poles, switches, and overhead conductors.

(2) The Seller's Facility shall include, but not limited to:

- Seller's 46/34.5 KV substation ("Seller's Substation") is outlined below:
 - One (1) 72.5 KV, 1200A Continuous Current, 25 KAIC Circuit Breaker
 - 46 KV Arrestors
 - Potential Transformers (PTs) and Current Transformers (CTs)
 - 46 KV Metering-Accuracy class PTs and CTs, including spares for each type. The Seller shall provide the Company with accuracy test results for PTs and CTs. CTs and PTs shall be located on the utility side of the 46 KV circuit breaker 152-1.
 - 46 KV Isolation Switch
 - 4/5 MVA OA/OF, 46 KV GY: 34.5 KV GY 13.8 kV Delta Tertiary Main Transformer
 - 15 KVA, 34.5 KV:240/120 V Station Service Transformer
 - 38 KV Outdoor Metalclad Switchgear, consisting of a 38 KV, 600A continuous current, 16 KAIC vacuum circuit breaker, with a current and potential transformer section, and SEL-551 and SEL-387 intertie relays to provide intertie protection.
- Padmounted Fused Disconnect Switch
- Individual inverters with rated capacity of 100-135kVA. Inverter specifications to be determined and provided at a later date by Seller and will be subject to the reasonable approval of the Company.¹
- 17,784 SunPower high efficiency PV modules

¹ Seller will confirm that the dynamic model for the PV inverters previously provided for the IRS will apply for the final inverter selected. If the final inverter has a materially different dynamic model than that initially provided for the IRS, then the dynamics portion of the IRS will have to be revised to ensure that the performance standards at the Point of Interconnection are still met.

- GSU Transformers, ONAN, HV:34.5/19.9KV Grounded-Wye, LV:Wye, with further specifications to be determined and provided at a later date by Seller subject to reasonable approval by the Company.
- Control and monitoring facilities
- "lockable" cabinets or housings suitable for the installation of Interconnection Facilities owned by the Company located on Seller's premises
- relays and other protective devices

(3) A further description of Seller's Facility follows:

(a) The Company will install as part of the Company-owned Interconnection Facilities to be constructed by the Company and reimbursed by the Seller, a manually operated, lockable, disconnect switch located on a pole outside the Seller's Facility. The Point of Interconnection shall be at the Seller owned 46kV suspension insulator at the top of the Seller's deadend structure as indicated on the Single Line Diagram attached as Exhibit B-1. The Seller shall provide the 46kV suspension insulators and conductors from the Point of Interconnection to the Seller's Substation. Seller will install a 46 kV disconnect switch and all other items for the Seller's Substation (relaying, control power transformers, high voltage circuit breaker). Bus connection will be made to a manually and automatically (via protective relays) operated high-voltage circuit breaker. The high-voltage circuit breaker will be fitted with bushing style current transformers for metering and relaying. From the high-voltage circuit breaker, another bus connection with appropriate surge protection will be made to the Seller's 46-34.5 KV main transformer.

(b) The Seller will provide revenue metering PTs and CTs (as specified by the Company) and all conduits and accessories necessary for the Company to install the Company-supplied bi-directional revenue meters. The revenue meters shall be installed indoors in a metering enclosure pursuant to specifications provided by the Company. The Seller will provide AC source

lines as specified later by the Company and an analog telephone line for the Company-owned meters. The Seller shall also provide an acceptable outdoor junction box on the secondary side of the PTs and CTs before the meters.

(c) The Seller's Substation will have a lockable cabinet for the Seller's Substation relaying equipment. The relaying equipment shall be acceptable to the Company. At a minimum the relaying equipment will provide over and under frequency (81) negative phase sequence (46), under voltage (27), over voltage (59), and ground over voltage (59G), and over current functions (50/51). The protective relays will operate an Electro Switch lockout relay, which in turn will trip the main circuit breaker. The Company shall also have the ability to remotely trip the interconnection circuit breaker(s) in the event a system emergency or abnormal operation of the Seller's equipment.

(d) The relay protection system will be configured to provide overpower protection to enable the Seller's Facility to comply with the Allowed Capacity limitation.

(e) Company specified equipment will also provide all line electrical measurements to the Company SCADA system. The Seller shall provide the following types of input data/analog SCADA points to the Company; provided, however, the Company may specify additional input data/analog requirements at the time of design of Company-owned Interconnection Facilities:

- (i) Raw count (DNP 3.0 protocol) for analog points. Analog points having directional values (e.g. MW, MVAR, current) shall have the positive direction defined as flowing from the Seller's Facility to the Company's System.
- (ii) Hard-wired dry contact pairs for status points.
- (iii) Form "C" accumulator points for MWH metering.

(f) The Seller shall be able to receive the following types of input data/analog SCADA points from the Company; provided, however, the Company may specify additional input data/analog requirements at

EXECUTION VERSION

the time of design of Company-owned Interconnection Facilities:

(i) Raw count (DNP 3.0 protocol) for analog points.

(g) Seller shall accept hard-wired control SCADA points from the Company.

(h) A secured air conditioned area in Seller's control building will be provided by Seller for the Company and Seller relays, Direct Transfer Trip (DTT) equipment, RTU, communication equipment, and revenue meters. Seller shall provide 3 rack spaces minimum (for DTT, communication, multiplexer equipment) and provide a 8' high, 4' wide, and $\frac{3}{4}$ " thick communication wall board painted with 2 coats of white, fire retardant paint. The Seller shall provide at a minimum a 90" high x 24" wide x 36" deep space with adequate working clearances for a Company-owned SM2 RTU unit. The Seller shall provide 8' high x 2.5' wide x 2' deep space with adequate working clearances for a Company-owned relay panel housing lockout relays and associated equipment. (This space should be located near the DTT equipment.) The Seller shall provide acceptable demarcation cabinets where the Seller and the Company wiring will connect/interface, including but not limited to, an RTU junction box (Company device to Company device) and a Seller interface cabinet (Company/Seller device to Company/Seller device). The RTU junction box and Seller interface cabinet should be in the same room near the RTU cabinet. Within the building, the Seller will provide cables and wireways/cable trays between both Company-only owned equipment, and Company and Seller-owned equipment. The Company shall have access at all times to Company's equipment within Seller's control building.

(i) Seller shall install, own, and maintain a reliable 48VDC source and 48VDC distribution panel to power the Company's equipment (DTT, SCADA, communication) located in Seller's Facility for a minimum 12-hour backup period. The 48VDC source can be from a 48VDC battery and charger system, or 125VDC battery and charger system with 125-48VDC converter. Company prefers a 48VDC battery and charger system. The converter shall have two independent converters internally configured as a fault-tolerant/redundant

unit, and may be operated from a single 125VDC source. The converter manufacturer/model number shall be approved by Company. Seller shall own and maintain a spare converter at the Site.

(j) Seller will provide 120 VAC source lines as specified later by Company.

(k) The primary source for station service will be Seller's 34.5 KV:240/120 V station service transformer. Back up power for the Company-owned equipment will be the Seller's 48VDC battery system with 12-hour (minimum) backup period.

(l) Seller will provide Company 24-hour access to Seller's Facility for operation and maintenance purposes of Company-owned Interconnection Facilities.

(m) If the Seller adds, deletes and/or changes any of its equipment, or changes its design in a manner that would change the characteristics of the equipment and specifications used in the IRS, Seller will be required to obtain Company's prior written approval. If an analysis to revise parts of the IRS is required, Seller will be responsible for the cost of revising those parts of the IRS, and modifying and paying for the cost of the modifications to Seller's Facility based on the revisions to the IRS.

1. Seller shall also provide a Curtailment Control Interface with the ability to interface with the Company's RTU to incrementally curtail and restore individual inverters. The RTU interface shall also include total Facility net MW, net mvar and net power factor, available active power, transformer tap positions, on/off status of reactive power devices, circuit breaker status, Frequency Response System mode, and Frequency response System status, and other telemetered, status and control functions as identified by the Company.

c. The Seller shall provide to the Company for its review the design drawings, Bill of Material, relay settings and fuse selection for the Seller's Facility and the Company shall have the right, but not the obligation, to specify the type of electrical equipment, the interconnection wiring, the type of protective

relaying equipment, including, but not limited to, the control circuits connected to it and the disconnecting devices, and the settings that affect the reliability and safety of operation of the Company's System interconnected with the Seller's Facility. Seller shall provide the relay settings, fuse selection, and AC/DC Schematic Trip Scheme (part of design drawings) for Seller's Facility to Company at least sixty (60) Days prior to the Acceptance Test. The Company, at its option, may, with reasonable frequency, witness the Seller's operation of control, synchronizing, and protection schemes and shall have the right to periodically re-specify the settings. The Seller shall utilize relay settings prescribed by the Company, which may be changed over time as the Company's System's requirements change.

- d. The Seller shall provide a manually operated disconnect device which provides a visible break to separate the Seller's Facility from the Company's System. Such disconnect device shall be lockable in the OPEN position and be readily accessible to Company personnel at all times.
- e. The Seller shall furnish, install and maintain in accordance with the Company's requirements all conductors, service switches, fuses, meter sockets, meter (includes revenue metering structure, CT(s) and PT(s) and accessories) and instrument transformer housing and mountings, switchboard meter test buses, meter panels and similar devices required for service connections and meter installations on the Site.
- f. The Seller shall maintain the Seller's Interconnection Facilities in accordance with the following maintenance plan:
 - Seller's 46/34.5 kV Main Step Up transformer and 38kV metalclad switchgear: Visual inspection and oil sampling - Annually; Complete testing, including: Doble, TTR and other routine tests - Every five (5) years.
 - Seller's 46 kV and 38 kV circuit breakers: Visual Inspection and open/close operation - Annually.
 - Relay protection equipment: Every five (5) years.

- Other equipment as identified: Visual Inspection - Annually; Complete testing - As needed.

The Seller shall furnish to the Company a copy of records documenting such maintenance, within thirty (30) Days of completion of such maintenance work.

- g. The Seller shall provide and maintain in good working order all equipment, computers and software (the "Curtailment Control Interface") necessary to initiate, control the level of, and remove curtailments when required under Section 2.e of this Appendix B. The implementation of the Curtailment Control Interface will allow the Company's System Operator to initiate the curtailment, vary the level of curtailment, and remove the curtailment remotely from the Company's System Operations Control Center through control signals from the Company's SCADA and EMS systems. The Company must review and provide prior written approval of the design for the Curtailment Control Interface to ensure compatibility with the Company's SCADA and EMS systems. If Seller materially changes the approved design, such changes will also require Company's review and prior written approval. The Curtailment Control Interface shall include, but not be limited to, a demarcation cabinet, ancillary equipment and software necessary for Seller to connect to the Company's RTU, located in the Company's portion of Seller's Substation which shall provide the control signals to the Seller's Facility and send feedback status to the Company's System Operations Control Center. The types of controls presently supported by the Company's SCADA and EMS systems are fixed-length digital output controls, variable length digital output (pulse-width output) controls, and analog output (setpoint) controls. The control signal type shall be determined by Company during the detailed interconnection design. The Curtailment Control Interface shall also include provision for a feedback point from the Seller's Facility indicating when curtailment is in effect, the instantaneous MW output of Seller's Facility, and the net instantaneous MW output of Seller's Facility at the Point of Interconnection. Seller shall provide an analog input to the RTU for the total net MW output at the Point of Interconnection. When a curtailment lower control signal is received by the Seller's Facility through the Curtailment Control Interface,

the corresponding action (e.g., decrease in Actual Output) shall be initiated without delay. The Curtailment Control Interface shall provide for separate curtailment control and the indication of curtailment for the individual generating units, and for Seller's Facility as a whole; provided, however, that if such separate control features are not provided by Seller, whether temporarily or throughout the term of this Agreement, then, notwithstanding Section 2.e of this Appendix B, Company shall have the right to curtail all of Seller's Facility during those periods that such separate control features are not provided. The Curtailment Control Interface shall be capable of receiving from the Company a set point curtailment limit of any level between the maximum output of the Seller's Facility and zero. Provided that the curtailment limit set by the Company is below the present output of the Seller's Facility, the Actual Output will be ramped from the present output to the curtailment limit at a ramp rate not to exceed the limits in Section 3.c of this Appendix B. The ramp rate limits specified in Section 3.c of this Appendix B shall not be exceeded when the Actual Output is curtailed or uncurtailed. The requirements of the Curtailment Control Interface may be modified as mutually agreed upon in writing by the parties.

- h. Control System Acceptance Test Procedures. Following the successful completion of the Acceptance Test, the Control System Acceptance Test(s) shall be conducted on each generator as that generator is designated by Seller to be ready to generate and deliver energy to the Company, before that generator is included in the Seller's Facility. The first Control System Acceptance Test must be successfully completed before the Commercial Operation Date. No later than 30 Days prior to conducting the Control System Acceptance Test, Company and Seller shall agree on a written protocol setting out the detailed procedure and criteria for passing the Control System Acceptance Test. Within 15 Business Days of successful completion of the Control System Acceptance Test, Company shall notify Seller in writing that the Control System Acceptance Test(s) has been passed and the date upon which such Control System Acceptance Test(s) was passed.

2. Operating Procedures

- a. The Company may require periodic reviews of the Seller's Facility, maintenance records, available operating procedures and policies, and relay settings, and Seller shall implement changes the Company deems necessary for parallel operation or to protect the Company's System from damages resulting from the parallel operation of the Seller's Facility with the Company's System.
- b. The Seller must separate from the Company's System whenever requested to do so by the Company's System Operator pursuant to Section 8 (Continuity of Service) and Section 9 (Personnel and System Safety) of the Agreement.
- c. Logs shall be kept by the Seller for information on unit availability including reasons for planned and forced outages; circuit breaker trip operations, relay operations, including target initiation and other unusual events. The Company shall have the right to review these logs, especially in analyzing system disturbances. Seller shall maintain such records for a period of not less than thirty-six (36) months.
- d. Under no circumstances shall the Seller, when separated from the Company's System for any reason, reclose into the Company's System without first obtaining specific approval to do so from the Company's System Operator.
- e. (1) Pursuant to Section 8 (Continuity of Service) and Section 9 (Personnel and System Safety) of the Agreement, the Company may at times have limited ability to integrate energy produced by the Seller into the Company's System for engineering and/or operating reasons and may be required to curtail energy deliveries by the Seller. When a curtailment control signal is received by the Seller's Facility through the Curtailment Control Interface, the corresponding action (e.g., decrease in Actual Output) shall be initiated without delay. The Company shall send curtailment control signals to the Seller's Facility during a one minute period, which corresponds to a ramp rate not to exceed Section 3.c of Appendix B. Unless agreed to in writing by both parties, the curtailment signals will consist of transmitted set point. Further curtailment may be implemented if

conditions warrant and the Company's System Operator deems it necessary. The Seller shall not override the Company's curtailment. As conditions warrant, the Company shall end or reduce the curtailment when it is reasonably determined that the reason for the curtailment is no longer in existence. The Company's System Operator shall end or reduce the curtailment by sending raise control signals to the Seller's Facility through the Curtailment Control Interface. Seller may request that Seller's Facility be restored no sooner than one hour after the Company has curtailed the Seller's Facility.

(2) When the Company determines that curtailment of energy becomes necessary for reasons other than those directly attributable to the Seller's Facility, curtailments shall be made to the extent possible in reverse chronological order of the chronological seniority dates determined by the Company for the contracts, with deliveries under the contract with the most recent chronological seniority date being the first curtailed, and deliveries under the contract with the earliest chronological seniority date being the last curtailed. The chronological seniority date shall be the PUC Approval Order Date of the Non-appealable PUC Approval Order. If the Seller does not achieve a Commercial Operation Date on or before twelve (12) months following the earlier of the Waiver Agreement Date or the satisfactory Non-appealable PUC Approval Order Date, the chronological seniority date for curtailment will change by adding one day for each day the Commercial Operation Date is later than twelve (12) months after the earlier of the Waiver Agreement Date or the Non-Appealable PUC Approval Order Date. When the Company determines that curtailment of energy becomes necessary for engineering and/or operating reasons that are directly attributable to the Seller's Facility, reverse chronological curtailment order may not apply. The Company shall not be liable to the Seller for any such curtailments unless they were in violation of Section 8 (Continuity of Service) or Section 9 (Personnel and System Safety) of the Agreement. Seller shall not override Company's curtailment.

(3) If either the (x) Company's SCADA and EMS systems or (y) Seller's Curtailment Control Interface system is unavailable, due to loss of communication link, RTU failure, or other event resulting in the loss of the

remote control by the Company, provision must be made by Seller to be able to institute, within 30 minutes or such other period as Company accepts in writing, local curtailment raise and lower control, open breaker control, and change in power factor target via the local controls upon verbal request by Company's System Operator.

- f. Upon receipt of the Direct Transfer Trip (DTT) signal from Company, provisions must be made to trip and block close Seller's breaker 152-1 via Company's lockout relay and Seller's lockout relay at Seller's Facility. If the communications signal or communications interface for the DTT is unavailable for more than 6 seconds, provisions must be made to trip and block close Seller's breaker 152-1 via Company's lockout relay at Seller's Facility.

3. Performance Standards

a. Voltage regulation

The Seller shall operate at a constant power factor at the Point of Interconnection. The Company's System Operator shall be able to specify the power factor through the Company's SCADA and EMS systems, within the power factor range specified in Section 3.b.(1) below, at which electric energy is to be delivered by the Seller to the Company and the Seller shall deliver the electric energy at the Point of Interconnection at that specified power factor. The design for the voltage regulation will be reviewed and approved by the Company prior to the Commercial Operation Date.

b. Reactive Amount

- (1) The Seller shall delivery electric energy to the Company at power factors ranging from 95% leading at the Point of Interconnection (Seller receiving reactive power from the Company while delivering real power to the Company) to 95% lagging at the Point of Interconnection (Seller delivering reactive power to the Company while delivering real power to the Company). Seller shall use Good Engineering and Operating Practices to take reasonable measures to provide reactive power if Seller's Facility is operating at less than 20 percent of its Allowed Capacity. The Company will not be obligated to purchase reactive power from

the Seller. The Seller's Facility shall contain equipment able to continuously and actively control the output of reactive power, and to react to system fluctuations.

- (2) If the Seller's Facility does not operate in accordance with Section 3.b.(1) of this Appendix B, the Company may disconnect all or a part of the Seller's Facility from the Company's System until the Seller corrects its operation (such as by installing capacitors at the Seller's expense).

c. Ramp Rate

The Seller shall ensure that the ramp rate of the Seller's Facility are less than the following limits for all conditions including start up, normal operations, and shut down for the following periods, to the extent technically feasible using Good Engineering and Operating Practices. Note that time periods are subject to seasonal variations and typical times of day/night are provided for general planning purposes only.

- Maximum Ramp Rate Upward of 2.0 MW/minute for all periods except during Early Morning Low-Load Periods (typically Midnight to 4:00 am) where Maximum Ramp Rate Upward is 1 MW/minute.
- Maximum Ramp Rate Downward of 2.0 MW/minute for all periods except during Evening Periods (typically 4:00 pm to 8:00 pm) where Maximum Ramp Rate Downward is 1 MW/minute.

d. Power Fluctuation Rate

The Seller shall ensure that the power fluctuation rate of the Seller's Facility is less than the following limit for all conditions including start up, normal operations, and shut down:

Instantaneous: 1 megawatt/2-second scan

Subminute Average: an average of 0.3 megawatt/2-second scan for any 60-second period

In order for the Seller's Facility to conform to these specifications, it may be necessary for the Company to require that Seller may start up only one generating unit at a time.

e. Undervoltage Ride-Through

Either the undervoltage relays for the Seller's Facility shall be set, or a compensation device external to a generator shall be installed at the Seller's Facility, so that the Seller's Facility will meet the following undervoltage ride-through requirements during an undervoltage disturbance affecting one or more of the three voltage phases ("V" is the voltage of any three voltage phases at the Point of Interconnection):

$V \geq 0.80 \text{ pu}$

Seller's Facility remains connected to the Company's System.

$0.10 \text{ pu} \leq V < 0.80 \text{ pu}$

Seller's Facility may initiate disconnection from the Company's System if the voltage remains in this range for more than 2 seconds.

$0.00 \text{ pu} \leq V < 0.10 \text{ pu}$

Seller's Facility may initiate disconnection from the Company's System if voltage remains in this range for more than 200 milliseconds.

The Seller shall have sufficient capacity to fulfill the above mentioned requirements to ride-through the following sequences or combinations thereof:

- Normally cleared 138 kV transmission faults cleared after 5 cycles with one reclose attempt, cleared in 5 cycles, 30 cycles after the initial fault was cleared. The voltage at the point of interconnection will recover above the 0.80 p.u. level for the 30 cycles between the initial clearing time and the reclosing time.

- Normally cleared 46kV subtransmission faults cleared in 36 cycles with one reclose attempt, cleared in 36 cycles, 30 cycles after the initial fault was cleared. The voltage at the point of interconnection will recover above the 0.80 p.u. level for the 23 cycles between the initial clearing time and the reclosing time.

f. Over voltage ride-through

The overvoltage protection equipment at the Seller's Facility shall be set so that the Seller's Facility will meet the following overvoltage ride-through requirements during an overvoltage disturbance affecting one or more of the three voltage phases ("V" is the voltage of any of the three voltage phases at the point of interconnection):

$1.00 \text{ pu} \leq V < 1.10 \text{ pu}$	Seller's Facility remains connected to the Company's System.
$1.10 \text{ pu} \leq V < 1.15 \text{ pu}$	Seller's Facility may initiate disconnection from the Company's System if voltage remains in this range for more than 3 seconds.
$1.15 \text{ pu} \leq V$	Seller's Facility may initiate disconnection from the Company's System if voltage remains in this range for more time than allowed by equipment manufacturer's specifications.

g. (RESERVED)

h. Fault Ride Through

For transmission and sub-transmission faults, if voltage dips at the Point of Interconnection stay within the limits of the under voltage ride-through requirements in Section 3.e (Undervoltage Ride Through) above, upon clearing of the fault, the Seller shall as soon as practical, but no longer than 1 second after the voltage recovers to 0.80 p.u.,

provide at least 90% of the active and reactive power output at the Point of Interconnection immediately before the fault within the parameters of available solar insolation without regard to the ramp rate limits specified in Section 3.c (Ramp Rates) above. This does not apply if the Seller's Facility was operating at less than 5% of its rated MW capacity.

i. Underfrequency ride-through

The underfrequency relays for the Seller's Facility shall be set so that the Seller's Facility will meet the following underfrequency ride-through requirements during an underfrequency disturbance ("f" is the Company's System frequency at the Point of Interconnection):

$f \geq 57.0$ Hz	Seller's Facility remains connected to the Company's System.
56.0 Hz $\leq f < 57.0$ Hz	Seller's Facility may initiate disconnection from the Company's System if frequency remains in this range for more than 6 seconds.
$f < 56.0$ Hz	Seller's Facility may initiate disconnection from the Company's System immediately.

j. Overfrequency ride-through

The overfrequency relays for the Seller's Facility shall be set so that the Seller's Facility will meet the following overfrequency ride-through requirements during an overfrequency disturbance ("f" is the Company's System frequency at the Point of Interconnection):

$f \leq 61.5$ Hz	Seller's Facility remains connected to the Company's System.
61.5 Hz $< f \leq 63.0$ Hz	Seller's Facility may initiate disconnection from the Company's System if

frequency remains in this range for more than 6 seconds.

$f > 63.0 \text{ Hz}$

Seller's Facility may initiate disconnection from the Company's System immediately.

k. Voltage Flicker

Any voltage flicker at the Point of Interconnection caused by the Seller's Facility shall not exceed the limits defined by the "Borderline of Visibility Curve" identified in IEEE Standard 519-1992, or latest version "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems".

l. Harmonics

Harmonic distortion at the Point of Interconnection caused by the Seller's Facility shall not exceed the limits stated in the following:

- IEEE Standard 519-1992 ("IEEE Recommended Practice and Requirements for Harmonic Control in Electric Power Systems")
- IEEE 1547-2008 ("IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems")
- Latest version of either of these documents.

The Seller shall be responsible for the installation of any necessary controls or hardware to limit the voltage and current harmonics generated from the Seller's Facility to defined levels.

m. (RESERVED)

n. Transient Over Voltages

The IRS has showed that unacceptable over voltage conditions initiated by the Seller's Facility could occur following a breaker trip at the Company's Kahe substation. Within 3 months of the PUC Submittal Date, Seller shall provide to Company data verifying the magnitude and duration of these over voltages and confirming that the Company's existing lightning arresters are adequately rated to withstand the

expected over voltages based on the arrester's temporary over voltage curves. Seller shall demonstrate during the Acceptance Test that the over voltage performance of the Seller's Facility is reasonably consistent with the data provided by the Seller so that the Company's existing lightning arresters will be able to withstand the expected over voltages. Company and Seller shall agree on a written protocol setting out the detailed over voltage test procedure and criteria for passing the Acceptance Test. Seller must timely correct any deficiencies identified during the Acceptance Test.

4. Maintenance of Sellers Interconnection Facilities

- a. Seller must address any Disconnection (as defined below) according to the requirements of this Appendix B, Section 4. For this purpose, a Disconnection is a disconnection from the Company's System of at least 1.7 MW from Seller's Facility over a "rolling 120-second period", if such disconnection is due to a defect in or a failure of the Seller-owned Interconnection Facilities. A "rolling 120-second period" means a period that is comprised of 120 seconds and such rolling period will change as each new one (1) second elapses. With the elapse of each new one (1) second, the newest one (1) second would be added to the 120-second period, and the oldest one (1) second would no longer be included in the rolling 120-second period.
- b. For every disconnection from the Company's System of at least 1.7 MW from Seller's Facility over a rolling 120-second period ("Disconnection Event"), the Seller shall investigate the cause of the Disconnection Event, and determine if it is a Disconnection as defined in Appendix B, Section 4.a. Within three (3) Business Days of the Disconnection Event, the Seller shall provide, in writing to the Company, an incident report that summarizes the sequence of events and probable cause of the Disconnection Event, and states whether the Seller believes the Disconnection Event is a Disconnection.
- c. Within forty-five (45) Days of a Disconnection, the Seller shall provide, in writing to the Company, the Seller's findings, data relied upon for such

findings, and proposed actions to prevent reoccurrence of a Disconnection ("Proposed Actions"). The Company may assist the Seller in determining the causes of and recommendations to remedy or prevent a Disconnection ("Company's Recommendations"). The Seller shall implement such Proposed Actions (as modified to incorporate the Company's Recommendations, if any) and the Company's Recommendations (if any) in accordance with the time period agreed to by the parties.

- d. In the event the Seller and the Company disagree as to (1) whether a Disconnection Event occurred, (2) the sequence of events and/or probable cause of the Disconnection Event, (3) whether the Disconnection Event is a Disconnection, (4) the Proposed Actions, (5) the Company's Recommendations, and/or (6) the time period to implement the Proposed Actions and/or the Company's Recommendations, then the parties shall follow the procedure set forth in Appendix B, Section 5.
- e. Upon the fourth (4th) Disconnection (and each subsequent Disconnection) within any Contract Year, the parties shall follow the procedures set forth in Appendix B, Section 4.b and Section 4.c above, to the extent applicable. If after following the procedures set forth in this Appendix B, Section 4, the Seller and the Company continue to have a disagreement as to (1) the probable cause of the Disconnection, (2) the Proposed Actions, (3) the Company's Recommendations, and/or (4) the time period to implement the Proposed Actions and/or the Company's Recommendations, then the parties shall commission a study to be performed by a qualified independent thirty-party consultant ("Qualified Consultant") chosen from the Qualified Independent Third-Party Consultants List ("Consultants List") attached to the Agreement as Appendix B-2. Such study shall review the design of, review the operating and maintenance procedures dealing with, recommend modifications to, and determine the type of maintenance that should be performed on the Seller-owned Interconnection Facilities ("Study"). The Seller and the Company shall each pay for one-half of the total cost of the Study. The Study shall be completed within ninety (90) calendar Days from such fourth Disconnection (and each subsequent Disconnection) within any Contract Year, unless

otherwise agreed to in writing by the Seller and the Company. The Qualified Consultant shall send the Study to the Company and the Seller. The Seller (and/or its third-party consultants and contractors), at the Seller's expense, shall change the design of, change the operating and maintenance procedures dealing with, implement modifications to, and/or perform the maintenance on the Seller-owned Interconnection Facilities recommended by the Study. Such design changes, operating and maintenance procedure changes, modifications, and/or maintenance shall be completed no later than forty-five (45) calendar Days from the day the completed Study is issued by the Qualified Consultant, unless otherwise agreed to in writing by the Company. In the event the time requirement for the (a) commissioning of the Study, (b) completion of the Study, or (c) completion of the design change, operating and maintenance procedure change, modifications, and/or maintenance recommended by the Study is not achieved, the Company may limit the total Allowed Capacity to a level that maintains reliable operations in accordance with Good Engineering and Operating Practices. Nothing in this provision shall affect the Company's right to curtail Seller's Facility as provided for in this Agreement.

- f. The Consultants List attached hereto as Appendix B-2 contains the names of engineering firms which both parties agree are fully qualified to perform the Study. At any time, except when a Study is being conducted, either party may remove a particular consultant from the Consultants List by giving written notice of such removal to the other party. However, neither party may remove a name or names from the Consultants List without approval of the other party if such removal would leave the list without any names. Intended deletions shall be effective upon receipt of notice by the other party, provided that such deletions do not leave the Consultants List without any names. Proposed additions to the Consultants List shall automatically become effective thirty (30) Days after notice is received by the other party unless written objection is made by such other party within said thirty (30) Day period. By mutual agreement between the parties, a new name or names may be added to the Consultants List at any time.

5. Expedited Dispute Resolution

If there is a disagreement between the Company and the Seller regarding (a) the Seller's compliance with the Performance Standards set forth in Section 3 of this Appendix B, and/or (b) Section 4 of this Appendix B such as (i) whether a Disconnection Event occurred, (ii) the sequence of events and/or probable cause of the Disconnection Event, (iii) whether the Disconnection Event is a Disconnection, (iv) the Proposed Actions, (v) the Company's Recommendations, and (vi) the time period to implement the Proposed Actions and/or the Company's Recommendations, then authorized representatives from the Company and the Seller, having full authority to settle the disagreement, shall meet in Hawaii (or by telephone conference) and attempt in good faith to settle the disagreement. Unless otherwise agreed in writing by the parties, the parties shall devote no more than five (5) Business Days to settle the disagreement in good faith. In the event the parties are unable to settle the disagreement after the expiration of the time period, then either party may pursue the dispute resolution procedure set forth in Section 28 (Dispute Resolution) of this Agreement.

6. Modeling

The Seller shall provide all of the power flow, short circuit, and transient stability models for the planned project necessary for normal planning and operational studies. Short circuit and transient stability models should be provided and updated by the Seller for the current and future transient modeling applications used by the Company. The models should allow the Company to conduct, both now and in the future, normal line fault and trip simulations or unit trip simulations to determine the performance of the Company's System, for events near and far from the Seller's Facility. The Seller shall validate or update the modeling data as requested by the Company for the duration that the Seller's Facility remains interconnected to the Company's System.

7. Testing Requirements

The Sellers shall coordinate periodic testing with the Company to test the Seller's Facility to ensure the

performance specified within the Agreement.

Immediately following the initial connection of the Seller's Facility, the Seller shall test the voltage regulation capability, reactive power response, reactive power capability, harmonic and flicker limits, and any other testing as determined by the Company.

8. Forecasting

The Seller shall provide a power forecast in accordance with the terms of Section 6 (Forecasting) of this Agreement.

9. Technology Specific Requirements:

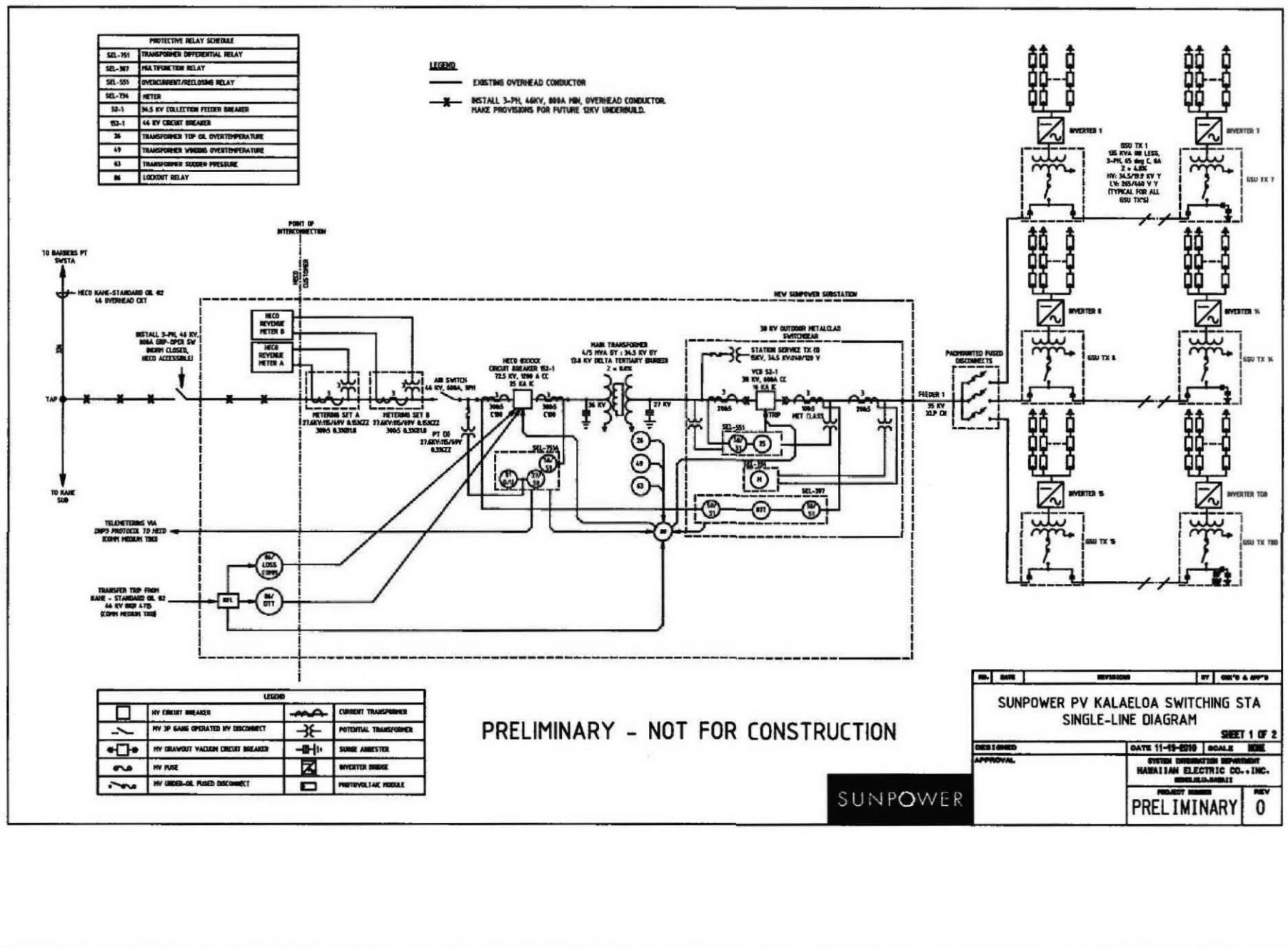
a. Inverter Systems:

(1) Direct current generators and non-power (i.e. other than 60 Hertz) alternating current generators can only be installed in parallel with the Company's System using a non-islanding synchronous inverter. The design shall comply with the requirements of IEEE Std 1547-2003 (or latest version) such that the synchronous inverter will automatically disconnect upon an interruption on the Company's System, except as described in Section 3.e. (Undervoltage ride-through), Section 3.f. (Overvoltage ride-through), Section 3.i. (Underfrequency ride-through), and Section 3.j. (Overfrequency ride-through) of this Appendix B.

(2) Self-commutated inverters of the utility-interactive type shall synchronize to the Company. Inverters capable of stand-alone operation shall not attempt to control the voltage while operating in parallel with the Company's System. Line-commutated, thyristor-based inverters are not recommended and will require additional technical study 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).

EXHIBIT B-1

SINGLE-LINE DRAWING



SunPower PV Kalaeloa Notes:

1. Customer will only be allowed to parallel with the HECO system when served from the Kaha-Standard Oil #2 46kV line, and the line is in the normal operating configuration.
2. Upon receipt of direct transfer trip (DTT) signal from Kaha Sub, trip and block close Customer's breaker 152-1 via HECO-owned SCADA resettable lockout relay and Customer's lockout relay. HECO's DTT lockout ("86/DTT") relay will have the associated contacts for the following:
 - a. Breaker 152-1 trip coil #1
 - b. Breaker 152-1 trip coil #2
 - c. Breaker 152-1 block close
 - d. Alarm/Trip to customer (optional - per Customer request)
 - e. Status of lockout relay
3. Upon communication channel failure (DTT) longer than 6 seconds, trip and block close Customer's breaker 152-1 via HECO-owned SCADA resettable lockout relay. HECO's Loss of Communication lockout ("86/LOSS COMM") relay will have the associated contacts for the following:
 - a. Breaker 152-1 trip coil #1
 - b. Breaker 152-1 trip coil #2
 - c. Breaker 152-1 block close
 - d. Alarm/Trip to customer (optional - per Customer request)
 - e. Status of lockout relay
4. Manual closing of Customer's breaker 152-1 shall be allowed for hot line (Kaha-Standard Oil #2 line-side) and dead bus (Customer-side of bkr 152-1). There shall be no auto reclosing on Customer's breaker 152-1.
5. Customer's breaker 52-1 to be tripped if breaker 152-1 is open or main transformer is de-energized. Closing of breaker 52-1 is permitted only when breaker 152-1 is closed and the main transformer is energized.
6. HECO shall have SCADA trip control over Customer's breaker 152-1.
7. Customer to provide raw count (DNP 3.0) for analog points to HECO. Customer to provide hardwired dry contact pairs for status points to HECO, and accept hardwired control points from HECO.
8. HECO load dispatch shall be able to issue the following to the Customer via DNP 3.0 interface:
 - a. A set point curtailment limit of any level between the maximum output of the Customer's facility and zero (see note 9d below).
 - b. Power factor set point control signals (see note 9e below).
9. The following signals provided by the Customer shall be telemetered to the HECO load dispatch office:
 - a. Breaker status and trip control of Customer's 46kV breaker 152-1
 - b. 46kV line amps (B-ph), 46kV voltage (A-B ph), MW, MVAR, and power factor at point of interconnection
 - c. Received kwh accumulator, sent kwh accumulator, received kvarh accumulator, sent kvarh accumulator
 - d. Status indicating when curtailment is in effect and the latest received curtailment set point.
 - e. Latest received power factor set point.
10. The following initiated an alarm to the HECO load dispatch office separately. (The Customer shall provide contact phone numbers for HECO Load Dispatch to call in the event alarms b. & c. below occur. Customer must notify HECO of any changes in the provided phone numbers):
 - a. DTT and RTU Loss of Communication via Kaha
 - b. 48VDC or 125VDC Charger Trouble
 - c. Trouble alarm for 48VDC source, if using a 125VDC-48VDC converter ("Sunpower DC-DC Converter/Alarm").
 - d. Violation of Maximum Ramp Rate Upward or Downward (Performance Standard)
 - e. Violation of Power Fluctuation Rate (Performance Standard)
 - f. Status and control of HECO-owned SCADA resettable lockout relays
11. Customer to provide air conditioned space in the customer's control building for HECO's RTU, communication equipment, and HECO-owned lockout relays. (HECO needs 24-hour access to RTU, comm. equipment, and HECO-owned lockout relays.)
12. Customer to provide 3 rack spaces minimum (DTT, Fiber Optic, Multiplexor) and provide 8' high, 4' wide, 3/4" thick backboard painted with 2 coats of white, fire retardant paint. (HECO needs 24-hour access to equipment).
13. Customer to provide a 90"H x 36"W x 24"D space minimum with adequate working clearances for an SM2 RTU unit. (HECO needs 24-hour access to equipment).
14. Customer shall provide 120VAC for HECO's RTU and communication equipment.

15. The Customer shall provide a reliable 48VDC source. The Customer shall install own, and maintain a 48VDC or a 125VDC Battery and Charger System. Customer's battery system shall be capable of powering the Company's equipment (DTT, SCADA, communication) located in the Seller's Facility, for a minimum 12-hour backup period. Customer shall also install, own, and maintain a 48VDC distribution panel.
 - a. A 48VDC battery and charger is preferred.
 - b. If the Customer uses a 125VDC battery and charger, the Customer shall provide the 48VDC source through a 125VDC-48VDC converter with internal dual/redundant design. The converter shall have two independent converters internally configured as a fault-tolerant/redundant unit. This dual converter unit may be operated from a single 125VDC source. The converter manufacturer/model number shall be approved by HECO. The Customer shall also have a spare converter unit stored at the site. (The Customer shall own and maintain the converter and spare converter).
16. Customer shall provide an RTU junction box (HECO device to HECO device) and a Customer interface cabinet (HECO/Customer device to Customer/HECO device) for wiring. (HECO needs 24-hour access to RTU junction box). The RTU junction box and interface cabinet should be in the same room/near the RTU cabinet.
17. Customer shall provide cable trench/tray system between panels, racks, cabinets, and communication wallboard.
18. Secure and reliable communication is required for the following:
 - a. Transfer trip from Kaha substation to Customer's substation.
 - b. SCADA from Customer's substation.
 - c. Revenue metering for power export and consumption readings.
 - d. Power quality readings.
19. Customer shall own and maintain the revenue metering CTs and PTs and must also provide for maintenance spares. Customer shall provide three (3) current transformers (CTs) and three (3) potential transformers (PTs) for each interconnection node. CT size should be based on gross MW (normal operations): 5.0MW
20. Bi-directional metering required.
21. The CT/PT units shall meet ANSI 0.15% accuracy class or better for high accuracy metering applications and may be either stand-alone or combination units. However these units must be dedicated exclusively for HECO's use to ensure the integrity and accuracy of meter registration. Customer may not tap any additional secondary windings on these units for their SCADA applications.
22. Customer shall provide all junction boxes rated NEMA 3R or better for outdoor applications for cross-connection and fusing protection of the CT/PT secondary windings to the meter. Polarity marking must be indicated on the cross connect terminations. All junction boxes shall have provisions for a utility seal. Wiring drawing for this junction box is to be provided to HECO at least one month prior to meter installations.
23. Customer shall provide suitable meter enclosure within the control house rated NEMA-1 or better, with two 13-clip ring-sealable meter socket, one for each revenue meter. Enclosure may be cabinet type (refer to 2010 EUSERC drawing 333 for reference) or rack-mount type with provisions for utility seals that can accommodate a 10-position test switches. The manufacturer's cut sheet for the enclosure shall be submitted to HECO for review. (HECO needs 24-hour access to equipment).
24. Customer shall also provide 6-terminal CT and PT terminal blocks for each set of HECO primary and backup meters. Customer shall mount terminal block on hinge side of meter cabinet. Customer shall terminate labeled wires at the terminal block. HECO shall wire from the terminal blocks to the test switches and meter. The CT terminal block shall be of the shorting type.
25. Customer shall provide one analog telephone line for remote billing interrogation of the meters along with a dedicated 120 VAC outlet for a HECO-provided line sharing device.
26. Install HECO-owned power quality device near the point of interconnection. The device shall be a Dranetz BMI Model No. 61SGD-PQ (or equivalent). Customer shall provide suitable space within the control house for installation of power quality measuring device. HECO to install digital cell modem and service to device.

NO.	DATE	REVISIONS	BY	CHG'D & APP'D
SUNPOWER PV KALAELOA SWITCHING STA SINGLE-LINE DIAGRAM				
SHEET 2 OF 2				
DESIGNED	DATE 11-19-2010	SCALE NONE		
APPROVAL			SYSTEM INTEGRATION DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU/HAWAII	
PROJECT NUMBER		REV		
PRELIMINARY		0		

SUNPOWER

EXHIBIT B-2

RELAY LIST AND TRIP SCHEME

Note: Final relay settings will be completed by Seller and approved by Company in accordance with Appendix B (Facility Owned by Seller), Section 1 (a).

Note: Relay functions will be combined into a digital multifunction relay, as approved by Company.

Device Number	Relay	Description	Trip Level	Trip Time
50	SEL-387	High Side Phase Instantaneous Overcurrent		
51	SEL-387	High Side Phase Time Overcurrent		
51N	SEL-387	High Side Ground Time Overcurrent		
51	SEL-387	Low Side Phase Time Overcurrent		
87T	SEL-387	Transformer Differential		
25	SEL-751	Synchronizing and Synchronism Check Relay		
27	SEL-751	Undervoltage Relay	$0.10 \leq V < 0.8 \text{pu}$ $0.00 \leq V \leq 0.10 \text{pu}$	2s 200ms
51	SEL-751	AC Time Overcurrent Relay		
59	SEL-751	Oversupply Voltage Relay	$1.10 \leq V < 1.15 \text{pu}$ $1.15 \text{pu} \leq V$	3s 10ms
810	SEL-751	Overfrequency Relay	$61.5 < f \leq 63 \text{Hz}$ $f > 63 \text{Hz}$	6s 10ms
81U	SEL-751	Underfrequency Relay	$56.0 \leq f < 57.00 \text{Hz}$ $f < 56.0 \text{Hz}$	6s 10ms
DTT		Direct Transfer Trip Relay		
Loss Comm		Loss of Communications Relay		

APPENDIX B-1

METHODS AND FORMULAS FOR MEASURING PERFORMANCE STANDARDS

Performance Standards as defined below shall be used, in part, to govern actions by the Company to curtail the electric output of the Seller's Facility for purposes of maintaining power quality on the Company's System. Specific standards are defined for:

- Ramp Rate (RR)
- Instantaneous Power Fluctuation Rate
- Sub-minute Power Fluctuation Rate

Formulas for measuring the performance standards are presented below, and assume that the power fluctuations will be monitored on the Company's SCADA and EMS systems. These formulas are based on the periodicity at which analog data is retrieved from the RTU. This periodicity is called the "scan rate". The Company presently uses a two-second analog scan rate. The formulas below are based on the two-second scans. The transducer used to obtain the instantaneous power (MW) output is accurate to +/- 0.1%. The two-second scan rate, characteristics of transducers and RTU reporting, and SCADA method of calculation, were considered and included in the proposed values for the performance standards.

Ramp Rate Calculation:

$$RR = | MW_{s-30} - MW_s |$$

Where:

RR = Ramp Rate, may be calculated once every scan

MW_{s-30} = The instantaneous MW analog value 30 scans (60 seconds) prior the present scan

MW_s = The instantaneous MW analog value for the present scan

Power Fluctuation Rate Calculations:

Instantaneous

$$I = | MW_{s-1} - MW_s |$$

Where:

I = Instantaneous Power Change, calculated once every scan

MW_{s-1} = The instantaneous MW analog value for the previous scan

MW_s = The instantaneous MW analog value for the present scan

Subminute Average:

$$A_l = \frac{\sum_{s=1}^{30} |MW_{s-1} - MW_s|}{30}$$

Where:

A_l = Subminute Average, calculated once every 30 scans

MW_{s-1} = The instantaneous MW analog value for the previous scan

MW_s = The instantaneous MW analog value for the present scan

APPENDIX B-2

CONSULTANTS LIST

(To be completed prior to the Initial In-Service Date)

APPENDIX B-3

FORM OF CURTAILMENT REPORT

[DATE]

VIA EMAIL TRANSMISSION AND U.S. MAIL

Kalaeloa Solar Two, LLC
c/o SunPower Corporation, Systems
1414 Harbour Way South
Richmond, CA 94804

Re: Kalaeloa Solar Two, LLC Curtailment for [Month Year]

Dear Mr. xxxxx:

In accordance with the Power Purchase Agreement For As-Available Renewable Energy, Section 8(f), please find below dates and times HECO curtailed the Kalaeloa Solar Two, LLC photovoltaic facility during the month of [Month Year] and the reason for curtailment.

Date	Start Time	End Time	Gross MW*	Amount Curtailed MWhr**	Reason for Curtailment
02/28/___ 03/01/___	23:32	05:44			Excess as-available energy production.
03/01/___ 03/02/___	23:32	04:26			Maintenance on the Kahe Standard Oil #2 46kV circuit

* Gross MW of System Generation at the Time of Curtailment (to be provided when curtailment is due to excess energy)

** The Amount Curtailed is calculated via data supplied by the Seller. HECO does not make any representations as to its accuracy.

Please let us know if you have any questions.

Sincerely,

[Name]
Energy Contract Administration Division

APPENDIX C

INTERCONNECTION FACILITIES OWNED BY THE COMPANY

1. Description of the Company-Owned Interconnection Facilities

- (a) The Company will construct (or may allow Seller to construct, in whole or in part), own, operate and maintain all Interconnection Facilities required to interconnect the Company's System with the Seller's Facility at 46,000 volts, at the Point of Interconnection (the "Company-Owned Interconnection Facilities"). The Seller shall furnish space at no expense to the Company for those Company-owned Interconnection Facilities required to be placed at Seller's premises, as well as easements for and rights of access to any Company-owned Interconnection Facilities located on the Site of the Seller's Facility.

An IRS addressing Seller's Facility requirements was completed for the Project in accordance with the IRS Letter Agreement, and the results have been incorporated in this Appendix C as appropriate.

- (b) The Company-owned Interconnection Facilities, for which the Seller has agreed to pay, in accordance with Section 2 of this Appendix C, include the following:

1. Overhead 46kV line extension. Extend the Kahe-Standard Oil No. 2 46kV overhead line to a location proposed by Seller, near or in Seller's Facility (TMK: 9-1-013:028) from Roosevelt Road. Cost includes installation of ten (10) spans of overhead 46kV line (approximately 2,250 circuit feet), three (3) 70 foot poles, six (6) 65 foot poles, and a 46kV lockable, group operated manual KPF switch to be located near the Seller's Facility.
2. Direct Transfer Trip (DTT) equipment at the Company's Kahe 138kV Substation and Seller's Facility. Dead line check equipment at Company's Kahe 138kV Substation.

3. Supervisory Control and Data Acquisition equipment (SCADA), including but not limited to, SCADA/RTU at the Seller's Facility and SCADA upgrades on the Company's System. Seller shall provide a 90" high x 36" wide x 24" deep space minimum with adequate working clearances for the Company owned SM2 RTU unit.
4. Relaying/Protection upgrades at the Company's Kahe 138kV Substation.
5. Primary and backup revenue metering equipment and test switches.
6. Fiber communication equipment and link between the Company's Kahe Switching Station and the Seller's Facility.
7. Power quality meter and associated communication equipment and service at the Seller's Facility. Seller shall provide suitable space within the control building for installation of this device. Company shall install a digital cell modem and service to this device.
8. Lockout relays (including associated accessories) at the Site. Seller shall provide an 8' high x 2.5' wide x 2' deep space with adequate working clearances for a Company-owned relay panel housing lockout relays and associated equipment.
9. Additional Interconnection Facilities resulting from any supplemental studies, engineering, design, and implementation incurred by the Company to interconnect the Seller's Facility to the Company's System. These costs will be determined and finalized as detailed engineering and design, and as implementation, progress.
10. Any additional Interconnection Facilities needed to be installed as a result of final determination of the Site, final design of Seller's Facility to enable the Company to complete the Interconnection Facilities and be

compatible with Good Engineering and Operating Practices.

The list of Company-owned Interconnection Facilities, and engineering and testing costs for Company-owned Interconnection Facilities, for which Seller agrees to pay in accordance with Section 2 of this Appendix C, are subject to revision if (a) before approving this Agreement, the PUC approves a power purchase contract for another non-Company owned electric generating facility ("Second NUG Contract") to supply energy to Company using the same line to which Seller's Facility is to be connected or (b) the line to which the Seller's Facility is to be connected and/or the related transformer(s) need(s) to be upgraded and/or replaced as a result of this Agreement and a Second NUG Contract, and the PUC, in approving this Agreement, determines that Seller should pay for all or part of the cost of such upgrade and/or replacement.

- (c) If Commercial Operation Date is not achieved within 18 months following earlier of Waiver Agreement Date or Non-appealable PUC Approval Order Date, the listing of the Interconnection Facilities required in this Agreement will be subject to review and revision. This listing includes the cost of such Interconnection Facilities. Such revision may include, but not be limited to, such items as reconductoring an existing transmission or distribution line, construction of a new line, increase transformer capacity, and alternative relay specifications.
- 2. Seller Payment to the Company for the Company-Owned Interconnection Facilities and Review of Seller's Facility
 - (a) (1) For Company-owned Interconnection Facilities to be designed, engineered and constructed by the Company, the Seller shall pay the Total Estimated Interconnection Cost which is comprised of the estimated costs of (i) acquiring and installing such Company-owned Interconnection Facilities, (ii) the engineering and design work (including but not limited to Company, affiliated Company and contracted engineering and design work) associated with a)

developing such Company-owned Interconnection Facilities and b) reviewing and specifying those portions of the Seller's Facility which allow interconnected operations as such are described in Appendix B, and (iii) conducting the Acceptance Test and Control System Acceptance Test. The Total Actual Interconnection Cost (the actual cost of items (i) through (iii)), together with the cost of the IRS (which will be paid pursuant to the IRS Letter Agreement), are the "Total Interconnection Cost".

(2) Summary List of Company-owned Interconnection Facilities and Related Services listed in Section 1.(b) of this Appendix C, plus testing.

(3) The following summarizes the Total Estimated Interconnection Cost:

1. Engineering & Design

a. 46kV Line Extension	\$140,830
b. Direct Transfer Trip (DTT) and Dead Line Check Equipment (Location - Kahe Substation)	\$122,143
c. Remote Terminal Unit (RTU) Equipment and Witness Test (Location – SunPower)	\$174,878
d. Communications for RTU, DTT, and Metering via Fiber Optic Cable on existing overhead structures	\$108,914
Engineering & Design Subtotal:	\$546,765

2. Procurement & Construction

a. 46kV Line Extension, including 46kV Disc Switch (approx. 2,250 circuit feet) ²	\$458,604
b. Direct Transfer Trip (DTT) and Dead Line Check Equipment (Location – Kahe Substation)	\$131,981
c. Remote Terminal Unit (RTU) Equipment and	\$260,451

² Estimate assumes an extension of the 46kV OH line along a drainage canal within Campbell Estate's property, crossing a State of Hawaii right-of-way, and along a City and County of Honolulu right-of-way to an overhead interconnection point approximately 100 feet into the Facility.

Witness Test (Location – SunPower)

d. Communications for RTU, DTT, and Metering via Fiber Optic Cable on existing overhead structures	\$454,555
e. Two Bi-directional Meters & Test Switch	\$4,645
Procurement & Construction Subtotal:	\$1,310,236

The Total Estimated Interconnection Cost is **\$1,857,001³**.

- (b) The Total Estimated Interconnection Cost, which, except as otherwise provided herein, is non-refundable, shall be paid in accordance with the following schedule:
- (i) On the Effective Date, \$50,000.00 is due and payable by Seller to the Company;
 - (ii) Thirty (30) Days after the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date, the amount equal to that portion of the Total Estimated Interconnection Cost described in Section 2(a)(ii) of this Appendix C that is attributable to engineering and design work, is due and payable by Seller to the Company;
 - (1) The Company shall not be obligated to perform engineering and design work on the Company-owned Interconnection Facilities until the Seller pays the amounts in paragraphs (i) and (ii) of this Section 2(b) of Appendix C; and
 - (iii) One Hundred and Eighty (180) Days after the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date, the amount equal to that portion of the Total Estimated Interconnection Cost that is attributable to Procurement and Construction work is due and payable by Seller to Company.

²Amount excludes general excise tax

- (1) The Company shall not be obligated to procure and construct the Company-owned Interconnection Facilities until Seller pays the amount in paragraph (iii) of this Section 2(b) of Appendix C.
- (c) Within thirty (30) Days of the final accounting, which shall take place within ninety (90) Days of completion of construction of the Company-owned Interconnection Facilities, the Seller shall remit to the Company the difference between the Total Estimated Interconnection Cost paid to date and the Total Actual Interconnection Cost, which is the final accounting of the Total Interconnection Costs. If in fact the Total Actual Interconnection Cost is less than the payments received by the Company as the Total Estimated Interconnection Cost, the Company shall repay the difference to the Seller within thirty (30) Days of the final accounting.
- For a period of 12 months following the final accounting, Seller will have the right, upon reasonable notice, to audit the final accounting of the Total Interconnection Costs by reviewing and inspecting Company's records related thereto at Company's offices during normal working hours on Business Days.
- (d) If any Event of Default by the Seller occurs such that termination of the Agreement results, or if the Agreement is declared null and void by either party pursuant to Section 12(c) of the Agreement or as otherwise provided herein, the Seller shall pay to the Company the actual costs and cost obligations reasonably incurred by the Company for the Company-owned Interconnection Facilities as of the date the Agreement is terminated or declared null and void. Such payment shall be made within thirty (30) Days of receipt of an invoice from the Company.
- (e) All the Company-owned Interconnection Facilities including those portions, if any, provided, or provided and constructed, by the Seller shall be the property of the Company.

3. Ongoing Operation and Maintenance Charges

Seller shall operate and maintain, at its cost, the Company-owned Interconnection Facilities that it or its Contractors constructed, if any, prior to the Transfer Date. On and after the Transfer Date, Company shall own, operate and maintain the Company-owned Interconnection Facilities. The Company shall bill the Seller monthly for any costs incurred in operating, maintaining and replacing (to the extent not covered by insurance) the Company-owned Interconnection Facilities. The Company's costs will be determined on the basis of, but not limited to, direct payroll, material costs, applicable overheads at the time incurred, consulting fees and applicable taxes. The Seller shall, within thirty (30) Days after the billing date, reimburse the Company for such monthly billed operation and maintenance charges. For a period of 12 months following receipt of a monthly bill for operation and maintenance charges, Seller will have the right, upon reasonable notice, to audit the operation and maintenance charges for such month by reviewing and inspecting Company's records related thereto at Company's offices during normal working hours on Business Days.

4. Relocation of Interconnection Facilities

The Company shall bill the Seller for any costs actually incurred in relocating the Company-owned Interconnection Facilities in the event that Seller's land rights require a relocation clause and such clause is exercised or if the Company-owned Interconnection Facilities must be relocated for another reason not caused by the Company. The Seller shall, within thirty (30) Days after the billing date, reimburse the Company for such billed relocation charges.

5. Guarantee for Interconnection Costs

To ensure payment by Seller of all costs and expenses incurred by Company in excess of the Total Estimated Interconnection Cost paid in connection with the Company-Owned Interconnection Facilities to be provided and/or constructed by Company described in Section 2 (Seller Payment to Company for Company-Owned Interconnection Facilities and Review of Facility) of this Appendix C (Company-Owned Interconnection Facilities) Seller shall obtain an Irrevocable Standby Letter of Credit with no Documentary Requirement ("Standby Letter of Credit") wherein Company shall receive payment from the bank upon request by Company. The Standby Letter of Credit shall be (a) in the amount of twenty-five percent (25%) of the Total Estimated

Interconnection Cost, (b) issued by a bank in Hawaii which is reasonably acceptable to the Company, and (c) in form and substance reasonably acceptable to the Company. The Standby Letter of Credit shall be effective from the earlier of (i) thirty (30) Days following the date of the issuance of a satisfactory Non-appealable PUC Approval Order, or (ii) the date that the Seller requests the Company to order equipment or commence construction on the Company-owned Interconnection Facilities. The Standby Letter of Credit shall be in effect through the earlier of forty-five (45) Days after the final accounting or seventy-five (75) Days after the Agreement is terminated. The Seller shall provide to the Company within fourteen (14) Days of the effective date of the Standby Letter of Credit a document from the bank which indicates that such a Standby Letter of Credit has been established. Notwithstanding the foregoing, in lieu of a Standby Letter of Credit, Seller may provide such other form of security as is agreed to by the Company in writing.

6. Site Restoration

(a) After termination of this Agreement or if applicable, when the Seller's Facility ceases operations under Section 6(b) below, the Seller shall, at its expense, remove all (i) the Company-owned Interconnection Facilities from the site and (ii) Seller-owned Interconnection Facilities designated by the Company. Provided that, after termination of this Agreement, the Company may elect to have Company rather than Seller remove all or part of such designated Company-owned Interconnection Facilities and/or designated Seller-owned Interconnection Facilities because of reasonable operational concerns over the removal of such Interconnection Facilities, in which case the Seller shall reimburse the Company for its reasonable costs to remove such Company-owned Interconnection Facilities and/or Seller-owned Interconnection Facilities. After the termination of this Agreement, Seller shall, at its expense, restore the site to its condition prior to construction of such the Company-owned Interconnection Facilities. For the purposes of this Section 6, this site includes the land where the Seller's Facility is located and the land where the Interconnection Facilities are located. Site restoration shall be completed within ninety (90) Days of termination of this Agreement, or as otherwise agreed to by both parties in writing.

(b) Notwithstanding any other provision in this Agreement, if pursuant to any arrangement then permitted under applicable law the Seller's Facility continues to operate and generate energy

following the termination of this Agreement, Seller shall not be required to remove any Interconnection Facilities necessary to continue its operations until such time as the Seller's Facility permanently ceases to generate energy pursuant to applicable law. Nothing in the foregoing shall be interpreted as granting Seller any right to use the Company-owned Interconnection Facilities following the termination this Agreement. To the extent Seller continues to operate the Seller's Facility and utilize any Interconnection Facilities following the termination of this Agreement (but not including any Interconnection Facilities that are operated and maintained by the Company), the Seller shall indemnify, defend and hold harmless the Company and its directors, officers, employees and agents (including but not limited to affiliates and contractors and their employees) from and against any and all liabilities, damages, losses, penalties, claims, demands, suits, costs, expenses (including attorneys' fees), and proceedings of every kind, including those for damage to the property or real property of any person or entity (including the Seller) and/or for injury to or death of any person (including the Seller's employees and agents) (collectively "Injury or Damage"), to the extent arising out of or attributable to the Seller's operation of the Seller's Facility or any Interconnection Facilities, including land restoration costs for which the Seller is responsible, if any, except to the extent that such Injury or Damage is attributable to the gross negligence or willful misconduct of the Company.

(c) The obligations set forth in this Section 6 shall survive the termination of this Agreement.

7. Transfer of Ownership/Title

(a) On the Transfer Date, Seller shall transfer to Company all right, title and interest in and to the Company-owned Interconnection Facilities to the extent such facilities were designed and constructed by Seller and/or its Contractors. In connection with the transfer of the Company-owned Interconnection Facilities, Seller shall transfer and assign to Company all applicable manufacturers' or Contractors' warranties which are assignable. Seller shall provide a written list of the manufacturers' and Contractors' warranties which will be assigned to Company and the expiration dates of such warranties no later than thirty (30) Days before the Transfer Date.

- (b) Company's title to and ownership of the Company-owned Interconnection Facilities that were designed and constructed by Seller and/or its Contractors shall be free and clear of liens and encumbrances.
- (c) In connection with the transfer of the Company-owned Interconnection Facilities to Company, Seller shall grant, transfer or assign to Company, such easements, rights of way, licenses or leases, as the case may be, necessary to operate and maintain the Company-owned Interconnection Facilities on and after the Transfer Date.

8. Government Approvals for Any Company-owned Interconnection Facilities to be Constructed by Seller

Seller shall obtain all required permits, licenses, approvals and other governmental authorizations (the "Government Approvals") required to construct, own, operate and maintain the Company-owned Interconnection Facilities (that Seller and/or its Contractors will construct) and shall provide these prior to the Transfer Date. On or before the Transfer Date, Seller shall provide Company with (a) copies of all such permits and approvals obtained by Seller regarding the construction, ownership or operation of the Company-owned Interconnection Facilities (that Seller and/or its Contractors constructed) and (b) documentation that all such permits and approvals have been closed with the issuing governmental agency.

9. Easements, Rights of Way, Licenses and Leases

Seller shall obtain all easements, rights of way, licenses and leases (collectively, "Land Rights") on the site of Seller's Facility and any other affected property, which are required to construct, maintain and operate the Company-owned Interconnection Facilities. Seller shall use its best efforts to obtain perpetual easements. Such Land Rights shall contain terms and conditions which are acceptable to Company and shall be provided in advance to Company for its review. For so long as Seller has the right under this Agreement to sell energy to Company, Seller shall pay for any rents and other payments due under such Land Rights that are associated with Company-owned Interconnection Facilities.

APPENDIX D

ENERGY PURCHASES BY THE COMPANY

1. Price for Purchase and Rate of Delivery. Subject to the provisions of this Agreement, the Company shall accept and pay for Actual Output generated by the Seller's Facility and delivered by the Seller to the Company at the rates set forth in Table D-1 below beginning with the Commercial Operation Date.

2. Test Energy. The Company shall use commercially reasonable efforts to accept test energy that is delivered as part of the normal testing for generators (such as energy delivered to the Company during the Control System Acceptance Test but not during the Acceptance Test), provided the Seller must use commercially reasonable efforts to coordinate such normal testing with the Company so as to minimize adverse impacts on the Company's System and operations. The Company shall compensate the Seller for test energy at a rate equivalent to 75% of the first year Contract Price.

TABLE D-1

Contract Year	Base Price \$/MWh
Contract Year 1	\$191.14
Contract Year 2	\$196.87
Contract Year 3	\$202.78
Contract Year 4	\$208.86
Contract Year 5	\$215.13
Contract Year 6	\$221.58
Contract Year 7	\$228.23
Contract Year 8	\$235.08
Contract Year 9	\$242.13
Contract Year 10	\$249.39
Contract Year 11	\$256.88
Contract Year 12	\$264.58
Contract Year 13	\$211.84
Contract Year 14	\$211.84
Contract Year 15	\$211.84
Contract Year 16	\$211.84
Contract Year 17	\$211.84
Contract Year 18	\$211.84
Contract Year 19	\$211.84
Contract Year 20	\$211.84

APPENDIX E

GUARANTEED PROJECT MILESTONE

The term "Trigger Date" as used herein shall mean the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date.

Guaranteed Milestone **Results Seller Must Achieve**

18 months from the the Trigger Date	Guaranteed Commercial Operation Date: Commercial Operation Date is achieved.
--	---

APPENDIX F

REPORTING MILESTONES

The term "Trigger Date" as used herein shall mean the earlier of the Waiver Agreement Date or the Non-appealable PUC Approval Order Date.

Reporting Milestone

11:59 p.m., 7 months
Following Trigger Date

Results Seller Must Achieve

Permit Application Filing Date:
Seller shall demonstrate filing
for all applications for
Permits required for the
construction and operation of
the Seller's Facility. FAA
Application, City and County of
Honolulu Building Permit
Application, Environmental
Assessment, Site Sub-Lease and
Gen-Tie Easement.

11:59 p.m., 8 months
Following Trigger Date

Seller shall provide the
Company with copies, as
applicable, of executed
Facility operating agreements.

11:59 p.m., 9 months
Following the Trigger Date

Seller shall obtain and provide
to Company all Land Rights
necessary for the construction
and operation of the Company-
owned Interconnection
Facilities.

11:59 p.m., 9 months
Following Trigger Date

Approval of Environmental
Assessment for the Project.

11:59 p.m., 10 months
Following Trigger Date

Seller shall provide the
Company with documentation that
all governmental Permits have
been obtained or will be
obtained by the time needed to
meet all Construction
Milestones.

11:59 p.m., 8 months
Following Trigger Date

Seller shall provide the
Company with a draft copy of
the Seller's Facility

	equipment, engineering, procurement and construction ("EPC"), or other general contractor, agreements.
11:59 p.m., 8 months Following Trigger Date	Seller shall provide the Company with documentation of having achieved closing on financing for the Seller's Facility or provided the Company with proof of financial capability to construct the Seller's Facility. ("Construction Financing Closing Milestone.")
11:59 p.m., 11 months Following Trigger Date	Construction Start Date: The date on which continuous construction of permanent structures begins at the Site.
11:59 p.m., 15 months Following Trigger Date	Seller shall have laid the foundation for all Facility buildings, generating facilities and step-up transformer facilities.
11:59 p.m., 15 months Following Trigger Date	The high efficiency photovoltaic panels and inverters shall have been installed at the Site.
11:59 p.m., 16 months Following Trigger Date	The step-up transformer shall have been installed at the Site.
11:59 p.m., 16 months Following Trigger Date	Seller shall have constructed Seller's Interconnection Facilities and such facilities are capable of being energized.
11:59 p.m., 18 months Following Trigger Date	The Acceptance Test of the Seller's Facility commences.

APPENDIX G

FORM OF LETTER OF CREDIT

[Bank Letterhead]

[Date]

Beneficiary:

Hawaiian Electric Company, Inc.
900 Richards Street
Honolulu, Hawaii 96813
Attention: _____

[Bank's Name]

[Bank's Address]

Re: Letter of Credit Number _____

We hereby establish, in your favor, our irrevocable Letter of Credit Number _____ for the account of [Applicant's Name] and [Applicant's Address] in the initial amount of \$ _____ [dollar value] and authorize you, Hawaiian Electric Company ("Beneficiary"), to draw at sight on [Bank's Name].

Subject to the terms and conditions hereof, this Letter of Credit secures [Account Party]'s certain obligations to Beneficiary under the Power Purchase Agreement dated as of _____ between [Account Party] and Beneficiary.

Partial draws of this Letter of Credit are permitted. This Letter of Credit is not transferable. Drafts on us at sight must be accompanied by a Beneficiary's signed statement signed by a representative of Beneficiary substantially as follows:

The undersigned hereby certifies that (i) I am duly authorized to execute this document on behalf of Hawaiian Electric Company, and (ii) the amount of the draft accompanying this certification is due and owing to Hawaiian Electric Company under the terms of the Power Purchase Agreement dated as of _____, between _____, and Hawaiian Electric Company.

The amounts of any drafts drawn under this credit are to be endorsed on the reverse side hereof. Such drafts must bear the

clause "Drawn under [Bank's Name and Letter of Credit Number
and date of Letter of Credit.]"

This letter of credit shall expire one year from the date hereof. Notwithstanding the foregoing, however, this letter of credit shall be automatically extended (without amendment of any other term and without the need for any action on the part of the undersigned or Beneficiary) for one year from the initial expiration date and each future expiration date unless we notify you in writing at least thirty (30) days prior to any such expiration date that this letter of credit will not be so extended. Any such notice shall be delivered by registered or certified mail, or by FedEx, both to:

Rodney Chong
Director, Energy Procurement
Hawaiian Electric Company, Inc.
220 South King Street, 21st Floor
Honolulu, Hawaii 96813

and to

Tayne Sekimura
SVP & Chief Financial Officer
Hawaiian Electric Company, Inc.
900 Richards Street, 4th Floor
Honolulu, Hawaii 96813

We hereby agree with drawers that drafts and documents as specified above will be duly honored upon presentation to [Bank's Name] and [Bank's Address] if presented on or before the then-current expiration date hereof.

Payment of any amount under this Letter of Credit by [Bank] shall be made as the Beneficiary shall instruct on the next Business Day after the date the [Bank] receives all documentation required hereunder, in immediately available funds on such date.

Unless otherwise expressly stated herein, this irrevocable standby letter of credit is issued subject to the Uniform Customs and Practice for Documentary Credits, 2007 revision, International Chamber of Commerce publication no. 600.

[Bank's Name]:

By: _____
[Authorized Signature]

Appendix H

FORM OF MONTHLY PROGRESS REPORT

1 Instructions

Any capitalized terms used in this report which are not defined herein shall have the meaning ascribed to them in the Power Purchase Agreement for Renewable As-Available Energy by and between **Kalaeloa Solar Two, LLC**, a Delaware limited liability company ("Seller"), and **Hawaiian Electric Company, Inc.**, a Hawaii corporation, dated _____, (the "Agreement").

In addition to the remedial action plan requirement set forth in Section 13(d) and Section 13(e) of the Agreement, Seller shall review the status of each Construction Milestone of the construction schedule (the "Schedule") for the Seller's Facility and identify such matters referenced in clauses (i)-(v) below as known to Seller and which in Seller's reasonable judgment are expected to adversely affect the Schedule, and with respect to any such matters, shall state the actions which Seller intends to take to ensure that the Construction Milestones will be attained by their required dates. Such matters may include, but shall not be limited to:

(i) Any material matter or issue arising in connection with a Permit, or compliance therewith, with respect to which there is an actual or threatened dispute over the interpretation of a law, actual or threatened opposition to the granting of a necessary Permit, any organized public opposition, any action or expenditure required for compliance or obtaining approval that Seller is unwilling to take or make, or in each case which could reasonably be expected to materially threaten or prevent financing of the Seller's Facility, attaining any Construction Milestone, or obtaining any contemplated agreements with other parties which are necessary for attaining any Construction Milestone or which otherwise reasonably could be expected to materially threaten Seller's ability to attain any Construction Milestone.

(ii) Any development or event in the financial markets or the independent power industry, any change in taxation or accounting standards or practices or in Seller's business or prospects which reasonably could be expected to materially threaten financing of the Seller's Facility, attainment of any Construction Milestone or materially threaten any contemplated

agreements with other parties which are necessary for attaining any Construction Milestone or could otherwise reasonably be expected to materially threaten Seller's ability to attain any Construction Milestone;

(iii) A change in, or discovery by Seller of, any legal or regulatory requirement which would reasonably be expected to materially threaten Seller's ability to attain any Construction Milestone;

(iv) Any material change in the Seller's schedule for initiating or completing any material aspect of the Seller's Facility;

(v) The status of any matter or issue identified as outstanding in any prior Monthly Progress Report and any material change in the Seller's proposed actions to remedy or overcome such matter or issue.

For the purpose of this report, "EPC Contractor" means the contractor responsible for engineering, procurement and construction of the Seller's Facility, including Seller if acting as contractor, and including all subcontractors.

2 Executive Summary

2.1 Major activities completed

Please provide a cumulative summary of the major activities completed for each of the following aspects of the Seller's Facility (provide details in subsequent sections of this report):

2.1.1 [Insert Construction Milestones from Appendices E and F, if needed]

2.1.2 Financing

2.1.3 Development Permits

2.1.4 Site Control

2.1.5 Design and Engineering

2.1.6 Major Equipment Procurement

2.1.7 Construction

- 2.1.8 Interconnection
- 2.1.9 Startup Testing and Commissioning

2.2 Major activities recently performed

Please provide a summary of the major activities performed for each of the following aspects of the Seller's Facility since the previous report (provide details in subsequent sections of this report):

- 2.2.1 [Insert Construction Milestones from Appendices E and F, if needed]
- 2.2.2 Financing
- 2.2.3 Development Permits
- 2.2.4 Site Control
- 2.2.5 Design and Engineering
- 2.2.6 Major Equipment Procurement
- 2.2.7 Construction
- 2.2.8 Interconnection
- 2.2.9 Startup Testing and Commissioning

2.3 Major activities planned but not completed

Please provide a summary of the major activities that were planned to be performed since the previous report but not completed as scheduled, including the reasons for not completing the activities, for each of the following aspects of the Seller's Facility:

- 2.3.1 [Insert Construction Milestones from Appendices E and F, if needed]
- 2.3.2 Financing
- 2.3.3 Development Permits
- 2.3.4 Site Control

- 2.3.5 Design and Engineering
- 2.3.6 Major Equipment procurement
- 2.3.7 Construction
- 2.3.8 Interconnection
- 2.3.9 Startup Testing and Commissioning

2.4 Major activities expected during the current month

Please provide a summary of the major activities to be performed during the current month for each of the following aspects of the Seller's Facility (provide details in subsequent sections of this report):

- 2.4.1 Construction Milestones
- 2.4.2 Financing
- 2.4.3 Permits
- 2.4.4 Site Control
- 2.4.5 Design and Engineering
- 2.4.6 Major Equipment procurement
- 2.4.7 Construction
- 2.4.8 Interconnection
- 2.4.9 Startup Testing and Commissioning

3 Milestones

3.1 Milestone schedule

Please list all Construction Milestones specified in Appendix E and Appendix F and state the current status of each.

Construction Milestone	Milestone Date Specified in the Agreement	Status (e.g., on schedule, delayed due to [specify reason]; current expected completion date)
-------------------------------	--	---

3.2 Remedial Action Plan (if applicable)

Provide a detailed description of Seller's course of action and plan to achieve the missed Construction Milestones and all subsequent Construction Milestones by the Guaranteed Commercial Operation Date using the outline provided below.

- 3.2.1 Identify Missed Construction Milestone
- 3.2.2 Explain plans to achieve missed Construction Milestone
- 3.2.3 Explain plans to achieve subsequent Construction Milestones
- 3.2.4 Identify and discuss (a) delays in engineering schedule, equipment procurement, and construction and interconnection schedule and (b) plans to remedy delays as a result of the missed Construction Milestones

4 Financing

Please provide the schedule Seller intends to follow to obtain financing for the Seller's Facility. Include information about each stage of financing.

Activity (e.g., obtain \$xx for yy stage from zz)	Completion Date
	____/____/____ (expected / actual)
	____/____/____ (expected / actual)

5 Project Schedule

Please provide a copy of the current version of the overall Seller's Facility schedule (e.g., Work Breakdown Structure, Gantt chart, MS Project report, etc.). Include all major activities for Development Permits, design and engineering, procurement, construction, interconnection and testing.

6 Governmental Approvals

6.1 Environmental Impact Review

Please provide information about the primary environmental impact review for the Seller's Facility. Indicate whether dates are expected or actual.

Agency

Date of application/submission

____/____/____

(expected /
actual)

**Date application/submission deemed
complete by agency**

____/____/____

(expected /
actual)

Date of initial study (if applicable)

____/____/____

(expected /
actual)

Process (e.g., Notice of Exemption,
Negative Declaration, Mitigated
Negative Declaration, Environmental
Impact Report)

Date of Notice of Preparation

____/____/____

(expected /
actual)

Date of Draft ND/MND/EIR

____/____/____

(expected /
actual)

**Date Notice of Determination filed at
OPR or County Clerk**

____/____/____

(expected /
actual)

6.2 Permits

Please describe each of the Permits to be obtained by Seller and the status of each:

Agency / Approval

Status Summary

e.g., dates of application / hearing / notice / etc. (note whether dates are anticipated or actual); major activities (indicate whether planned, in progress and/or completed); primary reasons for possible delay, etc.

6.3 Permit activities recently performed

Please list all Permit activities that occurred since the previous report.

6.4 Permit activities expected during the current month

Please list all Permit activities that are expected to occur during the current month.

6.5 Permit Notices received from EPC Contractor

Please attach to this Monthly Progress Report copies of any notices related to Permit activities received since the previous report, whether from EPC Contractor or directly from Governmental Agencies.

7 Site Control

7.1 Table of Site Control schedule

If not obtained prior to execution of the Agreement, please provide the schedule Seller intends to follow to obtain control of the Site (e.g., purchase, lease).

Activity	Completion Date
	__/__/__ (expected / actual)
	__/__/__ (expected / actual)

7.2 Site Control activities recently performed

Please explain in detail the property acquisition activities that were performed since the previous report.

7.3 Site Control activities expected during the current month.

Please explain in detail the site control activities that are expected to be performed during the current month.

8 Design and Engineering

8.1 Design and engineering schedule

Please provide the name of the EPC Contractor, the date of execution of the EPC Contract, and the date of issuance of a full notice to proceed (or equivalent).

Please list all major design and engineering activities, both planned and completed, to be performed by Seller and the EPC Contractor.

Name of EPC Contractor / Subcontractor	Activity	Completion Date
		__/__/__ (expected / actual)
		__/__/__ (expected / actual)

8.2 Design and engineering activities recently performed

Please explain in detail the design and engineering activities that were performed since the previous report.

8.3 Design and engineering activities expected during the current month

Please explain in detail the design and engineering activities that are expected to be performed during the current month.

9 Major Equipment Procurement.

9.1 Major equipment to be procured

Please list all major equipment to be procured by Seller or the EPC Contractor:

Equipment Description	Manufacturer	Delivery Date (indicate whether expected or actual)	Installation Date (indicate whether expected or actual)
		__/__/__ (expected / actual)	__/__/__ (expected / actual)
		__/__/__ (expected / actual)	__/__/__ (expected / actual)

Equipment Description	No. Ordered	No. Made	No. On-Site	No. Installed	No. Tested

9.2 Major Equipment procurement activities recently performed

Please explain in detail the major equipment procurement activities that were performed since the previous report.

9.3 Major Equipment procurement activities expected during the current month.

Please explain in detail the major equipment procurement activities that are expected to be performed during the current month.

10 Construction

10.1 Construction activities

Please list all major construction activities, both planned and completed, to be performed by Seller or the EPC contractor.

Activity	EPC Contractor / Subcontractor	Completion Date
		___/___/___ (expected / actual)
		___/___/___ (expected / actual)

10.2 Construction activities recently performed

Please explain in detail the construction activities that were performed since the previous report.

10.3 Construction activities expected during the current month

Please explain in detail the construction activities are expected to be performed during the current month.

10.4 EPC Contractor Monthly Construction Progress Report.

Please attach a copy of the Monthly Progress Reports received since the previous report from the EPC Contractor pursuant to the construction contract between Seller and EPC Contractor, certified by the EPC Contractor as being true and correct as of the date issued.

11 Interconnection

11.1 Interconnection activities

Please list all major interconnection activities, both planned and completed, to be performed by Seller or the EPC Contractor.

Activity	Name of EPC Contractor / Subcontractor	Completion Date
		___/___/___ (expected / actual)
		___/___/___ (expected / actual)

11.2 Interconnection activities recently performed

Please explain in detail the interconnection activities that were performed since the previous report.

11.3 Interconnection activities expected during the current month

Please explain in detail the interconnection activities that are expected to be performed during the current month.

12 Startup Testing and Commissioning

12.1 Startup testing and commissioning activities

Please list all major startup testing and commissioning activities, both planned and completed, to be performed by Seller or the EPC Contractor.

Activity	Name of EPC Contractor / Subcontractor	Completion Date
		__/__/__ (expected / actual)
		__/__/__ (expected / actual)

12.2 Startup testing and commissioning activities recently performed

Please explain in detail the startup testing and commissioning activities that were performed since the previous report.

12.3 Startup testing and commissioning activities expected during the current month

Please explain in detail the startup testing and commissioning activities that are expected to be performed during the current month.

13 Safety and Health Reports

13.1 Accidents

Please describe all Seller's Facility-related accidents reported since the previous report.

13.2 Work stoppages

Please describe all Seller's Facility-related work stoppages from that occurred since the previous report.

Please describe the effect of work stoppages on the Seller's Facility schedule.

14 Certification

I, _____, on behalf of and as an authorized representative of [_____], do hereby certify that any and all information contained in this Seller's Monthly Progress Report is true and accurate, and reflects, to the best of my knowledge, the current status of the construction of the Seller's Facility as of the date specified below.

By: _____

Name: _____

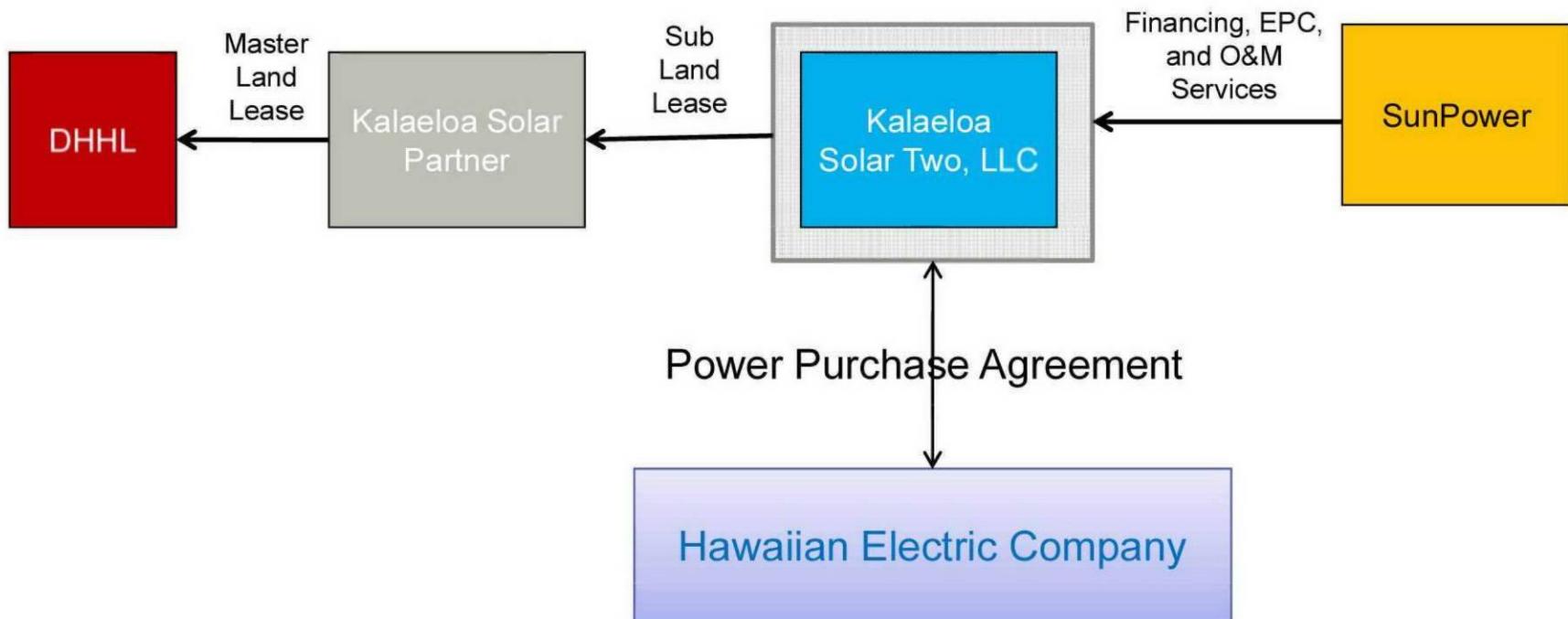
Title: _____

Date: _____

EXHIBIT 2

Description of Kalaeloa Solar Two, LLC Affiliates and Subsidiaries

Project – Financial Structure





Department of Commerce and Consumer Affairs

CERTIFICATE OF GOOD STANDING

I, the undersigned Acting Director of Commerce and Consumer Affairs of the State of Hawaii, do hereby certify that

KALAELOA SOLAR TWO, LLC

organized under the laws of Delaware

was duly registered to do business in Hawaii as a foreign limited liability company on 12/31/2010 , and that, as far as the records of this Department reveal, has complied with all of the provisions of Chapter 428, Hawaii Revised Statutes, regulating foreign limited liability companies.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of the Department of Commerce and Consumer Affairs, at Honolulu, Hawaii.

Dated: January 11, 2011

A handwritten signature in black ink, appearing to read "Mark J. Williams".



Acting Director of Commerce and Consumer Affairs

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF FORMATION OF "KALAELOA SOLAR TWO, LLC", FILED IN THIS OFFICE ON THE SIXTEENTH DAY OF DECEMBER, A.D. 2010, AT 10:34 O'CLOCK P.M.

4914622 8100

101201727

You may verify this certificate online
at corp.delaware.gov/authver.shtml



Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8444806

DATE: 12-21-10

*State of Delaware
Secretary of State
Division of Corporations
Delivered 10:46 PM 12/16/2010
FILED 10:34 PM 12/16/2010
SRV 101201727 - 4914622 FILE*

CERTIFICATE OF FORMATION

OF

KALAELOA SOLAR TWO, LLC

This Certificate of Formation of Kalaeloa Solar Two, LLC (the "Company"), dated as of December 13, 2010, is being duly executed and filed by Christopher Jaap, as an authorized person, to form a limited liability company under the Delaware Limited Liability Company Act (6 Del. C. §18-101, et seq.).

FIRST: The name of the limited liability company is Kalaeloa Solar Two, LLC.

SECOND: The address of the registered office of the Company in the State of Delaware is Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801.

THIRD: The name and address of the registered agent for service of process on the Company in the State of Delaware is The Corporation Trust Company, Corporation Trust Center, 1209 Orange Street, in the City of Wilmington, County of New Castle, Delaware 19801.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Formation as of the date first above written.

By: 
Name: Christopher Jaap
Title: Authorized Person

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "KALAELOA SOLAR TWO, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-FIRST DAY OF DECEMBER, A.D. 2010.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

4914622 8300

101217700

You may verify this certificate online
at corp.delaware.gov/authver.shtml



Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8445049

DATE: 12-21-10

FORM FLLC-1
7/2010

7. The company is (check one):

- a. Manager-managed, and the names and addresses of each manager is listed in paragraph "c".
- b. Member-managed, and the names and addresses of each member is listed in paragraph "c".
- c. List the names and addresses of each manager if the company is Manager-managed, or List the names and addresses of each member if the company is Member-managed.

SunPower Corporation, Systems,

1414 Harbor Way South, Richmond, CA 94804

8. The members of the company (check one):

- Shall not be liable for the debts, obligations and liabilities of the company.
- Shall be liable for all debts, obligations and liabilities of the company.
- Shall be liable for specified debts, obligations and liabilities of the company as stated below, and have consented in writing to the adoption of this provision or to be bound by this provision.

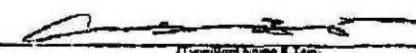
9. Attached is an original certificate of existence or a record of similar import, authenticated by the proper government official having custody of the company records in the state or country under whose laws it is organized, and dated not more than sixty (60) days prior to the filing of this application. If the certificate is in a foreign language, a translation under oath of the translator is attached.

I/we certify under the penalties set forth in the Hawaii Uniform Limited Liability Company Act, that I/we have read the above statements, I/we are authorized to sign this application, and that the above statements are true and correct.

Signed this 14th day of December, 2010

Christopher Jamp, Assistant Secretary,

SunPower Corporation, Systems, Sole Member



(Signature)

(Signature)

SEE INSTRUCTIONS PAGE. The application must be signed and certified by at least one manager of a manager-managed company or by at least one member of a member-managed company.

FILED 12/31/2010 12:51 PM
Business Registration Division
DEPT. OF COMMERCE AND
CONSUMER AFFAIRS
State of Hawaii



Delaware

PAGE 1

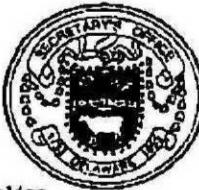
The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "KALAELOA SOLAR TWO, LLC" IS DULY FORMED UNDER THE LAWS OF THE STATE OF DELAWARE AND IS IN GOOD STANDING AND HAS A LEGAL EXISTENCE SO FAR AS THE RECORDS OF THIS OFFICE SHOW, AS OF THE TWENTY-FIRST DAY OF DECEMBER, A.D. 2010.

AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE NOT BEEN ASSESSED TO DATE.

12/22/201020004

4914622 8300
101217700
You may verify this certificate online
at corp.delaware.gov/authver.shtml



Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 8445049

DATE: 12-21-10

RECEIVED DEC-21-2010 13:11

FROM-

TO-DCCA BREG

PAGE 004

Date: December 31, 2010

Department of Commerce & Consumer Affairs
Business Registration Division
P. O. Box 40
Honolulu, HI 96810

FILED 12/31/2010 12:51 PM
Business Registration Division
DEPT. OF COMMERCE AND
CONSUMER AFFAIRS
State of Hawaii



RE: KALAELOA SOLAR TWO, LLC

Ladies/Gentlemen:

There is no objection and hereby consent to the registration of the above referenced name. I am authorized to give this consent on behalf of Kalaeloa Solar One, LLC.

Very truly yours,

KALAELOA SOLAR ONE, LLC 71360C5
KSP Management, LLC, Manager

By: _____

(Signature)

Darren T. Kimura

(print name)

Its Manager



13. PROJECT MANAGEMENT/EXPERIENCE

About SunPower

SunPower Corporation, Systems, a Delaware Corporation, a wholly-owned subsidiary of SunPower Corporation. It is focused on the design, manufacture, financing, and deployment of solar electric systems. It is headquartered at 1414 Harbour Way South, Richmond, CA 94804.

SunPower Corporation (NASDAQ: SPWR), a Delaware Corporation, designs, manufactures and delivers the highest efficiency solar electric technology worldwide. It is headquartered at: 3939 N. 1st Street, San Jose, CA 95134

SunPower Corporation is majority-owned by Cypress Semiconductor (NYSE:CY). Cypress Semiconductor is a leading broad-line semiconductor manufacturer. Cypress provides SunPower Corporation with the capacity and expertise to scale manufacturing processes quickly to meet utility-scale demand. Cypress is headquartered at: 198 Champion Ct., San Jose, CA 95134 USA

As a vertically-integrated company, SunPower manufactures photovoltaic cells and modules and undertakes project engineering and design, manages construction and commissioning and provides ongoing system monitoring and maintenance. This unitary responsibility enables SunPower to ensure adequate PV supply, on-time completion for projects, quality of components and construction and, ultimately, reliable performance. SunPower's clients experience on-time delivery of complex projects and their trouble-free operation for the life of the system.

Incorporated in 1985, SunPower has:

- Successfully deployed over 400 projects in 24 states and in 11 countries.
- Publicly-traded with \$7B market capitalization.
- Employs 2,505 employees with offices in California, New Jersey, Hawaii, Switzerland, Germany, Korea, Italy, Spain, and the Philippines

SunPower's Systems Reliability

- Over 250 MWs of SunPower's patented power tracker technology has been deployed .
- SunPower's design and project management team's experience ensures that PV systems are installed in accordance to all national electrical standards and local permitting requirements.
- Our solar cells, solar panels, and inverters are built to maximize the power from your system by utilizing advanced technology while adhering to the most stringent safety requirements.

SunPower's Maximum Performance

- SunPower modules have a 50% greater yield than conventional solar panels. This factor is critical to maximizing energy production and economic benefits from the limited available space.
- SunPower works closely with its customers to demonstrate the ongoing benefits that the PV systems provide for the local community and the global environment.



SunPower acquired **PowerLight** in January 2007. Both were founded as product innovation companies with SunPower advancing solar cell technology and PowerLight advancing systems design and integration. The combined company has already made significant progress in reaching the dual goals of improving performance for the customer while collapsing steps along the supply chain to capture further cost efficiencies through product design and by simplifying system acquisition and delivery processes.



10 Years of Successful Projects in Hawaii

SunPower, formerly known as PowerLight, has been a partner with local business, Hawaii utilities, and the State of Hawaii over the past 11 years. This historical relationship resulted in many industry benchmarks.

- 1998: First "commercially-financed" PV system in US, at Mauna Lani Hotel.
- 2000: First PV solar farm at Parker Ranch used for pumped hydro storage.
- 2004: Winning RFP bidder to install first PPA finance arrangement at NELHA.
- 2007: Winning RFP bidder for systems at Hawaii Dept of Transportation, Airports.

Due to SunPower's operating history in Hawaii, our systems are engineered to withstand a wide variety of environmental conditions, including range fires, earthquakes, gale-force winds



Harley Davidson, Honolulu, Hawaii

Mauna Lani
Resort, Kohala
Coast, Hawaii



Parker Ranch, Kamuela, Hawaii





Select Ground Mount System Projects

SunPower has completed hundreds of projects within the last five years. Most new projects are power supply agreements, including all the European deals listed. The following is a sample of projects performed.

SunPower Global Ground Mount Presence >250MW by Q4 „08





Host/Customer	Project	kWp	City	State
Naturener Solar	Almuradiel, Manzanares, Tinajeros	29,000	Almuradiel, Manzanares, Tinajeros	Spain
PLAG Elecnor	Jumilla Phase	23,000	Jumilla	Spain
PLAG Elecnor	Trujillo Phase	23,000	Trujillo	Spain
Elecnor	Olivenza	18,000	Olivenza	Spain
United States Air Force	Nellis Air Force Base	14,062	Las Vegas	NV
Elecnor SA Direccion Este	Almodovar del Campo	11,500	Ciudad Real	Spain
GE Energy Financial Services	Solar Power Plant	11,000	Serpa	Portugal
Bavaria Solarpark	Muelhausen, Guenching, Minihof	10,084	Bavaria	Germany
Elecnor	Zaragoza	9,920	Zaragoza	Spain
Elecnor SA Direccion Sur	Guadarranque Phase 1	9,680	Guadarranque	Spain
PLAG SolarPack	Isla Mayor	8,400	Isla Mayor	Spain
Elecnor SA Direccion Sur	Magasquilla Phase 1	6,912	Caceres	Spain
Elecnor	Lorca	6,000	Lorca	Spain
Atersa	Tracker system	6,000	Sevilla	Spain
PLAG SolarPack	Llerena 1	4,800	Llerena	Spain
PLAG SolarPack	Lebrija 1	3,840	Lebrija	Spain
Bavaria Solarpark	II	3,001	Roeckersbuehl & Sinning	Germany
LG CNS	SP Solar Mountain	2,207	Mungyeong	Korea
EnE Systems	JeonJu Energy Landfill	2,000	JeonJu	Korea
Hereford Capital Partners	Belmar Center	1,742	Lakewood	CO
PLAG	Pfenninghof	1,600	Regensburg	Germany
Lanai Sustainability Research	Castle and Cooke	1,521	Lanai	HI
EnE Systems	Hampyeong	1,393	Hampyeong	Korea
Peninsula Packaging	Headquarters	1,170	Exeter	CA
California Community Colleges	Napa Valley College	1,157	Napa	CA
Rancho California Water District	Water Treatment Plant	1,130	Murrieta	CA
City of Chico	Water Pollution Control Plant	1,107	Chico	CA
US Marines	MCAGCC Twentynine Palms	1,100	Twentynine Palms	CA
Agilent Technologies	Life Sciences & Chem Analysis	1,089	Santa Rosa	CA
Lake County	Northwest Wastewater Plant	1,075	Lakeport	CA
Three Phases Energy Services	Gap, Inc: Pacific Distribution Center	1,060	Fresno	CA
Sonoma County Water Agency	Sonoma Valley Sanitation District	1,044	Santa Rosa	CA
Applied Materials	Arquez Campus Phase 2	1,016	Sunnyvale	CA
Solar & Park Corporation	Kimdaejung Convention Center	1,000	Gwangju	Korea

EXHIBIT 3

**New Energy Opportunities, Inc.,
“Report of the Independent
Observer on Hawaiian Electric
Company’s Bid Evaluation and
Short List Selection Process—
Renewable Energy RFP,” Docket
No. 2007-0331(Jan. 23, 2009)
(Copy-Public Version)**

Hawaiian Electric Company, Inc. • PO Box 2750 • Honolulu, HI 96840-0001



Darcy L. Endo-Omoto
Vice President
Government & Community Affairs

January 23, 2009

2009 JAN 23 P 2:28

PUBLIC UTILITIES
COMMISSION

FILED

The Honorable Chairman and Members of the
Hawaii Public Utilities Commission
465 South King Street, First Floor
Kekuanaoa Building
Honolulu, Hawaii 96813

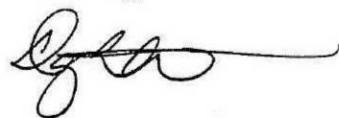
Dear Commissioners:

Subject: Docket No. 2007-0331
Competitive Bidding Process for Renewable Energy on Oahu
Independent Observer's Report on Bid Evaluation and Short List Selection

On December 30, 2008, Hawaiian Electric Company, Inc. ("Hawaiian Electric" or the "Company") notified all of the bidders in Hawaiian Electric's Renewable Request for Proposals ("RFP") as to their respective selection or non-selection to the Company's Initial Short List. (See Section 4.5 of the RFP.)

New Energy Opportunities, Inc., the Commission-approved Independent Observer ("IO"), has provided its report on Hawaiian Electric's bid evaluation and short list selection process. (See Attachment.) The Independent Observer's report is being submitted pursuant to Protective Order No. 23875, dated December 6, 2007. A portion of the IO's report contains confidential information provided by the bidders in the competitive bidding process and disclosure of such confidential information could disadvantage Hawaiian Electric Company in any future negotiations with bidders, power suppliers, contractors, and/or vendors.

Sincerely,



Attachments

c: Division of Consumer Advocacy (with Attachments)

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

DOCKET NO. 2007-0331

In the Matter of
PUBLIC UTILITIES COMMISSION

Instituting a Proceeding
Related to a Competitive
Bidding Process for Renewable
Energy on Oahu

**REPORT OF THE
INDEPENDENT OBSERVER ON
HAWAIIAN ELECTRIC COMPANY'S
BID EVALUATION AND SHORT LIST
SELECTION PROCESS—
RENEWABLE ENERGY RFP**

PREPARED BY:
New Energy Opportunities, Inc.

January 23, 2009

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III. REASONABLENESS OF BID EVALUATION AND SHORT LISTING PROCESS.....	3
IV. PROCESS-RELATED MATTERS.....	7
V. CONCLUSION.....	8

Confidential Appendix

I. Overview

Pursuant to the Hawaii Public Utilities Commission’s Framework for Competitive Bidding (“Framework”),¹ New Energy Opportunities, Inc. (“NEO”), the Independent Observer (“IO”) for Hawaiian Electric Company, Inc.’s Renewable Energy RFP,² hereby submits its report on Hawaiian Electric’s bid evaluation and short list selection process in the Renewable Energy RFP. Hawaiian Electric Company, Inc. (“HECO”) issued the RFP in June 2008 seeking proposals for the supply of up to approximately 100 MW of renewable energy resources to serve the island of Oahu under long-term power purchase agreements.

Where an Independent Observer is appointed to monitor a competitive bidding process under the Framework, the IO is required to report to the Hawaii Public Utilities Commission (“Commission”) on monitoring results during each stage of the competitive process.³ The IO participated in the process leading up to the issuance of the RFP, advising HECO regarding the RFP design and submitting comments with respect to both the draft RFP and the final proposed RFP, which was subsequently approved by the Commission.⁴ The next stage of the competitive bidding process has involved preparation of a detailed protocol for the evaluation of bids, receipt of bids, evaluation of the bids, and the decisions regarding which bids to short list. The IO’s report pertains to this stage of the competitive procurement process. Included in this report is a confidential appendix, which addresses HECO’s treatment of particular bids.

For the reasons set forth in this report, the IO concludes that HECO’s protocol for the evaluation of bids, its evaluation of the bids with respect to price and non-price factors, and its decisions regarding which bids to short list were reasonable and in accord with the final RFP approved by the Commission and the substantive standards and procedures set forth in the Framework.

¹ Decision and Order No. 23121, Docket No. 03-0372, Exhibit A (Dec. 8, 2006).

² See Order No. 23699, Docket No. 2007-0331 (Oct. 9, 2007) at 13-15.

³ Framework, Section III.C.2.b(vi). Reporting is to be done “sufficiently early so that the Commission can correct defects or eliminate uncertainties without endangering project milestones.” *Id.*

⁴ Comments of the Independent Observer Regarding Hawaiian Electric Company’s Final, Proposed Request for Proposals (May 19, 2008) and Supplemental Comments and Recommendations of the Independent Observer Regarding Hawaiian Electric Company’s Final, Proposed Request for Proposals (June 18, 2008); Letter order approving issuance of RFP, Docket No. 2007-0331 (June 18, 2008)

<http://www.heco.com/vcmcontent/GenerationBid/HECO/CommissionLetter.PDF>.

II. Reasonableness of HECO's Preparation for Receipt of Bids

Following issuance of the final RFP and in preparation for receipt of bids, HECO working in collaboration with the IO undertook the following activities: publicized the RFP, held a bidders conference, answered questions posed by prospective bidders, prepared a detailed bid evaluation protocol, and conducted mock bids to test the Company's proposed approach for the price evaluation. Each of these steps is addressed below.

A. Publicizing the RFP

Following approval of the RFP, HECO posted the RFP on its RFP website on June 19, 2008. HECO also sent an email notification regarding the Commission's approval of the RFP to those who had submitted a Notice of Interest in response to HECO's Solicitation of Interest (the Solicitation of Interest had been issued prior to the draft RFP). HECO also issued a press release regarding issuance of the final RFP. These efforts were in addition to previous outreach efforts in connection with the Solicitation of Interest and draft RFP, which included sending email notices to a list of renewable energy developers and trade associations. HECO's efforts to publicize the RFP to maximize the competitive response were appropriate.

B. Bidders Conference; Questions and Answers

HECO held a bidders conference on July 14, 2008, where it provided an overview of the bid response package and answered bidder questions. The IO summarized its role in the RFP process. Subsequently, in response to bidder questions, HECO provided official written responses, which had been previously reviewed and approved by the IO as appropriate.

C. Bid Evaluation Protocol

Prior to receipt of the bids, HECO developed a protocol document that described the bid receipt and bid evaluation process in detail and included copies of summary documents that would be used to review the proposals at each stage of the evaluation. These included check lists for eligibility and threshold requirements and the detailed evaluation sheets for each non-price criterion. These evaluation sheets were designed to serve as the basis for documenting and scoring each proposal on a non-price basis. The document also described the methodologies to be used to score and rank bids from a price and non-price perspective, the methods to be used to combine price and non-price scores, and other factors to be considered by HECO in selecting the short list. The document was provided to the IO and comments and suggestions made by the IO were included in the final Protocol document. The document was agreed to and completed prior to receipt of bids. Separately and in conjunction with the bid evaluation protocol, HECO developed in collaboration with the IO the specific weightings for the non-price factors to be used in the bid evaluation. Together, the detailed bid evaluation materials were designed to provide

more specific guidance for the bid evaluation. They were thoroughly reviewed by the IO for consistency with the RFP documents and for reasonableness.

D. Test Bids

The Price Evaluation Team, at the request of the IO, prepared a few sample bids and evaluated the bids from a price screening perspective prior to receipt of the bids. The test bid process was used to describe the price evaluation methodology and process, including the comparison of the costs and benefits (avoided costs) associated with each individual bid.

III. Reasonableness of Bid Evaluation and Short Listing Process

A. Receipt of Bids

The due date for bids was September 25, 2008. The bids submitted were for a variety of different technologies with a collective total MW capacity that was several times the 100 MW sought by HECO. The bids received are summarized in the confidential appendix.⁵

B. Schedule for Bid Evaluation

Shortly after the receipt of bids, HECO prepared a schedule for the completion of the bid evaluation and shortlist selection process, which was shared with the evaluation team and the IO. The schedule was based on the milestones set forth in Section 3.1 of the RFP, which provided for selection of the shortlist in December 2008.

C. Eligibility Requirements

Initially, the bids were reviewed for compliance with seven eligibility requirements, which pertained to completeness of the proposals, timeliness of submission, and compliance with minimum and maximum size requirements. One of the bids was rejected, with the approval of the IO, because the bid was submitted late and the proposal was incomplete. One other bid was for a project within the 5 MW exemption from competitive bidding, and the bidder, upon being informed that it could seek a power purchase agreement from HECO without participating in the competitive bidding process, withdrew its bid (this was acceptable both to HECO and the IO).

HECO also received bids that met all the eligibility requirements except the 100 MW size limit and were classified as non-conforming bids (these bids are further discussed in Section III.F of this report). The other bids satisfied all of the eligibility requirements.

⁵ Earlier in September 2008, HECO posted on the RFP website information pertaining to term sheets for the grandfathered renewable energy proposals, in accordance with Section 1.3 of the RFP.

D. Threshold Requirements

The RFP contained four threshold requirements:

- Demonstration of site control, at least with a letter of intent
- Experience in development and operation of at least one similar facility
- Willingness to post security
- The proposed PPA with Bidder will not subject HECO to Variable Interest Entity (“VIE”) treatment

All of the remaining bids were passed through the threshold requirements screen, although a few of the bids were questionable with respect to whether they strictly satisfied one of the standards. The Company, with agreement of the IO, decided that a liberal approach was appropriate to enhance consideration of a greater variety of bids. Hence, all of the remaining bids passed the threshold requirements screen in order that the price and non-price evaluations would be conducted.

E. HECO Clarification Questions

Following the initial review of the bids, HECO and the IO developed questions for the bidders that passed the eligibility and threshold screens. The questions sought clarification of the bids or additional information to ensure that there was adequate and clear information to facilitate evaluation of the bids. The questions were issued to bidders in October. All bidders receiving follow up questions responded. The responses to the questions along with the proposals received were considered in the bid evaluation process.

F. “Big Wind” Proposals

On October 20, 2008, HECO and its utility affiliates entered into an Energy Agreement with the Governor of Hawaii, the State Department of Business, Economic Development and Tourism, and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs as part of the Hawaii Clean Energy Initiative. Under the Energy Agreement, HECO committed with the assistance of the State of Hawaii to integrate up to 400 MW of wind power into the Oahu electrical system that is produced by one or more wind farms located on either the island of Lanai or Molokai and transmitted to Oahu via submarine cables.⁶ HECO also agreed to work with the developers of these “Big Wind” projects and the Commission to “bifurcate their project proposals from the ongoing Oahu RE RFP.”⁷

Following announcement of the Energy Agreement, HECO ceased evaluation of the proposed neighbor island or “Big Wind” projects in the context of this RFP and did not issue any follow-up questions since, pursuant to the Energy Agreement, these bids would

⁶ <http://hawaii.gov/news/files/2008/october/State-HECO%20Energy%20Agreement%2010.20.08.pdf>.

⁷ Energy Agreement ¶3. “The bifurcated RFP process to evaluate and select the best Big Wind project or projects will be led by Hawaiian Electric, with support from the State. Selection is contemplated to be conducted in conformance with the Competitive Bidding Framework using data submitted by developers in September 2008.”

be evaluated in a separate process. It is the IO's understanding that the process, once defined, would be subject to Commission review.

G. Non-Price Evaluation

Shortly after receipt of the responses from bidders, the members of HECO's Non-Price Evaluation Team began to undertake the non-price evaluation process. Team members were required to evaluate the eligible proposals for each of the non-price evaluation criteria consistent with their area of expertise.⁸ Members of the Non-Price Evaluation Team were provided with the evaluation sheets for the specific criteria for which they were responsible.

After the non-price evaluators completed their preliminary assessments, discussions were held with HECO's RFP Management team and draft documentation supporting the scoring was completed. At approximately the same time, the IO conducted an independent review. HECO's non-price assessment was then sent to the IO for review. At the IO's request, conference calls were held on different areas of the non-price evaluation to review HECO's evaluation relative to the IO's evaluation. After these calls, the members of HECO's Non-Price Evaluation Team completed their scoring and submitted the results to HECO's Generation Bidding Project Manager, who compiled the results and weighted the scores based on the pre-established weights for each criterion agreed to be HECO and the IO prior to submission of the bids. Taking into consideration the matters discussed with HECO's evaluators, the IO also completed its non-price evaluation of the bids. Based on the IO's review of HECO's non-price scores, the discussions with HECO and the IO's own scoring, the IO concluded that HECO's non-price evaluation of the bids was reasonable. A summary of results of the non-price evaluation is included in the confidential appendix.

H. Price Evaluation

The Price Evaluation was conducted roughly in parallel with the non-price evaluation. The pricing analysis was based on a comparison of the proposed costs for each proposal and indirect costs relative to the benefit of the proposal measured by the avoided system costs as a result of each resource avoiding or displacing energy on the HECO system. The cost side of the evaluation included the cost of energy (i.e. bid price x annual contract energy as identified by the bidder), imputed debt, and an energy storage adder for certain proposals (where it was deemed necessary but was not incorporated in a particular bid) to calculate a total system cost. From this information, the leveled cost in \$/MWh was calculated. The leveled bid proposal cost was then compared to the leveled avoided cost of the system. The system avoided cost reflects largely avoided fuel and variable operation and maintenance costs. The net leveled \$/MWh cost or benefit was then calculated, which was the price metric utilized. The IO reviewed the analysis, made a few suggestions that HECO incorporated, and concluded that the economic analysis was reasonable for purposes of selecting a short list. A summary of HECO's price evaluation is included in the confidential appendix.

⁸ In most areas, HECO employees were used as the evaluators. In areas where it was important to supplement available expertise, HECO retained external consultants.

I. Combining Price and Non-Price Scores; Bid Ranking

The next step in the process involved the compilation of the price and the non-price scores. The scores for each proposal were compiled and bids were ranked. Based on the bid evaluation protocol, the ranking and scoring of the proposals was based on two methods:

- **Ranking Approach.** The primary approach utilized was to rank each bid in the price and non-price evaluation categories, then weighting the rankings for price and non-price in accordance with the weighting set forth in the protocol (consistent with the RFP, price was weighted more than non-price). The highest combined ranked projects for price and non-price ranks had the best “scores.”
- **Point Approach.** The other approach utilized was to use the scores for the non-price evaluation and the \$/MWh net cost/benefit price evaluation for each project and to convert them to points with the most points awarded to the top ranked project in each (price or non-price) category and 0 points awarded to the lowest ranked project. Projects that had neither the best or worst scores received points based on the relationship of their scores to the highest and lowest scoring bids. The price and non-price scores, which were weighted in a similar manner as in the ranking approach, were then combined into a total point score.

Under both scoring systems, one project was ranked highest and one project was ranked lowest. There were slight order difference in other bids, but the differences were relatively small and did not affect short list selection. The confidential appendix contains the total scores and rankings for the various bids.

J. Shortlist Selection

The RFP provides that in addition to the total scores received by each bid, HECO would work with the IO to develop a “detailed evaluation and selection process and methodology” pursuant to which HECO could select a short list that could include a “diversity of resource characteristics, project sizes and other options to provide a more well-rounded portfolio of renewable resources.”⁹ The bid evaluation protocol provides that while total scores will serve as a major determinant in bid selection, the following factors would also be considered in the selection of the short list:

- The ranking of bids from a price and non-price perspective
- Diversity of resource types
- Diversity of resource sizes
- Performance standards which are subject to bid
- Other options
- Time requirements to undertake the Interconnection Requirements Studies

⁹ RFP Section Section 4.5.

Both HECO and the IO agreed that the highest ranked project should make the short list and the lowest ranked project should not make the short list. With regard to the other bids, HECO and the IO reached the same conclusion regarding which bids should make the short list, although the logic used in reaching their respective conclusions was somewhat different. The fact that different scoring systems and somewhat different approaches to short list selection led to the same result provided additional confidence to HECO and the IO that HECO's short list decisions were appropriate. Additional information on the short list selection process is contained in the confidential appendix.

In the course of the bid evaluation and short list selection process, HECO (and the IO) developed a number of questions and issues regarding the bids, including those that were short listed, regarding the status of project development and project viability. In this regard, HECO will continue to conduct due diligence regarding all of the bids in the next phase of the process, which includes the conduct of interconnection studies, and will set forth conditions for at least one project regarding the achievement of certain project development milestones for it to remain on the short list, which the IO views as being appropriate.

IV. Process-Related Matters

Under the Framework, the IO is required to monitor the soliciting utility's adherence to its Code of Conduct and to monitor communications with bidders for compliance with communications protocols.¹⁰ The IO has performed these functions. In the phase of the competitive bidding process covered by this report, there is no indication of any lack of adherence to HECO's Code of Conduct or any communications not in accord with HECO's Procedures Manual for this RFP.¹¹

Another process-related matter that arose following the issuance of the RFP pertained to the representation of HECO by Goodsill Anderson Quinn & Stifel A Limited Liability Law Partnership LLP ("Goodsill"), which also represents Castle & Cooke, Inc. ("Castle & Cooke") in other unrelated matters. Goodsill advised HECO with respect to matters relating to the Framework, but discontinued working on the RFP after submittal of the draft RFP when it became apparent that Castle & Cooke would actively participate in the RFP process and potentially submit a bid. Following issuance of the RFP, Castle & Cooke consented to Goodsill representing and advising HECO with respect to the Renewable Energy RFP and related matters. HECO reported this development to the IO and, following discussion of the matter, HECO posted a disclosure statement on the

¹⁰ See Framework Section III.C.2.b.

¹¹ Since the RFP did not allow for HECO or any HECO affiliate to participate as a bidder, the Framework's provisions regarding monitoring interactions between the soliciting utility's evaluation team and any affiliated bidder are not applicable.

HECO RFP website in a form acceptable to the IO.¹² No person has commented on the disclosure statement.

As discussed in Section III.F of this report, HECO agreed in the Energy Agreement (as part of the Hawaii Clean Energy Initiative) to work with the developers of the “Big Wind” projects and the Commission to bifurcate their project proposals from this RFP. It is not anticipated that the process to be utilized regarding assessment of the “Big Wind” proposals will affect the continuation of this RFP process, which will include interconnection studies regarding the shortlisted projects, detailed evaluation, selection of the award group, contract negotiations, and regulatory approval of power purchase agreements.

V. Conclusion

For the reasons set forth herein, New Energy Opportunities, the IO for HECO’s Renewable Energy RFP, is of the view that HECO’s evaluation of bids and short listing decisions were appropriate and in compliance with the RFP, as approved by the Commission, and the Framework.

Dated: January 23, 2009

Respectfully submitted,

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¹² See RFP Documents and Updates, September 22, 2008 Update,
<http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610c510b1ca/?vgnextoid=a42a723e01ef5110VgnVCM1000005c011bacRCRD&vgnextfmt=default&cpsextcurrchannel=1>.

CONFIDENTIAL APPENDIX

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EXHIBIT 4

**New Energy Opportunities, Inc.,
“Report of the Independent
Observer on Hawaiian Electric
Company’s Selection of the Final
Award Group—Renewable Energy
RFP,” Docket No. 2007-0331
(Nov. 13, 2009)
(Copy-Public Version)**

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

DOCKET NO. 2007-0331

In the Matter of
PUBLIC UTILITIES COMMISSION

Instituting a Proceeding
Related to a Competitive
Bidding Process for Renewable
Energy on Oahu

**REPORT OF THE
INDEPENDENT OBSERVER ON
HAWAIIAN ELECTRIC COMPANY'S
SELECTION OF THE FINAL
AWARD GROUP—
RENEWABLE ENERGY RFP**

PREPARED BY:
New Energy Opportunities, Inc.

November 13, 2009

INDEPENDENT OBSERVER'S FINAL AWARD GROUP REPORT—HECO RENEWABLE ENERGY RFP

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Confidential Appendix

INDEPENDENT OBSERVER'S FINAL AWRD GROUP REPORT—HECO RENEWABLE ENERGY RFP

I. Overview

Pursuant to the Hawaii Public Utilities Commission's Framework for Competitive Bidding ("Framework"),¹ New Energy Opportunities, Inc. ("NEO"), the Independent Observer ("IO") for Hawaiian Electric Company, Inc.'s Renewable Energy Request for Proposals ("RFP"),² hereby submits its report on Hawaiian Electric Company's detailed evaluation of bids previously shortlisted and its selection of the final award group in the Renewable Energy RFP. Hawaiian Electric Company, Inc. ("HECO") issued the RFP in June 2008 seeking proposals for the supply of up to approximately 100 MW of renewable energy resources to serve the island of Oahu under long-term power purchase agreements.

Where an Independent Observer is appointed to monitor a competitive bidding process under the Framework, the IO is required to report to the Hawaii Public Utilities Commission ("Commission") on monitoring results during each stage of the competitive process.³ The IO participated in the process leading up to the issuance of the RFP, advising HECO regarding the RFP design and submitting comments with respect to both the draft RFP and the final proposed RFP, which was subsequently approved by the Commission.⁴ The next stage of the competitive bidding process involved preparation of a detailed protocol for the evaluation of bids, receipt of bids, evaluation of the bids, and the decisions regarding which bids to short list. On January 23, 2009, the IO submitted a report pertaining to this stage of the competitive procurement process, which included a confidential appendix that addressed HECO's treatment of particular bids (hereinafter, "Short List Report").⁵

This report summarizes the evaluation process leading up to the short listing of bids and addresses the detailed evaluation of the shortlisted bids and HECO's selection of bids for the final award group. HECO plans to negotiate power purchase agreements with respect to the bids selected to the final award group. For the reasons set forth in this report, the IO concludes that HECO's detailed evaluation of the bids and selection of the final award group were reasonable and in accord with the RFP and the Framework.

¹ Decision and Order No. 23121, Docket No. 03-0372, Exhibit A (Dec. 8, 2006).

² See Order No. 23699, Docket No. 2007-0331 (Oct. 9, 2007) at 13-15.

³ Framework, Section III.C.2.b(vi). Reporting is to be done "sufficiently early so that the Commission can correct defects or eliminate uncertainties without endangering project milestones." *Id.*

⁴ Comments of the Independent Observer Regarding Hawaiian Electric Company's Final, Proposed Request for Proposals (May 19, 2008) and Supplemental Comments and Recommendations of the Independent Observer Regarding Hawaiian Electric Company's Final, Proposed Request for Proposals (June 18, 2008); Letter order approving issuance of RFP, Docket No. 2007-0331 (June 18, 2008)

<http://www.heco.com/vcmcontent/GenerationBid/HECO/CommissionLetter.PDF>.

⁵ Report of the Independent Observer on Hawaiian Electric Company's Bid Evaluation and Short List Selection Process—Renewable Energy RFP (Jan. 23, 2009).

II. The Initial Bid Evaluation and HECO's Short List Selections

As set forth in the Short List Report, bids were received by HECO in response to the RFP in September 2008. Of those bids, one bid was withdrawn since its small size (5 MW or less) allowed it to pursue a negotiated power purchase agreement with HECO without resort to competitive bidding. Another bid was rejected because it was submitted late, was incomplete and did not include a bid submittal fee.

Of the remaining bids, there were proposals to build wind farms on two neighboring islands that involved construction of a submarine cable to deliver the output of the proposed wind farms to Oahu, each having several hundred MW of nameplate generating capacity. Under the terms of the RFP, proposed contracts involving in excess of 100 MW of electrical output were non-conforming (although they would be considered under specified criteria).⁶ On October 20, 2008, HECO and its utility affiliates entered into an Energy Agreement with the Governor of Hawaii, the State Department of Business, Economic Development and Tourism, and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs as part of the Hawaii Clean Energy Initiative. Under the Energy Agreement, HECO committed with the assistance of the State of Hawaii to integrate up to 400 MW of wind power into the Oahu electrical system that would be produced by one or more wind farms located on either the island of Lanai or Molokai and transmitted to Oahu via submarine cables.⁷ HECO also agreed to work with the developers of these “Big Wind” projects and the Commission to “bifurcate their project proposals from the ongoing Oahu RE RFP.”⁸

Following announcement of the Energy Agreement, HECO ceased evaluation of the proposed neighbor island or “Big Wind” projects in the context of this RFP since, pursuant to the Energy Agreement, these bids would be evaluated in a separate process. On March 16, 2009, HECO submitted to the Commission in this docket, a confidential agreement between HECO and the two developers of the Big Wind projects that sets forth the agreement between the parties, which includes the undertaking of technical studies pertinent to these projects. As part of the agreement, the two developers and HECO agreed that each would develop 200 MW on each of the two islands, and, if one of them failed, the other would get most of MW contemplated under the agreement.⁹

In this letter, HECO stated that it had determined it should bifurcate these non-conforming bids from the conforming bids. It also stated that:

Any of the conforming bids projects that result in approved Power Purchase Agreements (“PPAs”) will have curtailment priority over any resulting Big Wind

⁶ RFP Section 2.7.

⁷ <http://hawaii.gov/gov/news/files/2008/october/State-HECO%20Energy%20Agreement%2010.20.08.pdf>.

⁸ Energy Agreement ¶3. “The bifurcated RFP process to evaluate and select the best Big Wind project or projects will be led by Hawaiian Electric, with support from the State. Selection is contemplated to be conducted in conformance with the Competitive Bidding Framework using data submitted by developers in September 2008.”

⁹ Letter from Robert A. Alm to the Commission dated March 16, 2009, attaching confidential agreement.

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projects. In effect, the conforming projects are being considered first, and Interconnection Requirements Studies are being initiated for the short-listed bids as soon as they provide the required project data for these studies.

The Commission has taken no action with respect to this filing. However, based on HECO's own representations, the initiative to pursue the "Big Wind" projects were not intended to have an impact on the Company's plan to pursue efforts to complete the evaluation process with respect to short listed bids in the Renewable Energy RFP.

As a consequence of the foregoing, there were fewer bids that remained for the initial evaluation in this RFP. Following the initial review of these bids, HECO, with the input of the IO, sent requests seeking clarification of the bids or additional information to ensure that there was adequate and clear information to facilitate evaluation of the bids. The questions were issued to bidders in October 2008. All bidders receiving follow up questions responded. The responses to the questions along with the proposals received were considered in the initial bid evaluation process.

As set forth in the Short List Report, HECO conducted both a price evaluation of the bids and a non-price evaluation of the bids. The evaluation was based on a bid evaluation protocol developed by HECO and approved by the IO. The document described the methodologies to be used to score and rank bids from a price and non-price perspective, the methods to be used to combine price and non-price scores, and other factors to be considered by HECO in selecting the short list. The document was provided to the IO and comments and suggestions made by the IO were included in the final Protocol document. The document was agreed to and completed prior to receipt of bids. Separately and in conjunction with the bid evaluation protocol, HECO developed in collaboration with the IO the specific weightings for the non-price factors to be used in the bid evaluation. Together, the detailed bid evaluation materials were designed to provide more specific guidance for the bid evaluation. They were thoroughly reviewed by the IO for consistency with the RFP documents and for reasonableness.

This approach was consistent with the "closed bidding process" described in Section 4.4 of the RFP:

HECO will be employing a closed bidding process for this solicitation in accordance with Section IV.H.3 of the Competitive Bidding Framework. The specific weights of the evaluation criteria will not be provided in the RFP or disclosed in advance. The price and non-price evaluation models to be used will not be provided to Bidders, but will be reviewed by the IO and will be documented prior to the opening of any bid proposals. In addition, all input assumptions for the analysis will be provided to the IO and will be secured prior to receipt of bids.

HECO also retained flexibility to reflect unanticipated considerations in consultation with the IO.¹⁰

¹⁰ RFP Section 4.4.

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The pricing analysis was based on a comparison of (a) the proposed costs for each proposal and associated indirect costs to (b) the benefit of the proposal measured by the avoided system costs as a result of each resource avoiding or displacing energy on the HECO system. The cost side of the evaluation included the cost of energy (i.e. bid price multiplied by the annual contract energy as identified by the bidder), imputed debt, and an energy storage adder for certain proposals (where it was deemed necessary but was not incorporated in a particular bid) to calculate a total system cost. From this information, the leveled cost in \$/MWh was calculated. The leveled bid proposal cost was then compared to the leveled avoided cost of the system. The system avoided cost reflects largely avoided fuel and variable operation and maintenance costs. The net leveled \$/MWh cost or benefit was then calculated, which was the price metric utilized. The IO reviewed the analysis, made a few suggestions that HECO incorporated, and concluded that the economic analysis was reasonable for purposes of selecting a short list.

A non-price evaluation was also conducted by HECO and the IO. As described in the Short List Report, the IO concluded that HECO's non-price evaluation of the bids was reasonable.¹¹

Bids were ranked based on two separate methodologies: a ranking approach and a point approach. Under both scoring systems, one project was ranked highest and one project was ranked lowest. There were slight order differences in other bids, but the differences were relatively small and did not affect short list selection.

The RFP provides that in addition to the total scores received by each bid, HECO would work with the IO to develop a "detailed evaluation and selection process and methodology" pursuant to which HECO could select a short list that could include a "diversity of resource characteristics, project sizes and other options to provide a more well-rounded portfolio of renewable resources."¹² The bid evaluation protocol provides that while total scores will serve as a major determinant in bid selection, the following factors would also be considered in the selection of the short list:

- The ranking of bids from a price and non-price perspective
- Diversity of resource types
- Diversity of resource sizes
- Performance standards which are subject to bid
- Other options
- Time requirements to undertake the Interconnection Requirements Studies

Both HECO and the IO agreed that the highest ranked project would make the short list and the lowest ranked project would not make the short list. With regard to the other bids, HECO and the IO reached the same conclusion regarding which bids would make the short list. With regard to one of the short listed projects, there were substantial questions regarding the status of project development and project viability. HECO set forth conditions for this project as to milestones it would need to satisfy for it to remain under consideration, which the IO viewed as appropriate.

¹¹ Short List Report at 5.

¹² RFP Section Section 4.5.

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On December 30, 2008, HECO notified bidders regarding the selection or non-selection to the short list. A number of bids were selected with a collective total amount of MW of installed capacity that substantially exceeded the “up to approximately 100 MW” target of the solicitation.¹³

III. The Detailed Bid Evaluation and Selection of the Award Group

The next stage of the competitive bidding process is the detailed evaluation of the bids and the selection of those bidders with whom HECO will negotiate power purchase agreements—the final award group. The purpose of this stage of the bidding process is set forth in Section 4.6 of the RFP:

The objective of the evaluation is to select the Proposal(s) which provide the greatest value consistent with the Company’s stated objectives and requirements as set forth in the 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. The Company prefers viable projects which provide low cost with limited risk and provide resource diversity, operational reliability, operational flexibility, and ability to meet the required Performance Standards. Ranking of the projects will be based on a variety of these and related factors.

With regard to the overall goal of acquiring the output from renewable resources to satisfy requirements under Hawaii’s Renewable Portfolio Standards law, objectives regarding the selection of projects include: cost-effectiveness; willingness and ability to adhere to performance standards necessary to protect HECO system reliability; ability to achieve commercial operation by the end of 2014, preferably before 2013, giving consideration to the need for transmission upgrades; willingness to agree to modify the performance standards in the future, if necessary, due to future penetration of renewable resources; and resource diversity.¹⁴

Pursuant to the RFP, the shortlisted bidders were required to post a \$3/kW bid deposit based on the nominal capacity of their proposed project. They were also required to post a deposit with respect to payment for the interconnection study. All of the shortlisted bidders complied with these requirements.

This stage of the evaluation process included an assessment as to whether the installation of the projects would or would not result in any adverse impacts to the operations and reliability of the HECO system or to HECO’s customers. This was done through a review of the technical aspects of each project, including the information obtained through the Interconnection Requirement Study (“IRS”). It also included an assessment of the overall

¹³ See RFP Section 1.1.

¹⁴ See RFP Sections 1.1, 1.2, 2.1, 2.2, 4.4, 4.4.2.1.

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costs and benefits of each project, including any costs required to meet HECO's performance standards, as well as a project risk assessment.

Face-to-face meetings or teleconferences were held with all bidders in January 2009 after short list selection. Bidders were informed by HECO of the schedule going forward, HECO's requirements regarding performance standards, and the requirements for undertaking the interconnection studies. In addition, the parties discussed the bidder's proposal, including any follow-up questions about the proposal and project.

The bidder that was conditionally shortlisted was asked to provide evidence that it could achieve a key project development milestone in a reasonable time and that it could address certain concerns of HECO regarding project viability. After the bidder provided some information in writing and after a discussion with HECO was held regarding the matter, the bidder requested an extension of the time set forth by HECO to meet these conditions. HECO did not want to delay the detailed evaluation and award group selection process, and, as a consequence, the Company did not grant the request. However, HECO allowed the bidder to remain on the short list, which gave the bidder the opportunity to address these issues. At the bidder's request, HECO suspended further work on the interconnection study pertaining to the bidder's project. No additional information was provided to HECO relating to the project development milestone and the other concern regarding project viability. This bidder's proposal was not selected as part of the final award group.

Several bidders had excepted to the provisions of the Model PPA regarding excess energy curtailments and did not provide proposals to meet the more stringent performance standards regarding ramp rates and frequency regulation. In April 2009, HECO requested that these bidders provide proposals that could meet the more stringent performance standards to address HECO's concerns regarding impacts on its system and to provide proposals involving conformance with the Model PPA's provisions regarding excess energy curtailment so that different bids could be compared on an "apples to apples" basis.¹⁵ Responses to the requests by bidders varied from substantial changes to the original proposal to address HECO's concerns to no changes from the original proposal. These responses as well as other proposal modifications, such as changes to the seller's development/ownership team, were taken into consideration by HECO in its evaluation.

HECO retained a consultant to perform the analysis regarding the interconnection requirements studies. The IRS process encountered several delays and was not completed in accordance with the schedule outlined in the RFP, which provided for completion of the studies in June 2009 and selection of the final award group in August 2009.¹⁶ The principal reason for the delay was due to delays in receipt of technical information from bidders or at least the type and quality of information required by HECO and its consultant.

Subsequently, HECO determined that the technical information available to the evaluation team was adequate to assess the relative technical risks associated with each project and

¹⁵ Under the Model PPA, if HECO properly curtailed the seller's facility due to excess energy conditions, HECO would have no payment obligations to the seller for the curtailed energy.

¹⁶ RFP Section 3.1.

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that it was important to make final award selections in order that the RFP process not be further delayed. An economic evaluation of competing bids was conducted under a variety of assumptions, including compliance with various levels of performance standards. The evaluation addressed from a portfolio perspective the combination of bids that were most attractive from an economic standpoint. The results of the different scenarios all led to the same conclusion.

As part of the detailed evaluation process, a risk assessment was conducted as well as a comparison of the positive attributes of different project proposals. Considerations included technology risk associated with proposed equipment, the bidder's ability and willingness to meet performance standards necessary for HECO to maintain system reliability, the prospect for community opposition to derail a project, other factors that could affect the ability of a project to be successfully developed and placed into operation in the timeframe desired under this RFP, bidder development experience, and given the bidders' proposals and markups to the Model PPA, the prospect for HECO and the bidder to reach agreement on a PPA in a reasonable timeframe. These non-price considerations supported the economic results. In fact, as a general matter, the differences with respect to these non-price factors were, in the IO's opinion, much more compelling than the differences in the economic evaluation.

The IO also compared the detailed evaluation against the initial evaluation conducted prior to short listing to assess whether the conclusions were consistent. They were consistent with both the ranking and scoring approaches used in the initial evaluation.

For all of the foregoing reasons, the IO concurred with HECO's decisions regarding proposals that were selected to be in the final award group and those that were not selected. From all of these sources of information, the IO was persuaded that there was sufficient information to make a decision and additional information that could result from further work on or completion of the interconnection studies would not change the result. In the IO's opinion, delaying a decision would delay PPA negotiations with the winning bidders and would drag out the process in a way that might cause non-winning bidders to spend additional funds on their projects that they might otherwise not spend.

IV. Process-Related Matters

This RFP was the first that HECO or any of its affiliates have conducted under the Competitive Bidding Framework established by the Commission. The bid evaluation process was conducted in a manner that was somewhat different than that envisaged by HECO or the IO when the RFP was issued in June 2008 following the Commission's approval. These differences are described in this section of the report. It is important to note that in the IO's opinion none of these process-related issues affected the conclusion articulated in the previous section that HECO made the proper final award group selections in accordance with the RFP and the Framework.

INDEPENDENT OBSERVER'S FINAL AWARD GROUP REPORT—HECO RENEWABLE ENERGY RFP

Under the Framework, the IO is required to monitor communications with bidders, as well as monitoring contract negotiations with bidders.¹⁷ The IO was informed of a number of meetings or conference calls with bidders and provided the opportunity to attend by conference call. The IO also received copies of a great many emails and attachments between HECO and bidders. However, toward the latter stage of this process, it became apparent that this practice of notification and being copied on emails was not being done in a totally systematic fashion. The IO took several actions. First, the IO requested, and HECO agreed, that in the future (a) the IO would be copied on all outgoing emails to bidders, bidders would be requested to copy the IO on all emails to HECO (and if they did not do so, HECO would copy the IO) and (b) the IO would be informed of all conference calls and meetings with bidders and provided with the opportunity to attend by conference call. Second, the IO requested and received (a) a log of correspondence and calls with bidders and (b) specific emails and documents that the IO had not previously received. The IO reviewed the documents and concluded that there was no information that suggested that HECO's decisions regarding the final award group was erroneous or unreasonable.

Another difference pertained to the manner in which the evaluation process was conducted. In the RFP, HECO requested bidders to provide a variety of bids based on meeting various degrees of maximum ramp rate and frequency regulation requirements. HECO planned to evaluate measures that it could take itself in combination with different measures generators would take to arrive at an optimal approach to maximize the integration of renewable energy on Oahu:

These integration challenges can be addressed by various approaches. One such approach would be to have all renewable energy providers incorporate design features into their projects that can address all of the system integration requirements identified by the utility. Such features could include adherence to strict performance standards, installation of equipment and technology to mitigate fluctuations such as power conditioning equipment, installation of energy storage devices, self-curtailment of output, and enhanced forecasting ability.

The contrasting approach would be for the utility to incorporate grid side mitigation measures such as operating with higher levels of regulating reserve, operating its units in non-economic dispatch modes, installing energy storage devices, and installing more quick start and fast response generation.

The optimal solution to this integration challenge is to involve some level of cooperation and contribution from both the suppliers and the utility, in arriving at a combination of technical and operating procedures that maintain system reliability at a reasonable cost to customers.¹⁸

It appears that the technical studies and planning that would have been required to achieve this optimization approach based on utility grid side measures in conjunction with different levels of developer investments to meet different levels of performance standards

¹⁷ See Framework Section III.C.2.b.

¹⁸ RFP Section 2.2, p. 9.

INDEPENDENT OBSERVER'S FINAL AWARD GROUP REPORT—HECO RENEWABLE ENERGY RFP

did not materialize. There were several reasons for this. At about the same time the bid short listing decisions were being made in December 2008, HECO was negotiating the “Big Wind Agreement.” HECO has told the IO that as part of this effort, HECO would conduct system integration studies to consider measures necessary for integrating large amounts of intermittent energy into HECO’s system. However, such studies would not be completed within the timeframe considered for this RFP. As a result, HECO conducted qualitative assessments of the feasibility of grid side measures and encouraged bidders to provide pricing alternatives that would meet the RFP’s stricter levels of performance standards.¹⁹

While the evaluation process differed somewhat from what was originally envisaged, the IO is comfortable that based on review of the bids the “mix and match” evaluation approach articulated in the RFP, had it occurred, would not have changed the projects selected for the award group. Moreover, HECO made clear to all bidders its preference for bids that met the stricter performance standards. Circumstances change during competitive bidding processes and it appears that HECO’s approach was consistent with what appears to be government policy in Hawaii to maximize the penetration of renewable resources. HECO acted consistently with those objectives by emphasizing the importance of meeting the stricter performance standards which would likely facilitate the penetration of larger sources of intermittent renewable energy in the future.

In the course of this RFP, HECO has notified losing bidders that they are entitled to a “general assessment” of their bids pursuant to Section IV.H.4.b of the Framework. Several conference calls were held with losing bidders. One losing bidder, during a “general assessment” conference call and in subsequent correspondence, has taken a challenging posture with respect to its non-selection. During the conference call, HECO requested that the bidder provide it with questions in writing and HECO has responded in writing. As of this date, there has been no response from the bidder.²⁰

V. Conclusion

For the reasons set forth herein, New Energy Opportunities, Inc., the IO for HECO’s Renewable Energy RFP, is of the view that HECO’s detailed evaluation of bids and selection of the final award group was appropriate and in compliance with the RFP, as approved by the Commission, and the Framework. The specifics of the detailed

¹⁹ A contributing factor may have been that the Renewable Energy Infrastructure Program pursuant to which HECO could install its own energy storage and other devices that would promote renewable energy integration, which is referenced in Section 2.2 of the RFP, has not yet been approved by the Commission.

²⁰ Under Sections III.B.8 and V the Framework, a bidder has the right to pursue an expedited dispute resolution procedure provided by the Commission after the utility, the IO, and the bidder have attempted to resolve a dispute.

INDEPENDENT OBSERVER'S FINAL AWARD GROUP REPORT—HECO RENEWABLE ENERGY RFP

evaluation and final award group selection are set forth in the confidential appendix to this report.

Dated: November 13, 2009

Respectfully submitted,

NEW ENERGY OPPORTUNITIES, INC.

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INDEPENDENT OBSERVER'S FINAL AWARD GROUP REPORT—HECO RENEWABLE ENERGY RFP

CONFIDENTIAL APPENDIX

Confidential Information Deleted Pursuant to Protective Order No. 23875

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EXHIBIT 5

Map Depicting the Location of Seller's Facility

Kalaeloa SunPower Facility and 46kV Line Extension

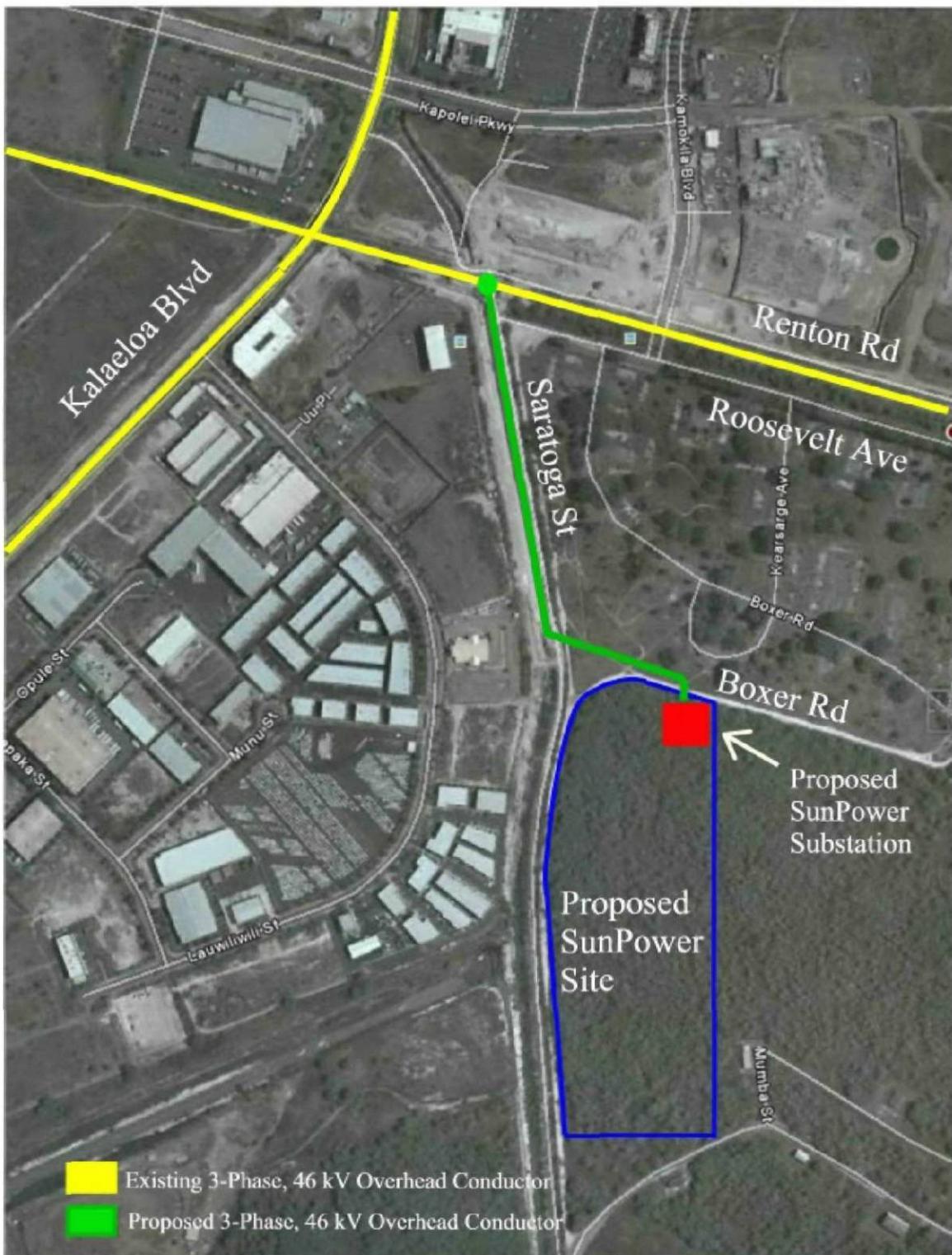


EXHIBIT 6

**Interconnection Requirements
Study (“IRS”) Letter Agreement
dated March 13, 2009 (Copy)**

Hawaiian Electric Company, Inc.

**Interconnection Requirements Study (“IRS”) Letter
Agreement dated March 13, 2009**

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EXHIBIT 7

**Interconnection Requirements
Study dated July 2, 2010**

**(Confidential and Subject to
Protective Order)**

Hawaiian Electric Company, Inc.

**Renewable Energy RFP
Interconnection Requirements Study – SunPower
Corporation**

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EXHIBIT 8

Pricing Structure and Negotiations Support (Redacted Copy)

EXHIBIT 8

PRICING STRUCTURE AND NEGOTIATIONS

A. Pricing

Energy payments by the Hawaiian Electric Company, Inc. (“Hawaiian Electric” or “HECO”) to Kalaeloa Solar Two, LLC (“Kalaeloa Solar”) will be based on the pricing schedule provided in Appendix D of the Power Purchase Agreement (“PPA”), dated February 18, 2011 for the energy delivered by Kalaeloa Solar to Hawaiian Electric. Energy may not be provided by Kalaeloa Solar for such times that Kalaeloa Solar’s Facility is out of service for planned maintenance or due to forced outages, and subject to the conditions in the PPA. The approximate amount of energy assumed to be delivered by Kalaeloa Solar for the avoided energy cost analysis contained herein is on average 11,415 MWh per year as shown on Attachment 8F of this Exhibit. Prices for each MWh of energy for the term of the agreement are listed in Attachment 8A of this Exhibit. The pricing includes interconnection costs from the Facility to the Point of Interconnection¹. No pricing adjustments will be made for differences between the actual interconnection cost and the estimated interconnection cost

B. Pricing Structure Negotiations

As explained in Section I.C of the instant application for approval of the PPA, Hawaiian Electric received renewable energy project proposals, including pricing proposals, in response to its Renewable Energy Request For Proposals (“RFP”), issued on June 19, 2008. The Kalaeloa Solar project was advanced to the short list and eventually to the Final Award Group.

As also explained in the application, during the course of detailed evaluation of the short-listed proposals, Hawaiian Electric identified reliability concerns associated with Kalaeloa Solar’s project at the [REDACTED] size as proposed. Subsequently, Kalaeloa Solar proposed revising their project size to 5 MW and revised their price higher to reflect the reduced sized project. During the course of negotiations, Hawaiian Electric and Kalaeloa Solar subsequently agreed to a stepped pricing structure that starts at \$191.40/MWh for the first year and escalates at a lower 3% per year for the next 11 years, then reduces the Year 13 price to \$212.10/MWh and eliminates further annual escalation for the remainder of the term. This equates to a levelized price of \$218.28/MWh.

Also explained in the application, in late 2010, during the course of the final negotiations, Kalaeloa Solar notified Hawaiian Electric that they were unable to reach agreement on terms of a lease for their proposed site. As a result, Kalaeloa Solar proposed to relocate their project from the original site to a subleased parcel located on land owned by the Department of Hawaiian Home Lands. Because the new location offered a slightly lower estimated interconnection cost, Hawaiian Electric and Kalaeloa Solar negotiated a further reduced price of \$191.14/MWh for the

¹ Pursuant to the “Definitions” section of the PPA, “Point of Interconnection” means the point of delivery of energy and/or Capacity supplied by Seller to Company where the Seller’s Facility interconnects with Company’s System.

first year and escalates at 3% per year for the next 11 years, then reduces the Year 13 price to \$211.84/MWh and eliminates further annual escalation for the remainder of the term. This equates to a levelized price of \$217.99/MWh.

Hawaiian Electric's key considerations in the negotiations with Kalaeloa Solar included, but were not limited to, (a) Hawaiian Electric's desire for additional renewable energy resources; (b) delinking the pricing of the Independent Power Producer ("IPP") energy from fossil fuel prices that complies with Section 269-27.2(c) of the Hawaii Revised Statutes²; (c) pricing of energy from other PV projects; (d) comparable to cost of generation based pricing developed in Hawaiian Electric's Feed-In Tariff program in Docket No. 2008-0273; and (e) the pricing of the proposal compared to Hawaiian Electric's long run avoided energy costs.

C. Pricing Evaluation

The final pricing structure and pricing level were deemed reasonable by Hawaiian Electric taking into consideration prices for PV projects, Hawaiian Electric's fuel pricing projections, long run avoided energy costs, uncertainties over future fuel oil prices, and pricing that is delinked from oil prices.

Pricing Compared to Hawaiian Electric's Long-Run Avoided Energy Cost

The reasonableness of Kalaeloa Solar's pricing was evaluated against Hawaiian Electric's long run avoided energy costs. The net present value ("NPV") of Hawaiian Electric's avoided energy cost was compared against the NPV of the payments that would be made to Kalaeloa Solar based on their pricing proposal and the estimated amount of energy to be delivered to Hawaiian Electric.

To perform the pricing evaluation, Kalaeloa Solar's proposal was compared against Hawaiian Electric's long-run avoided energy costs that were determined using Hawaiian Electric's February 2010 long-term fuel price forecast, which was based on the Department of Energy's Energy Information Administration Annual Energy Outlook issued in December 2009. Hawaiian Electric's February 2010 fuel price forecast is shown in Attachment 8B. Hawaiian Electric is fully aware that actual fuel prices can deviate markedly, either higher or lower from the forecasted fuel prices. In the future, Hawaiian Electric will increase use of biofuels instead of fossil fuels. Therefore, long-run avoided energy costs will also be a function of forecasted biofuel prices.

Using the Non-Utility Generator ("NUG")-in/NUG-out avoided cost methodology, which is described in more detail later in this exhibit, Hawaiian Electric determined that the

² Section 269-27.2(c) of the Hawaii Revised Statutes states, in relevant part, that "The commission's determination of the just and reasonable rate shall be accomplished by establishing a methodology that removes or significantly reduces any linkage between the price of fossil fuels and the rate for the nonfossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of nonfossil fuel generated electricity." [emphasis added]

accumulated NPV of avoided energy costs was about [REDACTED]. Hawaiian Electric also determined the accumulated NPV of the payments made to Kalaeloa Solar over the contract term was about [REDACTED]. It was therefore concluded that Kalaeloa Solar's pricing proposal was [REDACTED].

The inputs to the pricing evaluation and the results are described in more detail in the following sections.

1. Key Inputs

a. February 2010 Reference Fuel Price Forecast

Hawaiian Electric's fossil fuel price forecast uses as its foundation the forecast of World Oil Prices as published by the U.S. Department of Energy, Energy Information Administration in its Annual Energy Outlook ("AEO"). Hawaiian Electric first develops a mathematical correlation between historical Hawaiian Electric oil prices and historical World Oil Prices as published in the AEO. Then, using the AEO forecast of World Oil prices, the mathematical formula is applied to obtain the forecast of Hawaiian Electric oil prices.

The December 2009 AEO forecast of World Oil Prices is provided on Attachment 8C of this Exhibit. The mathematical correlations between historical Hawaiian Electric oil prices and historical World Oil Prices are as follows:

For Reference Low Sulfur Fuel Oil ("LSFO")

$$P_{LSFO} = 1.0446P_{WO} + 3.975, \text{ where}$$

P_{LSFO} is the price (\$ per barrel) of LSFO

P_{WO} is the World Oil Price (\$ per barrel) as published in the AEO

Example:

P_{LSFO} for 2010

$$P_{LSFO} = 1.0446P_{WO} + 3.975$$

$$P_{LSFO} = 1.0446 * (67.39518) + 3.975$$

$$P_{LSFO} = 74.37601 \text{ (real 2008 dollars)}^3$$

Conversion from real 2008 dollars to nominal 2010 dollars:

$$2010 \text{ GDPIP}D = 1.261946$$

$$2008 \text{ GDPIP}D = 1.225$$

$$\begin{aligned} 2010 / 2008 &= 1.261946 / 1.225 \\ &= 1.03016 \end{aligned}$$

³ AEO forecast was in real 2008 dollars. For Gross Domestic Product Implicit Price Deflators ("GDPIP"'), refer to AEO Macroeconomic Indicators GDP Chain-Type Index (http://www.eia.doe.gov/oiaf/aeo/aeoref_tab.html).

$$P_{LSFO} = 74.37601 * 1.03016$$
$$P_{LSFO} = 76.619 \text{ (nominal 2010 dollars)}$$

For Reference Diesel Fuel Oil (“Diesel”)

$$P_{Diesel} = 1.2843P_{WO} + 7.5367, \text{ where}$$

P_{Diesel} is the price (\$ per barrel) of diesel fuel

P_{WO} is the World Oil Price (\$ per barrel) as published in the AEO

Example:

P_{Diesel} for 2010

$$P_{Diesel} = 1.2843P_{WO} + 7.5367$$

$$P_{Diesel} = 1.2843 * (67.39518) + 7.5367$$

$$P_{Diesel} = 94.09233 \text{ (real 2008 dollars)}^3$$

Conversion from real 2008 dollars to nominal 2010 dollars:

$$2010 \text{ GDPIP}D = 1.261946$$

$$2008 \text{ GDPIP}D = 1.225$$

$$2010 / 2008 = 1.261946 / 1.225 \\ = 1.03016$$

$$P_{Diesel} = 94.09233 * 1.03016$$

$$P_{Diesel} = 96.930 \text{ (nominal 2010 dollars)}$$

The biodiesel price forecast was based on test biodiesel prices, and escalated with forecasted transportation diesel reference data from the 2010 Annual Energy Outlook.

The crude palm oil price forecast was based on the World Bank forecast of crude palm oil. Unlike the diesel and LSFO price projections, Hawaiian Electric does not have a long history of biofuel prices that can be used to mathematically correlate to other published forecasts. Hawaiian Electric has been searching for a practical and reasonable methodology to use, and may base its future biofuel forecasts primarily on the World Bank commodity forecast and information from the Food and Policy Agricultural Research Institute.

Hawaiian Electric’s February 2010 fuel price forecasts used for this analysis are shown in Attachment 8B.

b. Sales and Peak Forecast

In this analysis Hawaiian Electric uses its May 2010 sales and peak forecast for the pricing evaluation. This is a five-year forecast. The sales and

peaks are extrapolated to future years using Hawaiian Electric's latest long term forecast escalation rates. This forecast is shown in Attachment 8D of this Exhibit.

c. Resource Plan

The long-term resource plan used to determine the value of the energy that could be displaced by Kalaeloa Solar's energy production is shown in Attachment 8E of this Exhibit. This resource plan is based on Hawaiian Electric's IRP-4 plan.

For the purposes of this analysis, Hawaiian Electric is utilizing the same resources identified in its IRP-4 plan filed on September 30, 2008 in Docket No. 2007-0084. In the IRP-4 preferred plan, a 100 MW Firm Renewable Energy Generator and Waiau 3 Retirement or Emergency Reserve was identified as the next firm generation resource on the Hawaiian Electric system. The next IRP-4 resource addition was identified as a 50 MW Firm Renewable and Waiau 4 Retirement or Emergency Reserve. Attachment 8E shows the resource plan used in this analysis with the estimated timing of these future resources adjusted for Hawaiian Electric's May 2010 Sales and Peak forecast.

The need for future firm generating capacity will be further analyzed in Hawaiian Electric's next Adequacy of Supply filing and in future Clean Energy Scenario Planning processes.

d. Kalaeloa Solar's Energy Production

In the calculations provided herein, Hawaiian Electric is assuming a 5 MW facility with annual energy generation assumptions provided by Kalaeloa Solar. The facility is expecting to provide on average about 11,415 MWh of energy per year, or an estimated annual capacity factor of about 26%. Kalaeloa Solar's estimated annual energy production used in this analysis is shown in Attachment 8F of this Exhibit.

e. Kalaeloa Solar's Energy Pricing

Based on the stepped pricing structure that was agreed upon between Hawaiian Electric and Kalaeloa Solar, the price for each MWh of energy in the first year will be \$191.14 per MWh. The price will escalate at 3% for the next 11 years until it reaches \$264.58 per MWh in the year 12 of the contract. In year 13, the price per MWh will decrease by about 20% to \$211.84 per MWh. For the remaining term of the PPA, the energy price will remain at \$211.84 for each MWh of delivered energy. The contract pricing is shown in Attachment 8A of this Exhibit.

f. Discount Rate

Hawaiian Electric uses an after-tax discount rate to determine the present value of future expenditures. The after-tax discount rate is determined from Hawaiian Electric's composite incremental cost of capital on an after-tax basis. A discount rate of 7.447% was used in this analysis. Calculation of the after-tax discount is shown on Attachment 8H of this Exhibit.

g. Feed-In Tariff ("FIT") Project Impacts

An estimate was made of the level of Feed-In Tariff project impacts⁴. The estimate includes Tiers 1, 2 and 3 impacts. The estimate is shown in Attachment 8L of this Exhibit.

For the purposes of this analysis, the FIT impacts were modeled as "energy transactions" where they acted as "load modifiers." This has the effect of reducing the overall load that needs to be served by the central-station generating units and other as-available resources. See Section 3.b. below for further discussion of FIT impacts.

2. Results

a. Payments to Kalaeloa Solar for Energy

To calculate the NPV of the total payments to be made to Kalaeloa Solar for the energy over the 20-year term of the PPA, the price of energy (in \$ per MWh) in a particular year was multiplied by the projected amount of energy (in MWh) to be purchased from Kalaeloa Solar in that year. The cost relating to imputed debt was then added to the energy payment to calculate the total payment. (See the footnote on Attachment 8G regarding the inclusion of imputed debt in the calculation of avoided costs.) The annual payments were then discounted using the discount rate of 7.447%. The total accumulated NPV of the payments made to Kalaeloa Solar over the contract term was in 2010 dollars. The projected annual payments to Kalaeloa Solar are provided in Attachment 8G of this Exhibit.

b. Avoided Barrels of Fuel

By purchasing power from Kalaeloa Solar, Hawaiian Electric will avoid burning fuel. The amount of fuel Hawaiian Electric will avoid burning is calculated by a computer program that models how the generating units on the

⁴ On October 13, 2010, the Commission issued an Order Approving FIT Tiers 1 and 2 Tariffs, Standard Agreement, and Queuing and Interconnection Procedures and Concurring Opinion of Leslie H. Kondo, Commissioner in Docket No. 2008-0273. A FIT Tier 3 tariff is under Commission review.

Hawaiian Electric system will operate with and without the Kalaeloa Solar facility on the system. The scenario with Kalaeloa Solar is referred to as the “NUG-in” scenario and that without Kalaeloa Solar is referred to as the “NUG-out” scenario. The methodology is referred to as the “NUG-in/NUG-out” method. The difference in fuel consumption between the two scenarios is the amount of fuel Hawaiian Electric will avoid consuming. The amount of avoided barrels of fuel is shown in Attachment 8I of this Exhibit.

c. **Avoided Fuel Costs**

Avoided fuel costs are the products of the avoided barrels of fuel and the projected price per barrel of fuel in each year. Year-by-year avoided fuel costs are shown in Attachment 8I of this Exhibit.

d. **Avoided Variable Operation and Maintenance Costs**

By purchasing power from Kalaeloa Solar, Hawaiian Electric will avoid a portion of its variable operation and maintenance (“O&M”) costs. The amount of variable O&M costs Hawaiian Electric will avoid is calculated by a computer program that models how the generating units on the Hawaiian Electric system will operate with and without the Kalaeloa Solar Power facility on the system. The difference in variable O&M costs between the two scenarios is the amount of variable O&M costs Hawaiian Electric will avoid. Hawaiian Electric’s avoided variable O&M costs are shown in Attachment 8J of this Exhibit.

e. **Total Avoided Costs**

Hawaiian Electric’s total avoided costs are the sum of the avoided fuel costs and the avoided variable O&M costs. The annual avoided costs were discounted to 2010 dollars using the discount rate of 7.447%. The accumulated NPV of total avoided costs over the 20-year term of the PPA was approximately [REDACTED] as shown in Attachment 8J of this Exhibit.

f. **Comparison of Benefits and Costs**

The benefits in this analysis are the fuel and variable O&M costs that Hawaiian Electric would avoid by purchasing energy from Kalaeloa Solar, i.e., the benefits are Hawaiian Electric’s total avoided costs.

The costs to Hawaiian Electric would be the payments to be made to Kalaeloa Solar to purchase the energy, and the imputed debt liability. The accumulated NPV of the payments made to Kalaeloa Solar under the PPA pricing over the 20-year term of the PPA is approximately [REDACTED].

Based on the February 2010 fuel price forecast and the PPA pricing, [REDACTED]

g. Reasonableness Assessment

As a reasonableness check, Kalaeloa Solar's 2012 pricing was compared to Hawaiian Electric's filed monthly avoided energy cost. The filed February 2011 on-peak energy avoided cost rate was about \$197 per MWh. Kalaeloa Solar's pricing (\$191.14 per MWh) for 2012 is below Hawaiian Electric's filed avoided energy cost rate for February 2011. In the past two years, Hawaiian Electric's filed avoided on-peak energy cost rate has ranged from a low of about \$115 per MWh in May 2009 to a high of about \$235 per MWh in November 2008. Kalaeloa Solar's pricing is within this range. A table of Hawaiian Electric's filed avoided costs from November 2008 to February 2011 is shown in Attachment 8K of this Exhibit.

h. Kalaeloa Solar's Costs

As discussed in the application, Kalaeloa Solar submitted a proposal in response to Hawaiian Electric's Renewable Energy RFP. Kalaeloa Solar's initial pricing proposal was based on [REDACTED]. However, in the course of the detailed RFP evaluation, Hawaiian Electric identified reliability concerns associated with a [REDACTED]. Kalaeloa Solar proposed revising the project size to 5 MW, and offered to defer consideration of [REDACTED] until such time that Hawaiian Electric could sufficiently evaluate and address reliability concerns. A revised pricing structure was proposed by Kalaeloa Solar for further review and consideration by Hawaiian Electric, which led to pricing negotiations that resulted in the final pricing proposal described herein.

i. Price Comparisons

On December 27, 2007, Hawaiian Electric filed an application (Docket No. 2007-0425) for Commission approval of a Solar Energy Purchase Agreement ("SEPA") with Hoku Solar for a PV system with generating capability up to 300 kW to be located on the rooftop of Hawaiian Electric's Archer Substation. On May 13, 2008 the Commission issued Decision and Order No. 24225 approving, among other things, the terms and conditions of the SEPA, dated November 16, 2007. Part of the terms and conditions of the SEPA was a fixed energy pricing rate of \$0.19 per kWh over the 20-year term of the agreement.

On July 1, 2010, Hawaiian Electric informed the Commission that Hawaiian Electric and Hoku Solar have mutually terminated the SEPA due to Hoku Solar's inability to secure financing for the project.

The proposed levelized energy pricing for Kalaeloa Solar is about 3.1¢/kWh higher than the fixed Hoku Solar energy pricing. A contributing factor is that Kalaeloa Solar must secure its own project site, while Hoku Solar was going to use a site provided by Hawaiian Electric atop its Archer Substation.

On October 24, 2008, the Commission issued an Order Initiating Investigation in Docket No. 2008-0273, which instituted a proceeding to investigate the implementation of Feed-In Tariffs (“FIT”). Subsequent to the execution of many procedural steps in the proceeding, the Hawaiian Electric Companies⁵, on April 29, 2010, submitted for Commission approval its proposed FIT rates for Tier 3⁶ projects for Oahu, Hawaii and Maui and its proposed FIT Tier 3 Standard Agreement. Hawaiian Electric has proposed a FIT rate of \$197/MWh (19.7 ¢/kWh) for projects that utilize a 35% State of Hawaii tax credit and \$236/MWh (23.6¢/kWh) for projects that utilize the 24.5% refundable State of Hawaii tax credit. These prices will not escalate over time. Kalaeloa Solar’s pricing, leveled over 20 years, accounting for the effect of imputed debt is about \$221/MWh in 2010 dollars and about \$218/MWh, excluding the effect of imputed debt. The effect of imputed debt was not included in the determination of Feed-In Tariff rates.

On January 19, 2011, Hawaiian Electric filed an application (Docket No. 2011-0015) for Commission approval of a Power Purchase Agreement with IC Sunshine LLC (“IC Sunshine”) for as-available energy from a photovoltaic facility with approximate net output of up to 5MW. Based on the terms and conditions of the IC Sunshine PPA the energy price for the first year would be \$210 per MWh. The energy price, leveled over 20 years, would be about \$228/MWh in 2010 dollars.

The proposed energy pricing for Kalaeloa Solar for the first year is about \$19/MWh lower than the IC Sunshine’s energy pricing. The proposed energy pricing for Kalaeloa Solar, leveled over 20 years, is about \$7/MWh lower than the IC Sunshine’s leveled energy pricing.

These pricing comparisons were made to provide a frame of reference. It is important to note that Kalaeloa Solar’s pricing was the result of a competitive bidding process.

3. Sensitivities

a. Fuel Price Forecast

⁵ Hawaiian Electric Companies refers collectively to Hawaiian Electric, Hawaii Electric Light Company, Inc., and Maui Electric Limited.

⁶ For PV, Tier 3 applies to projects greater than 500 kW and less than or equal to the lesser of 5 MW or 1% of the system peak load. See Sections G.(1) and G.(2) of the Schedule FIT Tariff – Tier 3 – Oahu, see also HRS §235-12.5

As alternate scenarios, Hawaiian Electric performed pricing evaluations with its February 2010 low and high fuel price forecasts in consideration of the uncertainty of future fossil fuel prices. Hawaiian Electric determined that the accumulated NPV of avoided energy costs are approximately [REDACTED] [REDACTED], respectively.

Comparing the alternate fuel price scenarios to the NPV of payments made to Kalaeloa Solar over the contract term of approximately [REDACTED] Kalaeloa Solar's pricing proposal is about [REDACTED] than Hawaiian Electric long run avoided energy cost under the [REDACTED] forecast scenario, and about [REDACTED] fuel price forecast. The various fuel price scenarios illustrate the impact of fuel prices on Hawaiian Electric's long run avoided cost analysis.

b. Feed-In Tariff Impact

For the purposes of this analysis, Feed-In-Tariff project impacts expand from about 60 MW of FIT projects in 2012 to about 120 MW of FIT in 2015, which provides between 100 to 200 GWH by 2015, and remains at 120 MW and about 200 GWH for the remaining years of the long run avoided cost.

As a FIT scenario analysis, Hawaiian Electric performed pricing evaluations without any FIT impacts in the long run avoided energy cost. Hawaiian Electric determined that the accumulated NPV of avoided energy costs without any FIT impacts are approximately [REDACTED]. The NPV of payments made to Kalaeloa Solar over the contract term is approximately [REDACTED], which is about [REDACTED] than Hawaiian Electric's long run avoided energy cost under the reference fuel price forecast scenario and without FIT impacts.

The scenario illustrates the uncertainty of predicting future resources used in Hawaiian Electric's long run avoided cost analysis. Programs such as FIT which are modeled as "energy transactions" have the effect of reducing the overall load that needs to be served by the central-station generating units and other as-available resources. So while FIT resources may in some instances have a higher price than projects such as Kalaeloa Solar, the nature of the way they are modeled in the analysis may result in a reduction in Hawaiian Electric's avoided cost by displacing higher cost energy prior to energy being avoided by Kalaeloa Solar. If Kalaeloa Solar can displace higher cost energy, it may be concluded that Kalaeloa Solar [REDACTED] Hawaiian Electric's long run avoided costs.

D. Conclusion

Kalaeloa Solar's proposed pricing is reasonable considering that; (a) Kalaeloa Solar's energy pricing is within the range of Hawaiian Electric's historical filed avoided

energy costs; (b) Kalaeloa Solar's pricing structure meets the requirement of Hawaii Revised Statutes Section 269-27.2(c) in that there is no linkage between Kalaeloa Solar's energy price and Hawaiian Electric's cost of fossil fuels; (c) the stepped price structure will contribute to stabilizing Hawaiian Electric's overall energy prices over time; (d) Kalaeloa Solar's levelized price over 20 years is comparable to the cost of generation based pricing developed in Hawaiian Electric's Feed-In Tariff program in Docket No. 2008-0273; (e) the NPV of payments to Kalaeloa Solar are within the range of Hawaiian Electric's long-run avoided costs based on the February 2010 reference and high fuel price forecasts; and (f) the NPV of payments to Kalaeloa Solar are [REDACTED]
[REDACTED].

ATTACHMENTS TO EXHIBIT 8

- Attachment 8A** Kalaeloa Solar Pricing
- Attachment 8B** Hawaiian Electric's February 2010 Fuel Price Forecast
- Attachment 8C** AEO 2010 Early Release Forecast of World Oil Prices
- Attachment 8D** Hawaiian Electric's May 2010 Sales and Peak Forecast
- Attachment 8E** Long Term Resource Plan Used in This Analysis
- Attachment 8F** Kalaeloa Solar's Projected Energy Production
- Attachment 8G** Projected Annual Total Payments to Kalaeloa Solar
- Attachment 8H** Calculation of After-Tax Composite Incremental Cost of Capital
- Attachment 8I** Avoided Barrels of Fuel and Avoided Fuel Costs
- Attachment 8J** Avoided Variable O&M Costs and Total Avoided Costs
- Attachment 8K** Historical Filed Avoided Energy Costs – November 2008 to February 2011
- Attachment 8L** Hawaiian Electric Feed-In-Tariff Program Estimates

Year	Composite Annual Rate (\$/MWh)
2012	191.14
2013	196.87
2014	202.78
2015	208.86
2016	215.13
2017	221.58
2018	228.23
2019	235.08
2020	242.13
2021	249.39
2022	256.88
2023	264.58
2024	271.84
2025	271.84
2026	271.84
2027	271.84
2028	271.84
2029	271.84
2030	271.84
2031	271.84

Kalaeloa Solar Pricing

ATTACHMENT 8A

ATTACHMENT 8B

Hawaiian Electric February 2010 Fuel Price Forecast

Reference Forecast

Year	LSFO (\$/bbl)	Diesel (\$/bbl)	Biodiesel (\$/bbl)	CPO (\$/Metric Ton)
2010	76.62	96.93	196.40	785.40
2011	76.79	97.17	200.85	797.30
2012	84.86	107.14	216.42	830.62
2013	93.27	117.53	231.19	862.75
2014	100.32	126.25	242.94	894.88
2015	105.57	132.74	254.71	928.20
2016	111.27	139.81	267.67	912.73
2017	116.49	146.28	279.33	897.26
2018	122.18	153.33	292.12	881.79
2019	126.07	158.17	302.10	866.32
2020	130.14	163.25	311.78	850.85
2021	134.45	168.61	320.78	878.08
2022	139.01	174.29	332.04	906.18
2023	143.91	180.39	341.04	935.17
2024	148.56	186.17	349.15	965.10
2025	153.52	192.34	360.13	995.98
2026	157.97	197.88	370.50	1027.85
2027	163.43	204.68	381.94	1060.74
2028	169.22	211.87	394.73	1094.69
2029	175.95	220.24	409.09	1129.72
2030	181.79	227.50	420.56	1165.87
2031	189.39	236.93	436.43	1203.18

ATTACHMENT 8B cont.

Hawaiian Electric February 2010 Fuel Price Forecast

Low Forecast

Year	LSFO (\$/bbl)	Diesel (\$/bbl)	Biodiesel (\$/bbl)
2010	76.62	96.93	196.40
2011	67.13	85.32	195.16
2012	61.43	78.36	183.02
2013	59.12	75.58	176.17
2014	57.29	73.38	175.93
2015	54.34	69.80	174.21
2016	54.70	70.31	177.12
2017	55.18	70.96	178.54
2018	55.83	71.83	183.00
2019	56.52	72.74	184.43
2020	57.31	73.77	187.90
2021	58.15	74.85	192.25
2022	59.21	76.20	199.08
2023	59.97	77.17	203.03
2024	60.78	78.20	201.63
2025	63.02	80.98	205.00
2026	63.30	81.35	206.11
2027	63.84	82.06	210.78
2028	64.21	82.53	211.58
2029	65.36	83.98	211.30
2030	65.44	84.11	215.69
2031	68.11	87.48	223.83

ATTACHMENT 8B cont.

Hawaiian Electric February 2010 Fuel Price Forecast

High Forecast

Year	LSFO (\$/bbl)	Diesel (\$/bbl)	Biodiesel (\$/bbl)
2010	76.62	96.93	196.40
2011	125.88	157.58	295.86
2012	136.73	170.97	316.47
2013	149.80	187.10	333.24
2014	163.73	204.29	358.69
2015	170.80	213.03	381.06
2016	180.93	225.53	398.34
2017	189.29	235.87	415.01
2018	196.07	244.25	430.35
2019	201.09	250.47	441.44
2020	206.10	256.67	451.55
2021	209.67	261.10	459.27
2022	214.55	267.13	468.05
2023	219.51	273.26	475.71
2024	224.64	279.60	480.56
2025	236.27	293.93	494.64
2026	240.53	299.20	502.24
2027	244.64	304.29	519.55
2028	248.63	309.24	528.37
2029	257.01	319.59	532.89
2030	260.23	323.58	550.36
2031	271.17	337.12	571.13

ATTACHMENT 8C

AEO 2010 Early Release Forecast of World Oil Prices

	EIA World Oil (\$/bbl, Real 2008\$)
2010	67.40
2011	66.63
2012	72.94
2013	79.09
2014	83.84
2015	86.88
2016	90.10
2017	92.72
2018	95.59
2019	96.89
2020	98.14
2021	99.33
2022	100.54
2023	101.94
2024	103.12
2025	104.49
2026	105.35
2027	106.80
2028	108.28
2029	110.26
2030	111.49
2031	113.70

Year	Net Peak w/ DSM, MW	Sales w/ DSM, GWH
2010	1,242	7,411
2011	1,250	7,470
2012	1,268	7,571
2013	1,291	7,681
2014	1,326	7,811
2015	1,347	7,914
2016	1,362	8,002
2017	1,377	8,092
2018	1,392	8,183
2019	1,408	8,275
2020	1,424	8,368
2021	1,437	8,444
2022	1,450	8,521
2023	1,463	8,598
2024	1,476	8,677
2025	1,490	8,756
2026	1,504	8,838
2027	1,518	8,920
2028	1,532	9,004
2029	1,546	9,088
2030	1,561	9,173
2031	1,576	9,260

Hawaiian Electric May 2010 Sales and Peak Forecast

ATTACHMENT 8D

ATTACHMENT 8E

Hawaiian Electric Resource Plan Used In This Analysis

Year	Base Plan NUG Out	Alternate Plan NUG In
2011	Add Kahuku Wind (30 MW) [non firm] Add FIT [non firm]	Add Kahuku Wind (30 MW) [non firm] Add FIT [non firm]
2012	Add Airport DG (8 MW) H-Power Expansion to 73 MW (27 MW)	Add Airport DG (8 MW) H-Power Expansion to 73 MW (27 MW) Add Kalaeloa Solar (5 MW) [non firm]
2013	Honua (6 MW) [non firm]	Honua (6 MW) [non firm]
2014	Oahu Wind (70 MW) [non firm]	Oahu Wind (70 MW) [non firm]
2015		
2016	Add CIP-CT2 (113 MW)	Add CIP-CT2 (113 MW)
2017	Retire W3 (-46 MW)	Retire W3 (-46 MW)
2018		
2019	Convert CIP-CT1 to STCC (57 MW)	Convert CIP-CT1 to STCC (57 MW)
2020	Retire W4 (-46 MW) Add DG (50 MW)	Retire W4 (-46 MW) Add DG (50 MW)
2021		
2022	Add DG (50 MW)	Add DG (50 MW)
2023		
2024		
2025		
2026		
2027	Add DG (50 MW)	Add DG (50 MW)
2028		
2029		
2030	Add DG (50 MW)	Add DG (50 MW)
2031	Retire Kahuku (-30 MW)	Retire Kahuku (-30 MW)

Year	Approximate Kaleloa Solar Energy Production (MWh)	Approximate Kaleloa Solar Energy Production (MWh)
2012	11,977	11,977
2013	11,895	11,895
2014	11,843	11,843
2015	11,798	11,798
2016	11,763	11,763
2017	11,665	11,665
2018	11,598	11,598
2019	11,540	11,540
2020	11,513	11,513
2021	11,424	11,424
2022	11,387	11,387
2023	11,312	11,312
2024	11,288	11,288
2025	11,205	11,205
2026	11,165	11,165
2027	11,099	11,099
2028	11,065	11,065
2029	10,971	10,971
2030	10,910	10,910
2031	10,874	10,874

Kaleloa Solar's Projected Energy Production

ATTACHMENT 8E

ATTACHMENT 8G

Projected Annual Payments to Kalaeloa Solar

Year	Kalaeloa Solar Energy Charge (Current Year \$)	Kalaeloa Solar Imputed Debt ⁷ (Current Year \$)	Approx. Energy Payment (Current Year \$)	Approx. Energy Payment (Present Value)
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
Accumulated Net Present Value (2010\$)				

⁷ The imputed debt amount is not a payment made to the IPP. Rather, it is considered a cost incurred by the utility resulting from a determination that the PPA is deemed an operating lease, as explained in Section XII2.C. of the instant application. Since the imputed debt amount is considered a cost incurred by the utility, for the purposes of the pricing evaluation, that amount is considered a payment to the IPP.

ATTACHMENT 8H

Calculation of After-Tax Composite Incremental Cost of Capital

Cost of Capital Assumptions	Weight [A]	Rate [B]	Weighted Average [C] = [A] x [B]	After-Tax Weighted Average [D]
Short Term Debt	3.00%	1.00%	0.030%	0.018%
Long Term Debt (Revenue Bonds)	38.00%	6.00%	2.280%	1.393%
Hybrid	2.00%	7.00%	0.140%	0.086%
Preferred Stock	1.00%	7.00%	0.070%	0.070%
Common Stock	<u>56.00%</u>	10.50%	<u>5.880%</u>	<u>5.880%</u>
	100.00%		8.400%	7.447%

Tax Assumptions			Effective	
Federal Income Tax Rate	35.00%	[H]	32.89%	[E]
State Income Tax Rate	6.40%	[I]	<u>6.02%</u>	[F]
			38.91%	[G]

Notes:

After-Tax Weighted Average [D] = [C] x (1 - [G])

Effective Federal Income Tax Rate [E] = [H] x (1 - [I])

Effective State Income Tax Rate [F] = [I] / (1 + [I])

ATTACHMENT 8I

Year	LSFO Avoided BBLs	Diesel Avoided BBLs	Biofuel Avoided BBLs	LSFO Avoided Fuel Cost (Real Year \$)	Diesel Avoided Fuel Cost (Real Year \$)	Biofuel Avoided Fuel Cost (Real Year \$)	Total Avoided Fuel Cost* (Real Year \$)
2012							
2013							
2014							
2015							
2016							
2017							
2018							
2019							
2020							
2021							
2022							
2023							
2024							
2025							
2026							
2027							
2028							
2029							
2030							
2031							
Total	344,459	630	6,456				

* Total fuel cost is for Hawaiian Electric avoided fuel. This does not include possible avoided fuel from Independent Power Producers

ATTACHMENT 8J

Avoided Hawaiian Electric Variable O&M Costs and Total Avoided Costs

Year	Avoided Fuel Costs * (PV,2010\$)	Avoided O&M Costs * (PV,2010\$)	Total	Kalaeloa Solar Energy Payment (PV,2010\$)
2012				
2013				
2014				
2015				
2016				
2017				
2018				
2019				
2020				
2021				
2022				
2023				
2024				
2025				
2026				
2027				
2028				
2029				
2030				
2031				
Accumulated Net Present Value (2010\$) [REDACTED]				
Kalaeloa Solar Pricing is: [REDACTED]				

* Avoided Fuel and Avoided O&M Costs include avoided IPP costs

ATTACHMENT 8K

Hawaiian Electric Historical Filed Avoided On-Peak Energy Costs
November 2008 to February 2011

Year	Avoided Energy Costs (\$/MWh)
November 2008	234.60
December 2008	190.45
January 2009	172.30
February 2009	128.54
March 2009	122.76
April 2009	120.99
May 2009	115.21
June 2009	117.48
July 2009	125.02
August 2009	154.70
September 2009	160.52
October 2009	164.06
November 2009	160.77
December 2009	159.76
January 2010	137.16
February 2010	138.86
March 2010	152.26
April 2010	148.88
May 2010	151.87
June 2010	158.11
July 2010	161.23
August 2010	158.38
September 2010	158.89
October 2010	158.11
November 2010	161.10
December 2010	163.18
January 2011	192.95
February 2011	197.48

ATTACHMENT 8L

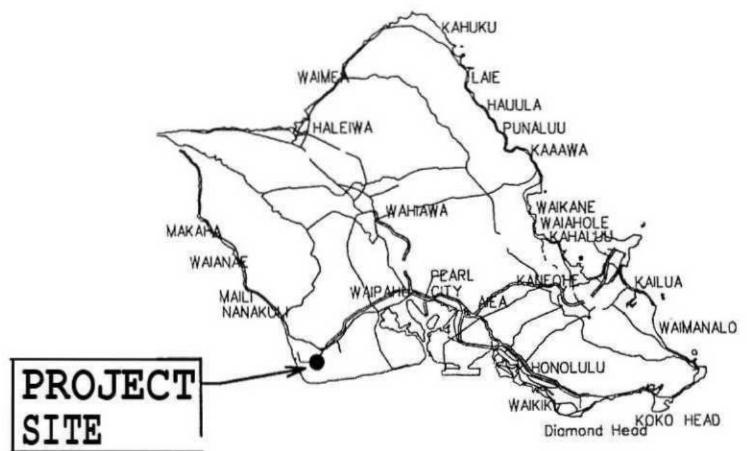
Hawaiian Electric Feed-In Tariff Program Estimates

Year	Incremental PV (MW)	Incremental Wind (MW)	Incremental CSP (MW)	Incremental Hydro (MW)	Incremental Annual Total (MW)	Cumulative Total FIT (MW)
2011	31	2.5	2	0.3	36	36
2012	20	1.9	1.4	0.4	24	60
2013	16.8	1.4	1.5	0.3	20	80
2014	16.8	1.4	1.5	0.3	20	100
2015	16.8	1.4	1.5	0.3	20	120

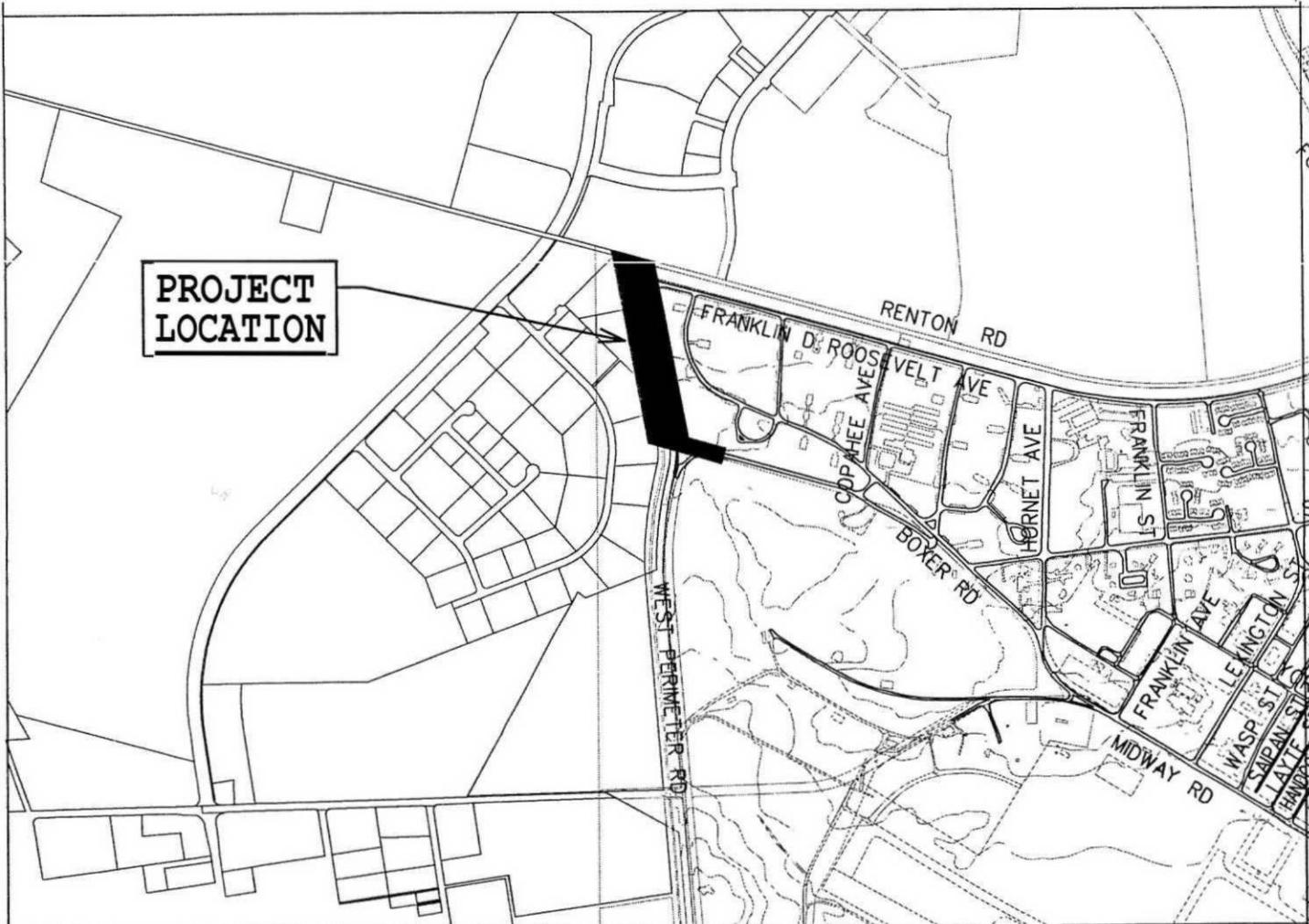
Note: For the purposes of this filing, the incremental amounts after 2015 were assumed to be zero and the cumulative total FIT was assumed to remain constant at 120 MW

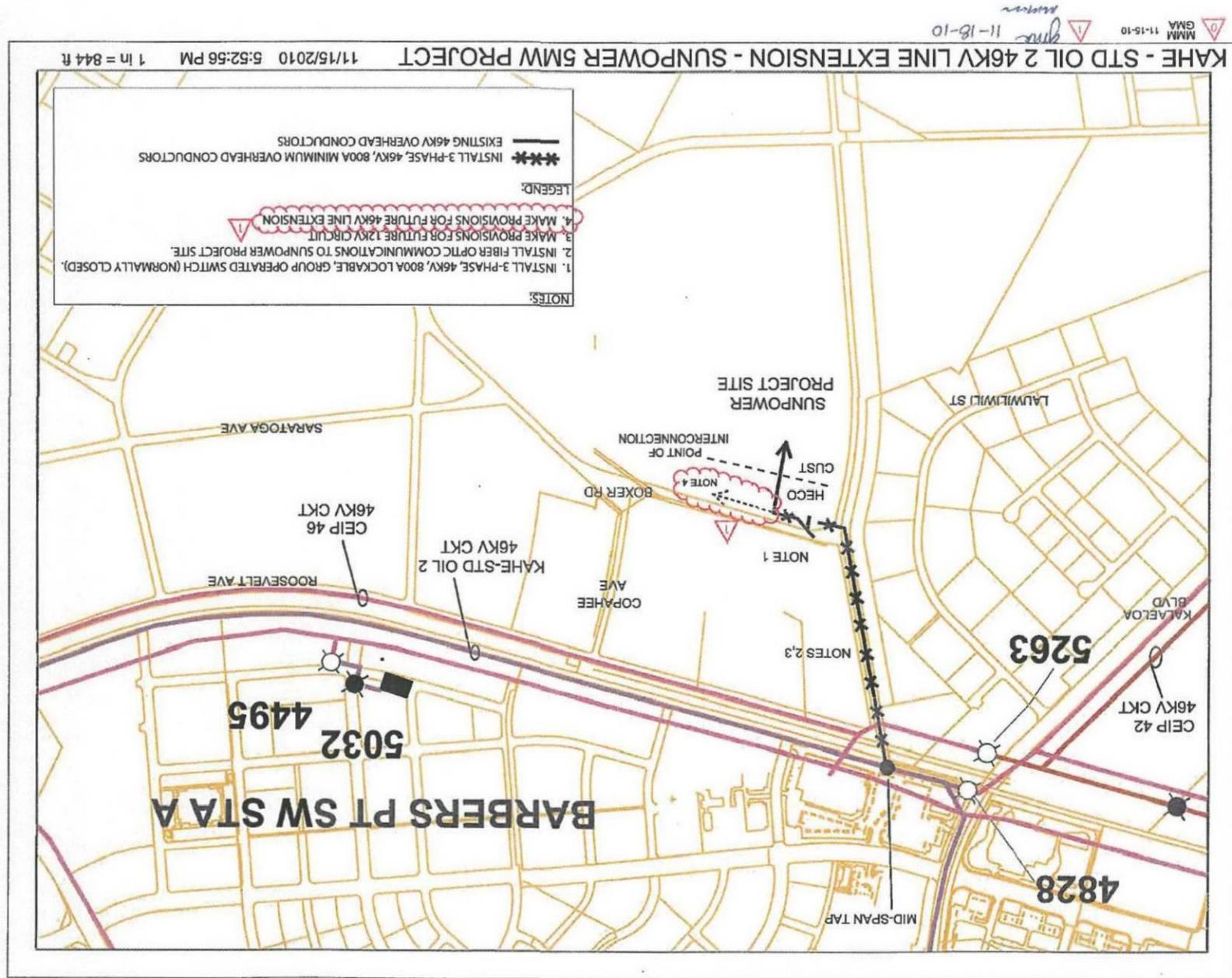
EXHIBIT 9

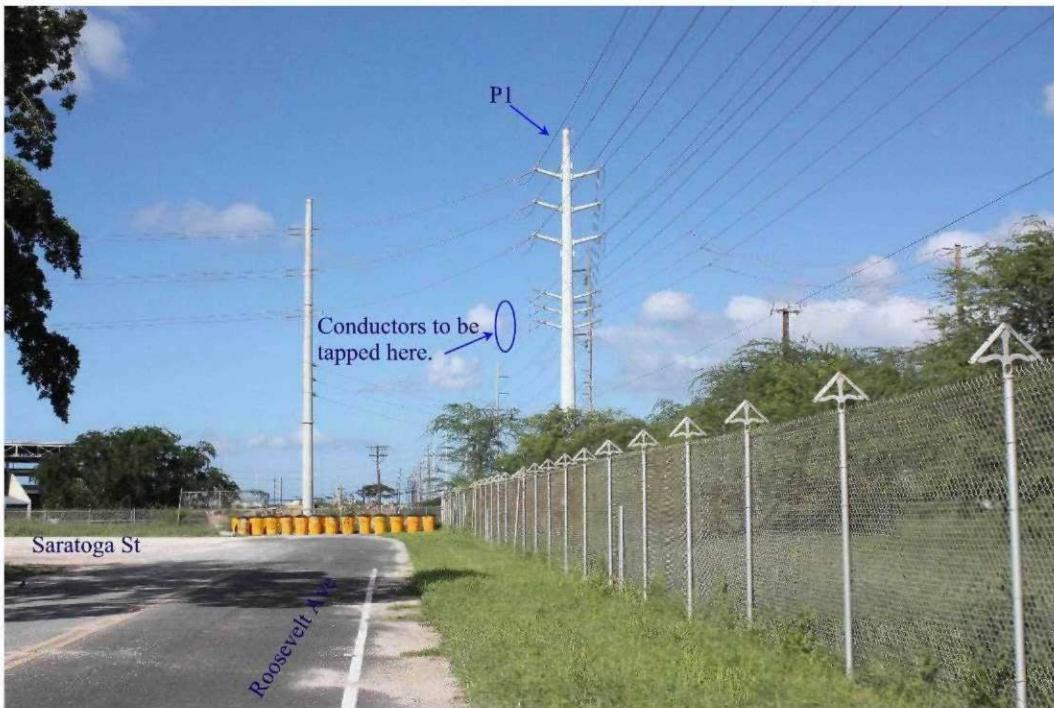
Map and Description of 46 kV Transmission Line Work



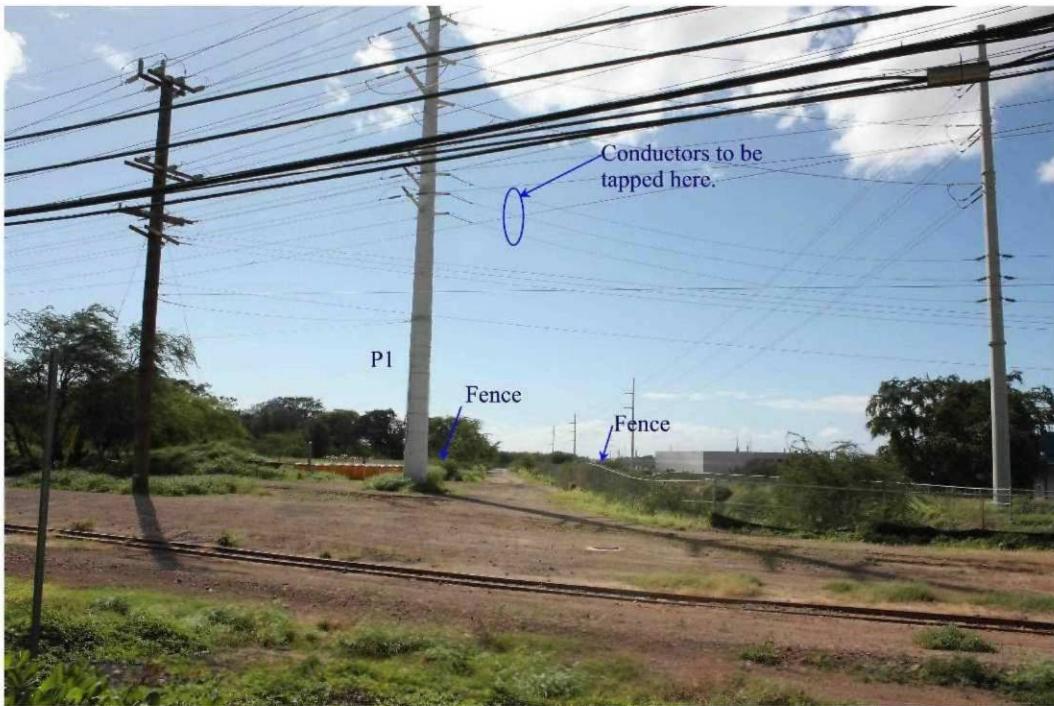
A SITE PLAN
N.T.S.







Intersection of Roosevelt Avenue and Saratoga Street looking west from Roosevelt Avenue. The 46 kV overhead conductors will be tapped on the west side of pole P1, and head south parallel to Saratoga Street.



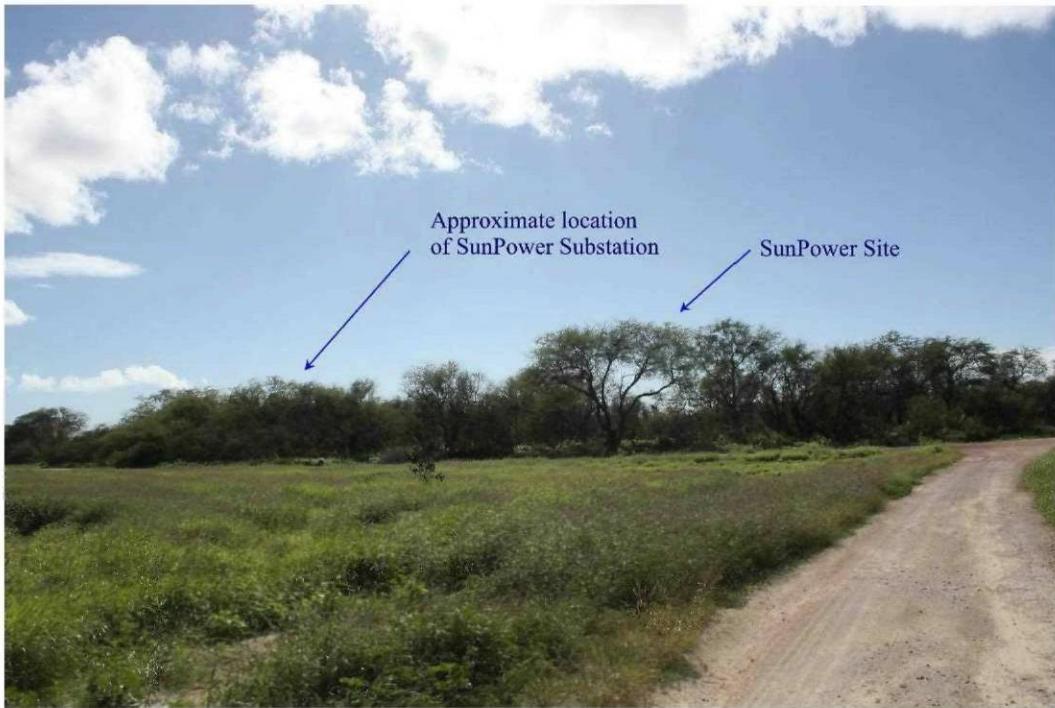
View of the proposed pole alignment looking south from Renton Road. The new pole alignment will be located between the two fence lines. Saratoga Street is located on the left side of the left fence.



Saratoga Street looking south from the intersection of Roosevelt Avenue and Saratoga Street. The proposed 46 kV overhead line will run parallel to Saratoga Street on the right side of the existing fence.



Intersection of Saratoga Street and Boxer Road looking south from Saratoga Road.



View of approximate location of proposed SunPower site and substation looking southeast from Saratoga Road.



View along 46kV overhead line route looking towards the Barber's Point housing area.

46 kV COST COMPARISON
OVERHEAD vs. UNDERGROUND ALTERNATIVE

	OH Estimate (Capital)	UG Estimate (Capital)
Labor	\$ 97,046	\$104,903
Materials	\$222,514	\$355,853
Outside Services	\$123,190	\$1,604,291
AFUDC	\$ 0	\$ 0
Overheads	\$156,684	\$163,284
Other	\$ 0	\$ 0
Total (Capital)	\$599,434	\$2,228,331
Changeovers	\$ 0	\$ 0
Removals	\$ 0	\$ 0
Total Project Cost	\$599,434	\$2,228,331

OVERHEAD ITEMS

The breakdown of materials and their estimated costs for each item costing \$1,000 or more are shown below.

Overhead Costs:

	OH Estimate
3 Steel pole, 70'	\$66,000
6 Steel pole, 65'	\$99,000
1 46 kV OH Switch	\$13,600
3 Steel Pole Installation, 70'	\$49,500
6 Steel Pole Installation, 65'	\$66,000
3,870# Conductor, Bare, 556 AAC	\$8,500

UNDERGROUND ITEMS

Overhead Costs:

	OH Estimate
3 Steel pole, 70'	\$66,000
1 Steel pole, 65'	\$16,500
1 46 kV OH Switch	\$13,600
3 Steel Pole Installation, 70'	\$49,500
1 Steel Pole Installation, 65'	\$11,000
684# Conductor, Bare, 556 AAC	\$1,500

Underground Costs:

	UG Estimate
7,770' Cable 1/C, 1500 KCM, Al, PEIJ	\$109,100
15 Splice, 1500 KCM, Cable	\$41,500

6	Terminator, 1500 KCM Cable.....	\$16,000
425#	Conductor, Bare, Copper, #2	\$2,600
6	Lightning Arrestor, 46 kV	\$3,400
6	Terminator Bracket	\$4,000

Outside Underground Construction Costs:

		UG Estimate
5	Manhole, 7' x 16'	\$500,000
1,935'	Duct line, 4-5"C, concrete encased.....	\$967,500

CERTIFICATE OF SERVICE

I (we) hereby certify that copies of the foregoing document were duly served on the following party, by having said copies delivered as set forth below:

DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
DIVISION OF CONSUMER ADVOCACY
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Via Hand Delivery

DATED: Honolulu, Hawai`i, March 9, 2011.

Marisa K. Chun