

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAI'I**

In the Matter of the Application of

**HAWAIIAN ELECTRIC COMPANY,
INC.**

**For Approval of Power Purchase
Agreement for Renewable As-Available
Energy with Waiawa PV, LLC.**

DOCKET NO. 2014-0359

PUBLIC UTILITIES
COMMISSION

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FILED

HAWAIIAN ELECTRIC APPLICATION

EXHIBITS 1 – 12

VERIFICATION

AND

CERTIFICATE OF SERVICE

**Joseph P. Viola
Vice President
Regulatory Affairs
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawai'i 96840-0001**

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HAWAIIAN ELECTRIC APPLICATION

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

I. INTRODUCTION

By this Application, Hawaiian Electric Company, Inc. ("Hawaiian Electric" or the "Company") seeks approval, by **May 4, 2015** or as soon as reasonably practicable, of a Power Purchase Agreement and other matters relating to a 45.9 megawatt ("MW") AC net photovoltaic ("PV") project proposed by Waiawa PV, LLC ("WPV" or "Seller"), which is to be located in Waiawa, on the island of O'ahu (the "Project").¹ Hawaiian Electric and WPV have executed a Power Purchase Agreement for Renewable As Available Energy, dated December 3, 2014 ("PPA").

¹ This Project arises from Docket No. 2013-0381 in which the Hawai'i Public Utilities Commission ("Commission") granted waivers from the Framework for Competitive Bidding for six independent power producer ("IPP") solar energy projects on O'ahu (the "Waiver II Projects"). The Waiver II Projects are in addition to the three IPP solar energy projects on O'ahu that the Commission also granted waivers from the Competitive Bidding Framework in Docket No. 2013-0156 (the "Waiver I Projects"). The Waiver I Projects and Waiver II Projects are collectively referred to herein as the "Waiver Projects".

Hawaiian Electric respectfully submits that the Project and PPA should be approved because: (1) the Project is consistent with the Commission's Inclinations² and the Company's PSIP;³ (2) the fixed PPA energy price is reasonable and is projected to fall below the price of energy produced from petroleum diesel, low sulfur fuel oil ("LSFO") or other fuel oil during the term of the PPA; (3) the Project is not expected to impact curtailment of existing as-available renewable resources or impede the consideration of additional renewable resources to Hawaiian Electric's system; (4) the Project will help to meet the State of Hawai'i's (the "State") energy policy objectives and Renewable Portfolio Standards ("RPS") law; and (5) the Project will contribute to the State's goal of greater energy security and energy self-sufficiency.

Time is of the essence under the PPA, and WPV's ability to achieve "Constructions Milestones" is critically important. As stated by the developer for the WPV Project in Exhibit 11, "[t]he financing and construction of interconnection facilities are the primary critical path issue for the Waiawa PV Project. We do not believe that the Waiawa PV Project [. . .] can be successfully developed without a financial close in July, 2015. Commission approval of the PPA for the Waiawa Project would need to be received by May 4, 2015, in order for any appeal period to pass in time to allow financial closing to occur in July 2015." The "Guaranteed Commercial Operations Date" will be December 31, 2016, prior to the expiration of the Investment Tax Credit at the end of 2016. Further, under the PPA, WPV may, for a period of **90 days** following **May 4, 2015**, declare the PPA null and void if Commission approval is not obtained by such date. The Company recognizes that this is a very compressed timeframe for the Commission to issue its decision and order. Accordingly, the Company will work diligently with

² The document entitled Commission's Inclinations on the Future of Hawaii's Electric Utilities was issued on April 28, 2014 in Docket No. 2012-0036.

³ "PSIP" means Hawaiian Electric's Power Supply Improvement Plan filed in Docket No. 2011-0206 on August 26, 2014.

the Consumer Advocate on a procedural schedule to timely process this docket and help facilitate WPV's request for a timely decision and order.

The Waiver Projects, including this Project, are a vital step forward in the Company's plan to integrate more low-cost utility scale renewable generation in Hawai'i. The Waiver Projects provide some of the lowest-cost generation available today based on the availability of federal and state renewable energy tax credits, some of which are set to expire at year-end in 2016. The Company maintains that it is reasonable and prudent to approve the PPA, while such low-cost energy pricing is available. In addition, approval of the PPA will help the Company achieve the objectives established by the Commission in its Inclinations and in the Company's PSIP.

A. Requested Approvals

Hawaiian Electric respectfully requests that the Commission:

- (a) Approve the PPA;⁴
- (b) Find that the purchased energy charges to be paid by Hawaiian Electric pursuant to the PPA are just and reasonable;
- (c) Find that the purchased power arrangements under the PPA, pursuant to which Hawaiian Electric purchases energy on an as-available basis from WPV, are prudent and in the public interest;
- (d) Authorize Hawaiian Electric to include the purchased energy charges, the payments made for Compensable Curtailed Energy (as such term is defined in Exhibit 6, "Key PPA Terms and Conditions," attached hereto) and related revenue taxes that

⁴ Attached as Exhibit 1 hereto is a copy of the executed PPA.

Hawaiian Electric incurs under the PPA in and through Hawaiian Electric's Energy Cost

Adjustment Clause ("ECAC") to the extent such costs are not included in base rates;

(e) Determine that the 138 kilovolt ("kV") line extensions that are included as part of Company-Owned Interconnection Facilities⁵ should be constructed above the surface of the ground for the Waiawa PV Project, pursuant to Hawai'i Revised Statutes ("HRS") § 269-27.6; are

(f) Grant such other relief as may be just and reasonable under the circumstances.

B. Project is Consistent with the Commission's Inclinations, the State's Energy Policy Goals, and the Company's PSIP

In its Inclinations, the Commission emphasized that in order for the Company "to further stabilize and lower the costs of generation, the HECO Companies should expeditiously: [s]eek high penetrations of lower-cost, new utility-scale renewable resources"⁶ and that the Company "should continue to pursue alternative procurement strategies to ensure that the lowest cost utility-scale renewable energy projects are acquired."⁷ The Waiver Projects, including this Project, meet the above directives set forth in the Commission's Inclinations. The Waiver Projects currently encompass some of the lowest prices for renewable energy in Hawai'i, which were achieved using the waiver invitation process (an alternative procurement strategy) and provide new procurement methods such as risk adjusted pricing (described in Section V.A. below, and in Confidential Exhibit 6, attached hereto) while taking advantage of the currently

⁵ Unless otherwise stated herein, capitalized terms shall have the meaning set forth in the Definitions section of the PPA.

⁶ Inclinations, at 4.

⁷ Inclinations, at 5.

available federal tax incentives, some of which will only be available through December 31, 2016.

In line with the Commission's Inclinations, as set forth in Hawaiian Electric's PSIP, "the [Company's] vision for the future is to deliver cost-effective, clean, reliable, and innovative energy services to [its] customers, creating meaningful benefits for Hawai'i's economy and environment."⁸ The Company plans to be a national leader in use of low-cost renewable energy with more than 65% renewable generation. As set forth in further detail in the PSIP, the Waiver Projects will help provide a balanced and diversified renewable energy portfolio for O'ahu and are part of the overall PSIP strategy to lower customer bills more than 20% by 2030.

Further, the Waiver Projects, including this Project, are consistent with the State's energy policy, which encourages the use and development of renewable energy. In support of the State's energy policy, the State Legislature enacted the RPS law for electric utilities. The Company submits this Application as part of its efforts to advance renewable energy in Hawai'i and approval will enable the addition of lower-cost utility scale renewable resources while maintaining the reliability of the grid. In addition, approval of the Project will help enable the Company to meet the RPS law that requires (1) twenty-five percent (25%) of the Company's net electricity sales be from renewable resources by December 31, 2020, and (2) forty percent (40%) of the Company's net electricity sales be from renewable resources by December 31, 2030.

Moreover, the Project, in combination with the other Waiver Projects, serves as a viable hedge against the rising cost of energy generated from petroleum diesel, LSFO or other fuel oil. The Waiver Projects also help to create energy independence and security by shifting a portion of the millions of dollars that currently are spent on imported oil and reinvesting those

⁸ See the Company's Transmittal Letter for the PSIP at 5, filed in Docket No. 2011-0206, on August 26, 2014.

dollars in Hawai‘i on projects that do not rely on oil or other imported resources to provide energy to the Company’s customers. The State and Company’s reliance on energy generated from fossil fuels cannot continue unabated as Hawai‘i residents and businesses will face significant risks in terms of price uncertainty and upward price pressures, which will have long-term consequences for the Hawai‘i economy. An assessment of the reasonableness of a particular renewable energy project must consider factors beyond the price per kilowatt-hour and consider that the alternative of remaining dependent on fossil fuel perpetuates concerns regarding supply vulnerabilities and price volatility.

The Waiver Projects, including this Project, are a vital step forward in the Company’s plan to integrate more low-cost utility scale renewable generation in Hawai‘i. The Waiver Projects provide some of the lowest-cost generation available today based on the availability of federal and state renewable energy tax credits, some of which are set to expire at year-end in 2016. The Company maintains that it is reasonable and prudent to approve the PPA, while such low-cost energy pricing is available. In addition, approval of the PPA will help the Company achieve the objectives established by the Commission in its Inclinations and in the Company’s PSIP.

C. Authority Under Which Approval is Sought

1. HAR Chapter 6-61

This Application is filed pursuant to the Rules of Practice and Procedure before the State of Hawai‘i Public Utilities Commission, Title 6, Chapter 61, of the Hawai‘i Administrative Rules (“HAR”).

2. PPA Approval

Commission approval of this PPA, purchased energy charges, and payments made for Compensable Curtailed Energy as described herein, is sought pursuant to HRS § 269-27.2

and HAR Chapter 6-74, which generally guide the Commission's review of the rates agreed upon between Hawaiian Electric and WPV. Specifically, HRS § 269-27.2(c) provides, in relevant part:

The rate payable by the public utility to the producer for the non-fossil 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 non-fossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of non-fossil fuel generated electricity. As the commission deems appropriate, the just and reasonable rate for non-fossil 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.

HAR § 6-74-22(a) also provides that the rates for purchase shall:

- (1) Be just and reasonable to the electric consumer of the electric utility and in the public interest;
- (2) Not discriminate against qualifying cogeneration and small power production facilities; and
- (3) Be not less than one hundred per cent of avoided cost for energy and capacity purchases to be determined as provided in [HAR §] 6-74-23 from qualifying facilities and not less than the minimum purchase rate.⁹

⁹ Notwithstanding, HAR § 6-74-15(b)(1) states that nothing in HAR Title 6, Chapter 74, Subchapter 3 (i.e., HAR §§ 6-74-15 to 28) “[p]rohibits an electric utility or any qualifying facility to agree to a rate for any purchase, or terms or conditions relating to any purchase, which differ from the rate or terms or conditions which would otherwise be required by this subchapter[.]”

3. ECAC/PPAC

The take-or-pay terms for this PPA are unique relative to typical PPAs the Company has previously executed. As described in Exhibit 2 and in Hawaiian Electric's July 25, 2014 letter filed in Docket Nos. 2013-0156 and 2013-0381, this change to the PPA structure provided a mechanism to limit the developer's financial risk associated with excess energy curtailment in exchange for reduced pricing to benefit customers. Furthermore, this change is consistent with Order No. 31354, issued in Docket 2011-0225, in which the Commission directed Hawaiian Electric to "seek proposals from renewable energy developers regarding optional curtailment compensation contract provisions in order to ascertain whether reductions in curtailment uncertainty would translate into equivalent bid price reductions. This information would establish the economic cost of curtailment or alternatively, the economic benefits of renewable energy curtailment reduction."¹⁰ As a result of the challenges associated with the system conditions and events that led to the optional pricing request, this approach has resulted in significantly lower priced energy reflecting, in large part, the contractual provisions for Compensable Curtailed Energy. Thus, the total energy payments (purchased energy charges and payments for Compensable Curtailed Energy) represent the total cost of the energy used (see also Section V.A below).

Consequently, Commission authorization is sought, pursuant to HAR § 6-60-6(2), to include the purchased energy charges and payments made for Compensable Curtailed Energy that are incurred by Hawaiian Electric under the PPA in Hawaiian Electric's ECAC. Specifically, HAR § 6-60-6(2) states:

No changes in fuel and purchased energy costs may be included in the fuel adjustment clause unless the contracts or prices for the

¹⁰ See Order No. 31354 filed on July 11, 2013, in Docket No. 2011-0225 at 41.

purchase of such fuel or energy have been previously approved or filed with the commission.

As an alternative to ECAC recovery, the Compensable Curtailed Energy costs could be recovered through the Company's Purchased Power Adjustment Clause ("PPAC").¹¹

4. HRS § 269-27.6 – 138 kV Overhead Transmission Line

The Company seeks Commission approval to construct 138 kV transmission line extensions above the surface of the ground, pursuant to HRS § 269-27.6. This section provides:

Construction of high-voltage electric transmission lines; overhead or underground construction.

(a) 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 division of consumer advocacy of the department of commerce and consumer affairs, which shall be based on an evaluation of the factors set forth under this subsection; and
- (5) Any other relevant factors.

(b) In making the determination set forth in subsection (a), for new 138 kilovolt or greater high-voltage transmission systems, the public utilities

¹¹ The PPAC is a separate surcharge, which permits pass-through of reasonably incurred purchase power contract costs, including capacity, operations and maintenance costs, and other non-energy costs, upon Commission approval. The PPAC was approved by the Commission in Docket No. 2008-0083, by Final Decision and Order filed December 29, 2010.

commission shall evaluate and make specific findings on all of the following factors:

- (1) The amortized cost of construction over the respective usable life of an above-ground versus underground system;
 - (2) The amortized cost of repair over the respective usable life of an above-ground versus underground system;
 - (3) The risk of damage or destruction over the respective usable life of an above-ground versus an underground system;
 - (4) The relative safety and liability risks of an above-ground versus underground system;
 - (5) The electromagnetic field emission exposure from an above-ground versus underground system;
 - (6) The proximity and visibility of an above-ground system to:
 - (A) High density population areas;
 - (B) Conservation and other valuable natural resource and public recreation areas;
 - (C) Areas of special importance to the tourism industry; and
 - (D) Other industries particularly dependent on Hawaii's natural beauty;
 - (7) The length of the system;
 - (8) The breadth and depth of public sentiment with respect to an above-ground versus underground system; and
 - (9) Any other factors that the public utilities commission deems relevant.
- (c) A public utility making an application to the public utilities commission under this section shall clearly and fully state and support its evaluation of each factor set forth in subsection (b).

5. HRS § 269-27.5 – Public Hearing

The Project involves the extensions of a 138 kV overhead line. A public hearing pursuant to HRS § 269-27.5 is not requested for this Project because there are no existing residential homes in or near the project site. HRS § 269-27.5 provides as follows:

Construction of high-voltage electric transmission lines; hearing. Whenever a public utility plans to place, construct, erect, or otherwise build a new 46 kilovolt or greater high-voltage electric transmission system above the surface of the ground through any residential area, the public utilities commission shall conduct a public hearing prior to its issuance of approval thereof. Notice of the

hearing shall be given in the manner provided in section 269-16 for notice of public hearings.

The area where the 138 kV line will be extended is zoned Restricted Agricultural (AG-1/AG-2). In addition, the closest residential area, the Mililani Mauka neighborhood, is approximately 5,811 feet (1.1 miles) away, and the distance to the nearest home is 1800 feet. The 138 kV line extensions will not be visible from the homes, due to the distance and terrain. (See Exhibit 12.)

II. CORRESPONDENCE AND COMMUNICATIONS

Correspondence and communications regarding this Application should be addressed to:

Daniel G. Brown
Manager, Regulatory Non-Rate Proceedings
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawai'i 96840-0001

III. SUPPORTING EXHIBITS

The following exhibits are attached to, and hereby incorporated into, this Application:

- Exhibit 1 Power Purchase Agreement for Renewable As-Available Energy, dated December 3, 2014, by and between Hawaiian Electric Company, Inc. and Waiawa PV, LLC
- Exhibit 2 Procedural Background
- Exhibit 3 Compliance With Order No. 32264
- Exhibit 4 Pricing Structure and Negotiations Support
- Exhibit 5 Estimated Bill Impact
- Exhibit 6 Key PPA Terms and Conditions
- Exhibit 7 Seller's Pro Forma

- Exhibit 8 Site Map of Seller's Facility
- Exhibit 9 Interconnection Requirements Study (Leidos Engineering, LLC)
- Exhibit 10 Interconnection Requirements Study (Electric Power Systems, Inc.)
- Exhibit 11 Seller's Letter Explaining Request for a Decision and Order by May 4, 2015
- Exhibit 12 Map and Description of 138 kV Transmission Lines Work

Redacted versions of Exhibits 4, 5, 7, 9 and 10 are attached in support of this Application, as these exhibits contain confidential and/or proprietary financial information, which if disclosed publicly could disadvantage and competitively harm the Company and/or WPV. Exhibits 4, 5, 7, 9 and 10 will be filed in this docket upon issuance of an approved protective order in this docket.

IV. BACKGROUND: PARTIES AND PROJECT

A. Description of Company

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, purchase, transmission, distribution, and sale of electricity on the island of O'ahu.

B. Description of WPV

WPV, is a Limited Liability Company formed in Delaware and registered to do business in Hawai'i, organized for purposes of developing, constructing, owning and operating the Project. WPV is a wholly owned subsidiary of Waiawa PV Holdings, LLC, which is a wholly owned subsidiary of First Wind Solar Portfolio, LLC, which is a wholly owned

subsidiary of the ultimate parent company, First Wind Holdings, LLC ("First Wind"). A diagram of WPV's ownership structure is attached as Exhibit A-2 to the PPA.

First Wind is an independent renewable energy company exclusively focused on the development, financing, construction, ownership and operation of utility-scale renewable energy projects in the United States. Based in Boston, First Wind operates or is in the process of constructing renewable energy projects in the Northeast, the West and Hawai'i, with combined capacity of nearly 1,300 MW, which is enough to power more than 425,000 homes each year. First Wind currently has 198 permanent employees, 36 of which are employed in Hawai'i. First Wind's first completed wind project was Kaheawa Wind Power, constructed on Maui in 2006. Since then, First Wind has built and now operates four wind energy projects in on Oahu and Maui with a total capacity of 150 MW.

WPV is an entity in good standing with the Department of Commerce and Consumer Affairs of the State of Hawai'i and with the Secretary of State of the State of Delaware, as evidenced by the copies of Certificates of Good Standing for WPV attached as Exhibit A-1 to the PPA.

C. Description of Project

WPV will construct, own, and operate a proposed 45.9 MW AC net PV farm located in the ahupua'a of Waipio on O'ahu, Hawai'i ("Facility").

1. Site

The Facility will be located in Central O'ahu in the ahupua'a of Waipio, in the City and County of Honolulu, on portions of TMK 9-5-003:004, which is situated adjacent to the H-2 Freeway, just north of the Ka Uka Boulevard interchange. The proposed solar farm would be located on the portion of the TMK that is east of the freeway, within a contiguous area that is irregular in shape. Elevation of the project site ranges from approximately 720 feet above sea

level near the H-2 Freeway to approximately 940 feet at the east end of the site. The topography of the site is gently sloping, transitioning to steep gulches along the northern and southern edges of the property (Kipapa Gulch and Panakauahi Gulch, respectively). This area is comprised of former agricultural fields that were previously cultivated with pineapple and sugarcane, and is currently used for cattle grazing; there are no structures within the project site. The State land use classification is Agricultural and the City & County of Honolulu zoning designation is AG-1 (Restricted Agriculture). Access to the site is provided by a private agricultural road with ingress/egress off Ka Uka Boulevard (across from the Costco Waipio complex), there is no public access to the site. The property is currently owned by Castle & Cooke Homes Hawaii, Inc., and First Wind has an option to purchase the property, including rights to access the property via the Pineapple Road overpass. When completed, the area of the WPV project site within the perimeter fence will be approximately 313 acres.

2. The Facility

WPV will construct, own, and operate the proposed Facility in parallel with Hawaiian Electric's system. Electric energy produced at the Facility will be provided by WPV to Hawaiian Electric "on an unscheduled basis as Seller determines it to be available from its Facility . . . rather than at prearranged times and in prearranged amounts."¹²

The Facility is anticipated to consist of approximately 210,000 crystalline modules, 33 x 1.5 MW nominal inverters, an underground collector system, and a 34.5 – 138 kV Seller's substation, all of which will be constructed by WPV with a nameplate capacity of 47 MW and a Contract Capacity of 45.9 MW.

The proposed interconnection for the Facility involves the construction of a new 138 kV switching station ("Akau Substation") and extensions of new 138 kV overhead lines

¹² PPA at 4 (Definition of "As-Available Energy").

from the switching station, approximately 169 feet, to the existing Kahe-Wahiawa 138 kV transmission line which crosses the project site. Both the Akau Substation and line extension will be constructed by the Company (see Exhibit 12 for the project location). As explained later in this Application, the interconnection work associated with the Facility will be managed by Hawaiian Electric. The estimated capital cost for Hawaiian Electric's interconnection work is approximately \$13.5 million which will be paid for by WPV.

As part of the interconnection, Hawaiian Electric proposes to construct 1) two single circuit deadend steel poles; 2) one single circuit tangent steel pole; 3) approximately 350 feet of 3-phase double-bundled 556 AAC overhead conductor; 4) approximately 350 feet of 197.5 AAAC, 7/0 strands, "Amherst" shield wire; 5) new OPGW to be routed on two diverse routes into the Akau Substation to be spliced with existing OPGW on the Kahe-Wahiawa transmission line.

Included with this PPA are a preliminary single-line diagram, relay list, relay settings, and trip scheme of the Facility as Attachment E (Single-Line Drawing) and Attachment F (Relay List and Trip Scheme). A final single-line drawing, relay list and trip scheme of the Facility will be attached to the PPA and made a part thereof within sixty (60) Days of the Commercial Operations Date of the Facility. After such final submission, no changes can be made to the final single-line diagram, relay list, and trip scheme without the prior written consent of Seller and the Company.

3. Qualification of the Facility

WPV represents and warrants that, as of the Commercial Operations Date, the Facility will be a qualified renewable resource under the RPS law in effect as of the Effective Date.¹³ Accordingly, based on WPV's representation, any and all energy delivered by WPV to

¹³ See PPA § 22.2(E) and Preamble.

Hawaiian Electric from or through the Facility throughout the term of the PPA will meet the definition of “renewable electrical energy” or “renewable energy” as defined under HRS § 269-91.

V. APPROVAL OF PPA

A. “Take or Pay” or “Risk Adjusted Pricing” Pricing

As more thoroughly discussed in Exhibit 6, “Key PPA Terms and Conditions” attached hereto, this PPA is a “Risk-Adjusted Pricing” (“RAP”) energy PPA, pursuant to which Hawaiian Electric will purchase the energy made available to the Company in accordance with the terms and conditions of the PPA, subject to Hawaiian Electric’s rights in the PPA to curtail, interrupt or reduce deliveries of electric energy for certain enumerated purposes or causes. In contrast to prior as-available renewable energy PPAs previously entered into by Hawaiian Electric and approved by the Commission, this PPA requires Hawaiian Electric to pay for certain curtailed energy, or “Compensable Curtailed Energy” as defined in the PPA.

Essentially, Hawaiian Electric will pay the same contract rate for both electric energy delivered pursuant to the PPA and for Compensable Curtailed Energy. This pricing structure for electric energy is sometimes referred to as “RAP Pricing” or “Take or Pay Pricing” herein. This concept is presented for Commission approval and has contributed to garnering the lowest proposed renewable energy contract prices from developers participating in the Waiver Invitation, as well as the lowest proposed renewable energy contract prices in Hawaiian Electric’s history.

Hawaiian Electric has also negotiated with WPV to have the amount of Compensable Curtailed Energy paid for by Hawaiian Electric to be “banked” such that at the end of the Initial Term, Hawaiian Electric will have the option of extending the Term of the PPA for a Banked Curtailed Energy Term. The contract rate for energy delivered during the Banked

Curtailed Energy Term is substantially less than the contract rate during the Initial Term, and WPV will not be paid for Compensable Curtailed Energy during the Banked Curtailed Energy Term. The Banked Curtailed Energy Term will expire on the first to occur of (i) the last Day of the calendar month during which the last of the Banked Curtailed Energy is delivered to Hawaiian Electric or (ii) the fifth anniversary of the end of the Initial Term. The rationale for the lower contract rate during the Banked Curtailed Energy Term is that Hawaiian Electric has already paid for the Banked Curtailed Energy and payments to Seller during the Banked Curtailed Energy Term should be for purposes of covering Seller's operating and maintenance costs.

Hawaiian Electric's recovery for payments made to WPV for Compensable Curtailed Energy is reasonable because the contractual mechanism for such payments has reduced financing uncertainty for WPV and has thereby enabled an additional reduction in WPV's proposed energy price. Without the contractual take-or-pay arrangement, WPV's proposed energy rate would be higher than the energy price set forth herein.

B. Federal Tax Credits and Guaranteed Commercial Operations Date

Under Section 48 of the Internal Revenue Code, as amended by § 1102 of the American Recovery and Reinvestment Act of 2009, Inverter Blocks placed in service prior to January 1, 2017 may qualify for a 30% Investment Tax Credit; Inverter Blocks placed in service on or after January 1, 2017 may qualify for a reduced Investment Tax Credit of 10%.¹⁴

Time is of the essence under the PPA, and WPV's ability to achieve "Constructions Milestones" is critically important.¹⁵ The "Guaranteed Commercial Operations

¹⁴ Inverter Block is a single inverter and DC collection system and the solar photovoltaic modules connected to such inverter.

¹⁵ See PPA § 13.2 and Attachment L.

Date" is December 31, 2016.¹⁶ In addition, Hawaiian Electric has agreed to meet certain "Company Milestones" (as defined in the PPA) if WPV meets certain conditions precedent. If the Company misses such Company Milestones, WPV has the ability to declare the PPA null and void, as described further in Exhibit 6.

C. Energy Pricing Negotiations and Evaluation

Pricing for the energy to be delivered by the Project was determined through a series of proposals and arms-length negotiations between the Parties over an extended period of time. Hawaiian Electric's key considerations for this and other Waiver Projects included, but were not limited to: (a) Hawaiian Electric's desire for additional renewable energy resources; (b) the objective of delinking the pricing of the Independent Power Producer ("IPP") energy from fossil fuel prices to comply with HRS § 269-27.2(c);¹⁷ (c) pricing of energy from other as-available renewable energy projects; and (d) pricing of the proposal compared to Hawaiian Electric's long-run avoided energy costs.

Exhibit 4 contains confidential and/or proprietary financial information, which if disclosed publicly could disadvantage and competitively harm the Company. An unredacted copy of this exhibit will be provided upon issuance of an approved protective order in this docket.

D. Key PPA Terms and Conditions

The terms and conditions of the PPA were negotiated by the Parties at arms-length, over an extended time period. The PPA contains indemnification, insurance, third party evaluations and other provisions, including, among other things, provisions pertaining to

¹⁶ See PPA § 13.3 and Attachment K.

¹⁷ Section 269-27.2(c), HRS, 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 non-fossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of non-fossil fuel generated electricity."

the Term, WPV's delivery of as-available energy from the Facility, and WPV's compliance with laws, which will serve to protect Hawaiian Electric and its customers from certain risks associated with interconnecting with the Facility. Moreover, the terms and conditions of the PPA will not affect Hawaiian Electric's ability to provide electric service to its customers and is not discriminatory to other small power producers. Hawaiian Electric contends that, for these reasons, the purchased power arrangements (i.e., terms and conditions) under the PPA, pursuant to which Hawaiian Electric purchases energy from WPV, are prudent and in the public interest.

The details regarding the terms and conditions for this PPA are being provided in the attached Exhibit 6.

E. Interconnection

1. IRS and Total Estimated Interconnection Cost

Due to the unique nature of the Invitation, the Interconnection Requirements Study ("IRS") was conducted in a grouped fashion, which combined the IRS analysis for several waiver projects in common geographic areas. WPV's share of the group IRS was conducted at its expense. On October 6, 2014, on behalf of Hawaiian Electric, Leidos, Inc. and Electric Power Systems, Inc. issued an IRS report for the WPV project. The IRS' are attached hereto as Confidential Exhibits 9 and 10.¹⁸

The objective of the IRS was to assess how the addition of the Facility would influence operation of Hawaiian Electric's system, including identifying any issues that pose an unreasonable threat to safety, power quality, reliability, or operational efficiency of the Company

¹⁸ Exhibits 9 and 10 have been redacted in their entirety as confidential and subject to the terms of a Protective Order to be issued in this docket. Unredacted copies of Exhibits 9 and 10 will be provided to the Commission pursuant and subject to a Protective Order. Leidos Engineering, LLC and Electric Power Systems, Inc. each completed portions of the IRS; the work by both of these consultants will be collectively referred to as the "IRS".

System, and recommending means of mitigating any possible issues. Overall, the findings of the IRS showed that it is feasible to connect the WPV project to the Hawaiian Electric system. The Liedos report stated that an SEL311L relay is planned for the 138 kV main lines at Akau and Hema Substations. This relay will be the main source of protection to respond to a fault at the project point of interconnection. Leidos recommended that Hawaiian Electric use a Zone 1 instantaneous response to detect and clear faults at both project sites. In general, the technical requirements governing the interconnection of the Facility with Hawaiian Electric's system are based on the findings and conclusions set forth in the IRS.

2. Interconnection of the Facility to the Company System

WPV will furnish and install the Facility described further in Attachment B (Facility Owned By Seller) of the PPA. A preliminary single-line diagram that identifies the Point of Interconnection is attached to the PPA as Attachment E. The Point of Interconnection will be at the 138 kV voltage level of Hawaiian Electric's system.

3. Company-Owned Interconnection Facilities

Subject to the terms and conditions set forth in Attachment G of the PPA, Hawaiian Electric will own, operate and maintain all Interconnection Facilities required to interconnect the Company System with the Facility at 138,000 volts, up to the Point of Interconnection. The Company-Owned Interconnection Facilities include, but are not limited to, the following: (1) a 138kV overhead line extension of the existing Kahe – Wahiawa 138kV line from a connection point at structure P.75A to the Point of Interconnection at the Akau Substation; (2) a second 138kV overhead line extension of the existing Kahe – Wahiawa 138kV line from a connection point at structure P.75B to the Point of Interconnection at the Akau Substation; (3) a 138kV pole on the Kahe – Wahiawa 138kV line to mitigate excessive insulator swing and clearance to structure violation; (4) Overhead Fiber Optic Ground Wire (“OPGW”),

Shield wire and related materials from structures P.75A and P.75B into Akau Substation (5) Reroute existing overhead OPGW on Company's existing transmission line to facilitate new OPGW to be routed on two diverse routes into Akau Substation; (6) a manually operated, lockable, group operated switch located prior to the Facility substation. Company will install a 138kV drop into the Company-provided deadend structure; (7) Relaying/Protection System upgrades at Wahiawa; (8) the new Akau Substation as further provided in Attachment G, and (9) revenue Metering Package as provided in Section 10.1 (Metering of the Agreement). All line and interconnection work will be designed, procured and constructed by WPV pursuant to Hawaiian Electric's specifications and standards.

In accordance with Section 1(d) of Attachment G of the PPA, WPV is required to pay for all costs related to the Company-Owned Interconnection Facilities. Hawaiian Electric will operate and maintain all Company-Owned Interconnection Facilities.

4. Payment of Interconnection Costs

The estimated cost for interconnecting the Facility with the Company System currently totals \$13,486,425 exclusive of general excise tax ("Total Estimated Interconnection Cost"). This amount represents only estimates of the costs incurred or to be incurred by Hawaiian Electric to interconnect its system with the Facility, and is subject to change as supplemental studies, detailed engineering and design, and implementation progress, and upon receipt of final data to be provided by WPV prior to interconnection of the Facility with Hawaiian Electric's system.

WPV is required to pay Hawaiian Electric for the cost to design, engineer, and construct Company-Owned Interconnection Facilities. WPV initially pays to Hawaiian Electric the "Total Estimated Interconnection Cost" in accordance with the schedule set forth in Attachment G of the PPA. In accordance with the terms of the PPA, prior to the Execution Date,

WPV remitted \$260,000 to Hawaiian Electric as its Initial Payments. No later than December 20, 2014, a payment of \$4,016,347 is due, which is a portion of the Company-Owned Interconnection Facilities Prepayment Amount. Thereafter, WPV will remit the procurement and construction payments in accordance with the schedule set forth in Attachment G of the PPA.

The final accounting will take place within one hundred twenty (120) days of the first to occur of (i) the Commercial Operations Date; (ii) the date the PPA is declared null and void under either §§ 12.5, 12.6, 13.8, or § 3(b)(i) of Attachment B; or (iii) the date the PPA is terminated. Within thirty (30) days of receipt of a final accounting invoice, WPV will remit to Hawaiian Electric 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 the Total Actual Interconnection Cost is less than the payment received by Hawaiian Electric as the Total Estimated Interconnection Cost, Hawaiian Electric will repay the difference to WPV within thirty (30) days of the final accounting.

5. Additional Interconnection Requirements Study

During the course of the Hawaiian Electric's interconnection requirements studies, an additional issue came to light which requires further study for all projects interconnecting in the Wahiawa region. In normal operating conditions, the Wahiawa region is served by a 138 kV transmission loop system. However, when any part of the Waiau-to-Wahiawa 138 kV line or the Kahe-to-Wahiawa 138 kV line is out of service, the Wahiawa region remains connected in a radial condition only. As a result, in a contingency event such as a fault that causes the outage of this remaining 138 kV radial connection (i.e., "N-1-1 contingency"), it is possible that the generation interconnecting to this line would be stranded within the Wahiawa region and could be temporarily islanded with a very high generation-to-load ratio until the generation is disconnected. The possible overvoltage impacts of this N-1-1

contingency are a significant concern that must be evaluated with detailed PSCAD analyses that can precisely represent the behavior of multiple projects connected to the 138 kV transmission loop in the Wahiawa region at the same time (the “Additional IRS”).

The Additional IRS has not yet been completed. However, because Hawaiian Electric did not want to delay completion of the PPAs, Hawaiian Electric and WPV have agreed to add an additional provision to the PPA in Section 29.26 (N-1-1 Contingency) addressing the Additional IRS study. The new provision provides that if the Additional IRS finds there will be overvoltage concerns with the N-1-1 contingency then mitigating measures may be implemented. If an overvoltage concern exists and mitigating measures are not implemented then the Company anticipates having to curtail WPV’s facility for significant durations through year 2020 while line upgrades are completed on the Waiau-to-Wahiawa 138 kV line and the Kahe-to-Wahiawa 138 kV line.

In Section 29.26, Hawaiian Electric has agreed that if acceptable mitigating measures exist and if the Commission approves cost recovery for such mitigating measures then the Company shall pay for and implement such measures. In addition, if a possible overvoltage situation is discovered and curtailment due to maintenance on the 138 kV line must occur, the Company will pay WPV for: (1) maintenance curtailment related to the 138 kV line; and (2) maintenance curtailment for “planned maintenance” (identified on a yearly schedule provided by Company) that occurs in excess of two weeks per year up to a total of 10 weeks until the 138 kV maintenance is completed.

F. Accounting and Financial Impacts

1. Consolidation Accounting

Financial Accounting Standards Board (“FASB”) Accounting Standards

Codification (“ASC”) 810, Consolidation,¹⁹ addresses variable interest entities (“VIE”) and primary beneficiaries (entities that consolidate VIEs). FASB ASC 810 could potentially require that the purchaser under a PPA, such as Hawaiian Electric, consolidate the seller, such as WPV. If the PPA is determined to constitute a variable interest in WPV with Hawaiian Electric as the primary beneficiary, then Hawaiian Electric will be required to consolidate WPV onto its financial statements. Consolidating WPV onto Hawaiian Electric’s financial statements will have uncertain impacts on the assessments of investors and/or credit rating agencies on the risks associated with this PPA and Hawaiian Electric’s creditworthiness. In addition, if Hawaiian Electric is required to consolidate WPV onto its financial statements, then Hawaiian Electric’s management will be required to assess the adequacy of its internal controls over financial reporting, in order to comply with Section 404 of the Sarbanes-Oxley Act of 2002. Hawaiian Electric is unwilling to be subject to accounting treatment that results from VIE treatment as set forth in FASB ASC 810.²⁰

A preliminary consolidation evaluation of the PPA and WPV was performed under FASB ASC 810, and it appears consolidation is not required. FASB ASC 810 requires Hawaiian Electric to continuously reassess its evaluation on an on-going basis.

¹⁹ 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 Generally Accepted Accounting Principles issued by FASB, American Institute of Certified Public Accountants, Emerging Issues Task Force (“EITF”) (with the exception of the Securities Exchange Commission) have been codified into a single source of authoritative guidance. For 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, Hawaiian Electric’s 2005 test year rate case, HECO-2114 for additional information on this accounting guidance.

²⁰ See PPA § 24.5.

2. Lease Accounting

FASB ASC 840, Leases,²¹ specifies tests to be applied to an arrangement, in this case, the PPA, to determine (1) 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, and (2) if it is deemed a lease, whether it is an operating or capital lease.

If the PPA is deemed a lease, it would be classified as either an operating or a capital lease. If it is deemed an operating lease, Hawaiian Electric would account for payments as expenses and WPV would report the investment in assets, related depreciation expense and lease revenue. If the PPA is deemed a capital lease, Hawaiian Electric would report an investment in assets, 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 when Hawaiian Electric must re-assess whether lease accounting treatment is required. Hawaiian Electric will re-perform this analysis when Commission approval is received, and thereafter, if necessary.

3. Impact of Imputed Debt on Credit Quality

The payments Hawaiian Electric is required to make under this PPA are for energy purchases, as well as for Compensable Curtailed Energy, as set forth in the PPA. 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 ratios used to evaluate Hawaiian Electric's

²¹ Formerly EITF No. 01-8, "Determining Whether an Arrangement Contains a Lease" and Statement of Financial Accounting Standards No. 13 "Accounting for Leases." As described in footnote 22, supra, accounting principles have been codified into a single source of authoritative guidance effective July 1, 2009. See "Lease Arrangements Have Broadened" filed in Docket No. 04-0113, Hawaiian Electric's 2005 test year rate case, HECO-2113 for additional information.

risk profile. On May 7, 2007, Standard & Poor's ("S&P") published an article titled "Standard & Poor's Methodology For Imputing Debt For U.S. Utilities' Power Purchase Agreements" ("S&P's 5-7-07 Article"). 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."²² S&P determines an implied capacity payment for the PPA in order to calculate imputed debt.²³

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 \$3,826,695, with annual rebalancing costs estimated at about \$261,227.

VI. 138 kV OVERHEAD TRANSMISSION LINE

A. Approval for Overhead Lines is Appropriate

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 \$3,826,695, with annual rebalancing costs estimated at about \$261,227. The implementation of the WPV project will require an extension of the Kahe-Wahiawa 138kV

²² S&P's 5-7-07 Article at 5.

²³ In this regard, S&P's 5-7-07 Article at 5-6 states:

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. In cases of resources such as solar power that exhibit very low capacity factors, we will adjust the kilowatts under contract to reflect the anticipated capacity factor that the resource is expected to achieve.

We derive the proxy cost of capacity using empirical data evidencing the cost of developing new peaking capacity. We will reflect regional differences in our 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.

transmission line onto the project's property, located on a private parcel of land west of Interstate H-2, and 0.5 miles east of Mililani. Access to the project is by a private agricultural road with ingress/egress off of Ka Uka Blvd (across from the Costco Waipio complex).

Hawaiian Electric reviewed the requirements set forth in HRS §269-27.6 to determine whether the 138kV transmission line extensions should be constructed above or below the surface of the ground. In making the determination to build the extensions of the Kahe-Wahiawa 138kV transmission line and OPGW overhead, Hawaiian Electric considered the following:

1. Whether a benefit exists that outweighs the costs of placing the electric transmission system underground;

Installing the line extension of the Kahe-Wahiawa 138 kV transmission line underground is estimated to cost approximately \$1,026,866 more than the overhead alternative (i.e., \$2,969,116 versus \$1,942,250, not including removal costs). (See Exhibit 12 for the underground and overhead lines capital cost estimates). The visual impact of extending the 138 kV overhead lines will not significantly increase, as it will be located along the existing Hawaiian Electric 138 kV overhead lines (Kahe-Wahiawa). The transmission line extension will also be in an undeveloped area and not within a high-density population area. As a result, the visual impact will not be significantly increased, and the benefits of undergrounding, if any, do not outweigh the costs (see Attachment 2 for photos of the proposed line route).

The scope of the project is to extend Hawaiian Electric's existing Kahe-Wahiawa 138kV for a loop in/out interconnection to the Akau substation. The transmission line extensions will include two spans into the station, one approximately 169 feet long and the other approximately 170 feet long, and includes two (2) single circuit dead-end steel poles and one (1) single circuit tangent steel pole. The conductor system is composed of two sub-conductors (double bundled). The existing OPGW on the Kahe-Wahiawa transmission line will be spliced

with new OPGW to be routed on two diverse routes into the Akau Substation. The new segment of OPGW will be required for lightning protection into each of the substation dead-ends.

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;

Hawaiian Electric is not aware of any governmental public policy requiring the 138 kV line extensions to be constructed underground in the area.

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

Hawaiian Electric inquired whether First Wind (WPV) was willing to pay for the additional costs of undergrounding the 138 kV line extensions (see Exhibit 12 for a copy of Hawaiian Electric's letter). First Wind is reviewing their assessment of the costs and criteria associated with undergrounding the proposed line prior to responding to the Company's inquiry to fund the undergrounding of the proposed line. No government agencies or parties were approached to pay for this project.

4. The amortized cost of construction over the respective usable life of an above-ground versus underground system;

The estimated cost difference between the overhead and underground installations of the Kahe-Wahiawa 138 kV transmission line extension is due to the cost of the poles and conductors and their installation for an above ground line versus the costs of the ductlines and conductors and the installation costs for an underground line (see Exhibit 12 for the overhead and underground alignments). The estimated initial capital cost of the overhead and underground transmission line options are summarized as follows:

| | <u>Overhead</u> | <u>Underground</u> |
|----------------------|-----------------|--------------------|
| Initial Capital Cost | \$1,942,250 | \$2,969,116 |

The overhead and underground initial capital costs are shown in Exhibit 12.

The combined capital and O&M estimated rate impacts (cents/kWh) for Hawaiian Electric customers for the overhead and underground installations are as follows:

| | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|-------------|-------------|-------------|-------------|
| Overhead | 0.0014 | 0.0013 | 0.0012 |
| Underground | 0.0037 | 0.0035 | 0.0033 |

For a Hawaiian Electric customer that uses 600 kWh of electricity per month, the estimated bill impacts (\$/month) for overhead and underground installations are as follows:

| | <u>2017</u> | <u>2018</u> | <u>2019</u> |
|-------------|-------------|-------------|-------------|
| Overhead | \$0.01 | \$0.01 | \$0.01 |
| Underground | \$0.02 | \$0.02 | \$0.02 |

The combined capital and operating and maintenance ("O&M") amortized cost calculations for the overhead and underground alignments are shown in Exhibit 12.

5. The amortized cost of repair over the respective usable life of an above-ground versus underground system;

Historical O&M costs for both overhead and underground transmission lines are shown in the table below:

| Year | Annual Operating and Maintenance Costs (per mile) | |
|----------------|--|-------------------------|
| | Overhead Cost | Underground Cost |
| 2009 | \$12,050 | \$9,159 |
| 2010 | \$13,983 | \$40,185 |
| 2011 | \$17,858 | \$4,556 |
| 2012 | \$14,865 | \$3,178 |
| 2013 | \$18,041 | \$20,476 |
| Average | \$15,359 | \$15,511 |

These historical maintenance costs over the last five years show that the average operation and maintenance costs of overhead and underground transmission lines are about the

same. See the response to item (4) above for the combined capital and O&M rate and bill impacts. The combined capital and O&M amortized cost calculations for the overhead and underground line extensions are shown in Exhibit 12.

6. The risk of damage or destruction over the respective usable life of an above-ground versus an underground system;

There are tradeoffs in the reliability of underground and overhead systems. Overhead lines are subject to more frequent outages, but they tend to be of shorter duration than outages for underground lines. When faults occur in underground systems, repairs can take weeks instead of days. When lines are underground, they are not exposed to faults from insulator and shield wire failure. However, underground lines experience their own host of problems from construction, heat and ground movement.

When developing wind pressure designs for the proposed transmission line, Hawaiian Electric follows HAR Chapter 6-73 (Installation, Operation, and Maintenance of Overhead and Underground Electrical Supply and Communication Lines), including the National Electric Safety Code, 2002 Edition (“NESC”). The formulas used to develop the wind pressures take wind effects (such as gusts, conductor drag, and terrain) into consideration. The poles and conductors would be designed to survive the anticipated wind loads of an Iniki-class hurricane.. It is unlikely that the proposed poles or lines would be knocked down or cause hazards during storms (e.g., high winds, rains, hurricanes).

As for the lateral loads due to earthquakes, the City and County Building Code requires that structures be designed in accordance with the seismic design provisions of the 2006 International Building Code. The magnitude of the design loading is a function of the structure's mass, and is a site specific calculation that varies according to the characteristics of the soils

onsite. Because an overhead transmission line is a flexible system generally constructed out of materials that do not have large concentrations of mass, the lateral loads are governed by the wind pressure on the exposed surface area. Accordingly, Hawaiian Electric does not anticipate a significant risk of damage to, or destruction of, the above ground transmission line due to seismic activity.

7. The relative safety and liability risks of an above-ground versus underground system;

No long-term health-related impacts are expected in association with either the proposed underground or overhead options for this project. Specifically, Hawaiian Electric's transmission lines are built and operated in accordance with numerous health and safety guidelines, including design and operation standards contained within the NESC, and worker health and safety standards determined by the Federal Occupational Safety and Health Administration ("OSHA").

8. The electromagnetic field emission exposure from an above-ground versus underground system;

In November 2014, CH2MHill published the "Waiawa and Mililani Solar Farm Projects 138-kV Interconnection Lines and Substation/Switchyard, Magnetic Fields and Audible Noise" study. The study provided an analysis comparing the electric and magnetic field ("EMF") levels of an overhead configuration and an underground configuration of the new transmission lines which are a connector tap to the existing Hawaiian Electric Kahe-Wahiawa circuit. The EMF modeling developed for this study shows that outside the site boundaries, there is no significant difference in the electric or magnetic fields between the overhead and the underground configurations for the transmission tap lines. The magnetic field profiles for the underground configuration are a bit narrower than for the overhead configuration but are at about

the same peak field level. For the Waiawa Switchyard/Substation, the magnetic fields are essentially contained within the substation/switchyard fence except where the power lines go in and out. The November 2014 study containing CH2M Hill's subsequent findings are included as Exhibit 12.

From a distance to the nearest home of 1800 feet, the electric and magnetic fields will essentially be zero for both sites for both the tap lines and the substation/switchyard. This is because the electric and magnetic fields decrease quickly with distance and in both cases they are insignificant outside the solar farm site limits.

9. The proximity and visibility of an above-ground system to:

a. High density population areas;

The line extensions of the Kahe-Wahiawa 138 kV transmission line are away from high-density population areas. The new location is within an undeveloped area. Hence, the additional cost of undergrounding the transmission line extensions cannot be justified on this basis.

b. Conservation and other valuable natural resource and public recreation areas;

The extensions of Kahe-Wahiawa 138 kV transmission line and OPGW route are entirely within land owned by Castle & Cooke, Inc. and is zoned for restricted agricultural and general agricultural respectively (AG-1/AG-2). Hawaiian Electric anticipates that the activities required for the overhead line reroute will require a building and land use permit. Hawaiian Electric is awaiting confirmation from the Seller regarding the status of these permits. The nearest areas used for public recreation is Mililani 10 Acres Soccer Field, which is approximately 1.54 miles from the nearest point on the project site, and intervening structures already block the line of site between the park and the project site.

c. Areas of special importance to the tourism industry

The proposed line extensions of the Kahe-Wahiawa 138kV circuit are located far from any areas that might be important to the visitor industry.

d. Other industries particularly dependent on Hawaii's natural beauty;

The line extensions of the Kahe-Wahiawa 138 kV that Hawaiian Electric proposes to construct and operate would not adversely affect industries that are dependent upon Hawaii's natural environment.

10. The length of the system;

The proposed overhead extensions are approximately 2,034 circuit feet in length, while the alternative underground extensions are approximately 2,034 circuit feet in length.

11. The breadth and depth of public sentiment with respect to an above-ground versus underground system;

On January 22, 2014, Neighborhood Board #25 (Mililani/Waipio/Melemanu) passed a resolution in support of First Wind's proposed Waiawa PV project (see Exhibit 7 of the meeting minutes for these meetings). Subsequent to the filing of the subject Application, the Developer will take steps to publicize the subject project, and to seek public comments. These steps may include publishing a public notice of the filing of the Application and/or including notification about the subject project on the Company's website.

Hawaiian Electric does not expect that there is a substantial desire on the part of the community for undergrounding the line extensions of the Kahe-Wahiawa 138 kV circuit. The public notices of the subject Application should help in determining the breadth and depth of public sentiment with respect to an above-ground versus underground relocation for the subject project.

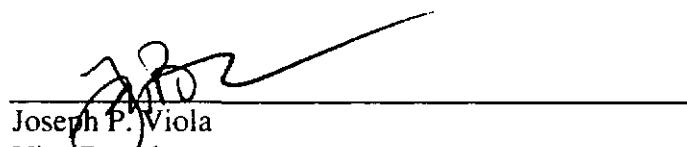
XI. CONCLUSION

Based on the foregoing, Hawaiian Electric respectfully requests that the Commission:

- (a) Approve the PPA;
- (b) Find that the purchased energy charges to be paid by Hawaiian Electric pursuant to the PPA are just and reasonable;
- (c) Find that the purchased power arrangements under the PPA, pursuant to which Hawaiian Electric purchases energy on an as-available basis from WPV, are prudent and in the public interest;
- (d) Authorize Hawaiian Electric to include the purchased energy charges, the payments made for Compensable Curtailed Energy, and related revenue taxes that Hawaiian Electric incurs under the PPA in and through Hawaiian Electric's ECAC to the extent such costs are not included in base rates;
- (e) Determine that the 138 kV line extensions that are included as part of Company-Owned Interconnection Facilities should be constructed above the surface of the ground, pursuant to HRS § 269-27.6; and

(f) Grant such other relief as may be just and reasonable under the circumstances.

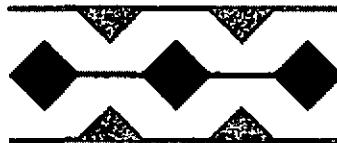
DATED: Honolulu, Hawai'i, December 4, 2014.



Joseph P. Viola
Vice President
Regulatory Affairs
HAWAIIAN ELECTRIC COMPANY, INC.

EXECUTION VERSION

**Hawaiian
Electric**



*Power Purchase Agreement
For
Renewable As-Available Energy*

*Waiawa PV, LLC
a Delaware limited liability company*

Dated: December 3, 2014

| | |
|--|----|
| ARTICLE 1 PARALLEL OPERATION | 27 |
| ARTICLE 2 PURCHASE AND SALE OF ENERGY; RATE FOR PURCHASE AND SALE; PAYMENT FOR COMPENSABLE CURTAILED ENERGY; BILLING AND PAYMENT | 27 |
| ARTICLE 3 FACILITY OWNED AND/OR OPERATED BY SELLER | 37 |
| ARTICLE 4 COMPANY-OWNED INTERCONNECTION FACILITIES | 43 |
| ARTICLE 5 SCHEDULING | 43 |
| ARTICLE 6 FORECASTING | 45 |
| ARTICLE 7 SELLER PAYMENTS | 48 |
| ARTICLE 8 CONTINUITY OF SERVICE | 48 |
| ARTICLE 9 PERSONNEL AND SYSTEM SAFETY | 50 |
| ARTICLE 10 METERING | 50 |
| ARTICLE 11 GOVERNMENT APPROVALS, LAND RIGHTS AND COMPLIANCE WITH LAWS | 52 |
| ARTICLE 12 TERM OF AGREEMENT AND COMPANY'S OPTION TO PURCHASE AT END OF TERM | 53 |
| ARTICLE 13 CONSTRUCTION MILESTONES INCLUDING THE GUARANTEED SUBSTANTIAL COMMITMENT DATES AND THE GUARANTEED COMMERCIAL OPERATIONS DATE | 59 |
| ARTICLE 14 CREDIT ASSURANCE AND SECURITY | 64 |
| ARTICLE 15 EVENTS OF DEFAULT | 68 |
| ARTICLE 16 DAMAGES IN THE EVENT OF TERMINATION BY COMPANY | 72 |
| ARTICLE 17 INDEMNIFICATION | 73 |
| ARTICLE 18 INSURANCE | 77 |
| ARTICLE 19 TRANSFERS, ASSIGNMENTS, AND FACILITY DEBT | 80 |
| ARTICLE 20 SALE OF ENERGY TO THIRD PARTIES | 82 |
| ARTICLE 21 FORCE MAJEURE | 82 |
| ARTICLE 22 WARRANTIES AND REPRESENTATIONS | 86 |
| ARTICLE 23 PROCESS FOR ADDRESSING REVISIONS TO PERFORMANCE STANDARDS | 88 |
| ARTICLE 24 FINANCIAL COMPLIANCE | 93 |
| ARTICLE 25 GOOD ENGINEERING AND OPERATING PRACTICES | 96 |
| ARTICLE 26 EQUAL EMPLOYMENT OPPORTUNITY | 97 |
| ARTICLE 27 SET OFF | 97 |
| ARTICLE 28 DISPUTE RESOLUTION | 97 |

ARTICLE 29 MISCELLANEOUS 103
ATTACHMENT A DESCRIPTION OF GENERATION AND CONVERSION FACILITY
ATTACHMENT B FACILITY OWNED BY SELLER
EXHIBIT B-1 REQUIRED MODELS
EXHIBIT B-2 REACTIVE POWER CURVE
ATTACHMENT C METHODS AND FORMULAS FOR MEASURING PERFORMANCE STANDARDS
ATTACHMENT D CONSULTANTS LIST
ATTACHMENT E SINGLE-LINE DRAWING
ATTACHMENT F RELAY LIST AND TRIP SCHEME
ATTACHMENT G COMPANY-OWNED INTERCONNECTION FACILITIES
ATTACHMENT H BILL OF SALE AND ASSIGNMENT
ATTACHMENT I ASSIGNMENT OF LEASE AND ASSUMPTION
ATTACHMENT J ENERGY PURCHASES BY COMPANY
ATTACHMENT K GUARANTEED PROJECT MILESTONES
ATTACHMENT K-1 COMPANY MILESTONES AND SELLER'S CONDITIONS PRECEDENT
ATTACHMENT L REPORTING MILESTONES
ATTACHMENT M FORM OF LETTER OF CREDIT
ATTACHMENT N ACCEPTANCE TEST GENERAL CRITERIA
ATTACHMENT O CONTROL SYSTEM ACCEPTANCE TEST CRITERIA
ATTACHMENT P SALE OF FACILITY BY SELLER
ATTACHMENT Q RESERVED
ATTACHMENT R REQUIRED INSURANCE
ATTACHMENT S FORM OF MONTHLY PROGRESS REPORT
ATTACHMENT T BLOCK CURTAILMENT PROCEDURES
ATTACHMENT U CALCULATION AND REPORTING OF CURTAILED ENERGY
ATTACHMENT V ANNUAL CONTRACT ENERGY CONSULTANT
ATTACHMENT W INDEPENDENT CURTAILMENT EVALUATOR

POWER PURCHASE AGREEMENT FOR RENEWABLE AS-AVAILABLE ENERGY

THIS POWER PURCHASE AGREEMENT FOR AS-AVAILABLE ENERGY ("Agreement") is made this 3rd day of December, 2014 (the "Execution Date"), by and between Hawaiian Electric Company, Inc., a Hawaii corporation (hereinafter called the "Company") and Waiawa PV, LLC (hereinafter called the "Seller").

WHEREAS, 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 Hawaii Public Utilities Commission (hereinafter called the "PUC"); and

WHEREAS, the Company System is operated as an independent power grid and must both maximize system reliability for its customers by ensuring that sufficient generation is available and meet the requirements for voltage stability, frequency stability, and reliability standards; and

WHEREAS, Seller desires to build, own, and operate a renewable energy facility that is classified as an eligible resource under Hawaii's Renewable Portfolio Standards Statute (codified as Hawaii Revised Statutes ("HRS") 269-91 through 269-95); and

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

WHEREAS, Facility will be located at Waipio, Oahu, State of Hawaii and is more fully described in Attachment A (Description of Generation and Conversion Facility) and Attachment B (Facility Owned by Seller) attached hereto and made a part hereof; and

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

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

DEFINITIONS

For the purposes of this Agreement, the following capitalized terms shall have the meanings set forth below:

"Acceptance Test": A test conducted by Seller and witnessed by Company, within thirty (30) Days of completion of all Interconnection Facilities and in accordance with criteria and test procedures determined by Company and Seller as set forth in Section 2(f) (Acceptance Test Procedure) of Attachment G (Company-Owned Interconnection Facilities), to determine conformance with Article 3 (Facility Owned and/or Operated by Seller) and Attachment G (Company-Owned Interconnection Facilities) and Good Engineering and Operating Practices. Attachment N (Acceptance Test General Criteria) provides general criteria to be included in the written protocol for the Acceptance Test. Successful completion of the Acceptance Test shall be a condition precedent for the performance of the Control System Acceptance Test.

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

"Adjusted Allowed Capacity": Shall have the meaning set forth in Section 2.3(A) (Curtailment Priority Date").

"Adjusted Amount": Shall have the meaning set forth in Section 2.9(A) (General) of this Agreement.

"Adjustment Events": Collectively, (i) events or conditions of Force Majeure for so long as Seller is in compliance with the requirements of Section 21.4 (Satisfaction of Certain Conditions), (ii) Curtailment Events (including Compensable Curtailment Events) exclusive of curtailments by Company because Facility was not operating in compliance with Good Engineering and Operating Practices or other requirements set forth in this Agreement, and (iii) the outages on the Company System unless such outages were caused by Seller's actions or inactions that were not in compliance with this Agreement.

"Agreed Upon Recommendation": Shall mean the Independent Recommendation provided pursuant to Section 3(c) of Attachment J (Energy Purchase by Company) unless:

- If either Party has given, pursuant to Section 3(e) of Attachment J (Energy Purchases by Company), timely

written notice of objection to such Independent Recommendation, then the Agreed Upon Recommendation shall be determined pursuant to Section 3(j) of Attachment J (Energy Purchases by Company), whether by agreement between the Parties or by award of the arbitrator(s).

- If the Agreed Upon Recommendation is subsequently modified pursuant to Section 3(f) of Attachment J (Energy Purchases by Company), then such modification shall be deemed the Agreed Upon Recommendation.

"Agreement": Shall have the meaning set forth in the preamble to this Agreement.

"Allowed Capacity": Shall have the meaning set forth in Section 5(e) of Attachment A (Description of Generation and Conversion Facility) to this Agreement.

"Alternative Nominee": Shall have the meaning set forth in Section 3(b) of Appendix J (Energy Purchases By Company).

"Annual Adjusted Energy": The Actual Output during a Contract Year, as increased by the amount of electric energy that was not delivered because of Adjustment Events during such Contract Year.

"Annual Contract Energy": The Initial Annual Contract Energy, as adjusted downward by the applicable Annual Degradation Factor and as further adjusted downward (if applicable) in accordance with Section 2.2(B) (After the Fourth Contract Year) of this Agreement.

"Annual Degradation Factor": The factor (stated as a percentage) that the electric energy output of the Facility is expected to decline due to degradation of the panels for each Contract Year over a 27-year operational life, which Annual Degradation Factor is to be used to determine Annual Contract Energy for each Contract Year of the Initial Term and (if applicable) the Bank Curtailed Energy Term. The Annual Degradation Factor shall be determined as provided in Section 2.11 (Determination of Initial Annual Contract Energy).

"Appeal Period": Shall have the meaning set forth in Section 29.20(B) (Non-appealable PUC Approval Order) of this Agreement.

"Arbitration Rules": Shall have the meaning set forth in Section 28.2(B) (Arbitration).

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

"Average Annual Energy": A three-year average of Annual Adjusted Energy over a rolling period of three (3) consecutive Contract Years, calculated at the end of each Contract Year, beginning with the end of the fourth Contract Year.

"Banked Curtailed Energy": Shall have the meaning set forth in Section 12.10(A) (Banked Curtailed Energy and Term Extension) of this Agreement.

"Banked Curtailed Energy Term": Shall have the meaning set forth in Section 12.10(B)(1) of this Agreement of this Term Sheet.

"Base Load Unit": A generating unit that is normally on-line twenty-four (24) hours a Day. This includes any unit that is scheduled to be on-line continuously for a given Day because a unit which is normally a Base Load Unit is on maintenance or otherwise temporarily out of service.

"Base Rate": The primary index rate established from time to time by the Bank of Hawaii in the ordinary course of its business and published by intrabank circular letters or memoranda for the guidance of its loan officers in pricing all of its loans which float with the Base Rate. A change in the Base Rate shall take effect on the date upon which a change in the Base Rate is made effective by the Bank of Hawaii. In the event the Bank of Hawaii no longer establishes a Base Rate, the term "Base Rate" shall mean the primary index rate established by a leading Hawaii financial institution that is the most similar to the former Bank of Hawaii Base Rate.

"Bill of Material": A list of equipment to be installed at the 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.

"Calculated Output": The number of kilowatt hours ("kWh") that the Facility is capable of producing over a given period of time calculated by the Facility Output Model and taking into account actual operating conditions during such period (for example, solar

irradiance measured at the Facility, self-curtailed units, and derated units or units that are otherwise unavailable to produce electric energy), as demonstrated by Seller to Company's reasonable satisfaction. Such demonstration shall include but not be limited to reporting to Company, and providing Company with access to, data establishing solar irradiance and unit availability. Such access shall include but not be limited to electronic access on a real time basis 24-hours per Day, as well as physical access to Seller's operator log books. "Calculated Output" shall also take into account any electric energy consumed by the Facility and electric energy losses from the solar panels to the Point of Interconnection. Subject to the foregoing, the Calculated Output of a solar photovoltaic project during a Curtailment Event shall be calculated as provided in Section 3(b). (Calculation Guidelines) of Attachment U (Calculation and Reporting of Curtailed Energy).

"Claim": Any claim, suit, action, demand or proceeding.

"Claiming Entity": Shall mean Seller and any direct or indirect owner of a membership interest in Seller which is eligible to claim Hawaii Renewable Energy Tax Credit in a given year.

"COD Delay LD Period": Shall have the meaning set forth in Section 13.4(B) (Termination and Termination Damages for Failure to Achieve Guaranteed Commercial Operations Date).

"Code": Shall mean the United States Bankruptcy Code, Title 11 of the United States Code, as the same shall have been amended from time to time.

"Commercial Operations": Upon satisfaction of the following conditions, the Facility shall be considered to have achieved Commercial Operations on the Day specified in Seller's written notice described below: (i) the Acceptance Test has been passed, (ii) generating units representing 80% of the Contract Capacity have passed Control System Acceptance Tests, (iii) the Transfer Date has occurred, (iv) Seller has (1) provided to Company the Required Models (as defined in Section 6(a) (Seller's Obligation to Provide Models) of Attachment B (Facility Owned by Seller)) in the form of Source Code (as defined in Section 6(b)(i)(A) (Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller)), (2) placed the current version of the Source Code for the Required Models with the Source Code Escrow Agent as required in Section 6(b)(i)(A) (Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller), or (3) if Seller is unable to arrange for the placement of the appropriate

Source Code into the Source Code Escrow account, (a) provided the required letter of credit or (b) placed the required funds with the Monetary Escrow Agent, as required in Section 6(b)(ii)(A) (Establishment of Monetary Escrow) of Attachment B (Facility Owned by Seller), (v) the Initial Annual Contract Energy and the Annual Degradation Factor have been determined as provided in Section 2.11 (Determination of Initial Annual Contract Energy) and (vi) Seller provides Company with written notice that (aa) Seller is ready to declare the Commercial Operations Date, (bb) Seller reasonably expects that the generating units representing the remaining 20% of the Contract Capacity will be ready to undergo the Control System Acceptance Tests within the following sixty (60) Days, and (cc) the Commercial Operations Date will occur within 24 hours (i.e., the next Day).

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

"Company": Shall have the meaning set forth in the preamble to this Agreement.

"Company Milestone Date": Shall have the meaning set forth in Section 13.8 (Company Milestones).

"Company-Owned Interconnection Facilities": Shall have the meaning set forth in Section 1(a) (Description of Company-Owned Interconnection Facilities) of Attachment G (Company-Owned Interconnection Facilities).

"Company-Owned Interconnection Facilities Prepayment Amount": The total of the amounts payable under Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) and Section 3(b)(iii) (Balance of Company-Owned Interconnection Facilities Payment) of Attachment G (Company-Owned Interconnection Facilities) of this Agreement.

"Company-Owned Interconnection Facilities Prepayment Date": Shall have the meaning set forth in Section 3(B)(ii) (Company-Owned Interconnection Facilities Prepayment) of Attachment G (Company-Owned Interconnection Facilities) of this Agreement.

"Company System": The electric system owned and operated by 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 System Operator": The authorized representative of Company who is responsible for carrying out Company dispatch and curtailment of electric energy generation interconnected to the Company System.

"Company's Maintenance Schedule": Shall have the meaning set forth in Section 29.26(D) (N-1-1 Contingency).

"Compensable Curtailed Energy": The Curtailed Energy that results from a Compensable Curtailment Event.

"Compensable Curtailment Event": Any Curtailment Event other than a Curtailment Event due to (a) an Emergency, (b) a Forced Outage, (c) the Facility not operating in compliance with Good Engineering and Operating Practices, (d) the Company's construction, installation, maintenance, repair, replacement, removal, investigation, testing or inspection of any of its equipment or any part of the Company System, including accommodating the installation and/or acceptance test of non-utility owned facilities to Company System, or (e) Force Majeure; provided, however, that any Curtailment Event initiated by Company during the hours of 7:00 a.m. and 6:00 p.m. HST for the purpose of Planned Maintenance or Wahiawa 138 kV Maintenance above the Maintenance Cap shall be a Compensable Curtailment Event. For avoidance of doubt, a loss of curtailment priority for Subordinate Allowed Capacity under Section 2.3 (Adjustment of Curtailment Priority) of this Agreement does not constitute a Compensable Curtailment Event and the electric energy that is not purchased by the Company due to such loss of curtailment priority does not constitute Compensable Curtailed Energy.

"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 Order No. 23121 issued December 8, 2006.

"Construction Financing Closing Milestone": Shall have the meaning set forth in Attachment K (Guaranteed Project Milestones).

"Construction Milestones": The Reporting Milestones set forth in Attachment L (Reporting Milestones) and the Guaranteed Project Milestones set forth in Attachment K (Guaranteed Project Milestones).

"Construction Start Date Milestone": The date by which continuous construction of permanent structures shall begin at the Site in

accordance with Attachment L (Reporting Milestones). The Construction Start Date occurs when Seller begins pouring the foundation or driving the piles for mounting and racking components.

"Consumer Advocate": Shall have the meaning set forth in Section 24.2 (Confidentiality).

"Consumer Price Index": The Consumer Price Index for All Urban Consumers (CPI-U).

"Contract CapacitySection 5(b) (Design and Capacity) of Attachment A (Description of Generation and Conversion Facility) to this Agreement.

"Contract PriceAttachment J (Energy Purchases by Company) to this Agreement.

"Contract Yearprovided, however, that, in the event the Commercial Operations Date is not the first Day of the calendar month, the initial Contract Year shall also include the Days from the Commercial Operations Date to the first Day of the succeeding month.

"Contract Year 1

"Control System Acceptance Test(s)Section 1(h) (Control System Acceptance Test Procedures) of Attachment B (Facility Owned by Seller). Attachment O (Control System Acceptance Test Criteria) provides general criteria to be included in the written protocol for the Control System Acceptance Test.

"Curtailment Block ASection 2(e)(iii) of Attachment B (Facility Owned by Seller) of this Agreement.

"Curtailed Energy

Event; provided, however, that if Company reasonably concludes that the foregoing calculation is unlikely to be representative of the Curtailed Energy for the duration of the Curtailment Event or the Adjustment Event (as applicable), the Curtailed Energy shall be the Curtailed Energy for such event as calculated by mutual agreement of the Parties.

"Curtailment Control Interface": Shall have the meaning set forth in Section 1(g) (Curtailment Control Interface) of Attachment B (Facility Owned by Seller) of this Agreement.

"Curtailment DisagreementSection 5(b) (Notice of Disagreement) of Attachment U (Calculation and Reporting of Curtailed Energy).

"Curtailment EventArticle 8 (Continuity of Service) and Article 9 (Personnel and System Safety) of this Agreement. A Curtailment Event shall commence at the time the Facility receives the curtailment signal from the Company System Operator and shall end at the time the Facility receives the curtailment control signal from the Company System Operator to end or modify the curtailment set point. Curtailment Events in which the Company System Operator modified the curtailment set point shall constitute separate Curtailment Events, using the time of which the Facility receives the curtailment control signal modifying the curtailment set point as the end time of the first Curtailment Event and the start time of the subsequent Curtailment Event. Certain Curtailment Events will satisfy the definition of Adjustment Events.

"Curtailment Priority DateSection 2(e) of Attachment B (Facility Owned by Seller) to this Agreement.

"Curtailment ReportSection 4 (Format of Curtailment Report) of Attachment U (Calculation and Reporting of Curtailed Energy).

"Daily Delay DamagesSection 13.4(A) (Daily Delay Damages) of this Agreement.

"Day

"Defaulting Party": The Party whose failure, action or breach of its obligations under this Agreement results in an Event of Default under Article 15 (Events of Default) of this Agreement.

"Development Period Security": An amount equal to \$50/kW of the Contract Capacity.

"Dispute": Shall have the meaning set forth in Section 28.1 (Good Faith Negotiations).

"DPR": Shall have the meaning set forth in Section 28.2(A) (Mediation).

"Effective Date": Shall mean the Non-appealable PUC Approval Order Date.

"Emergency": Shall mean, as determined by the Company in its reasonable discretion, a condition or situation, unless caused by Excess Energy Conditions, requiring immediate action by Company (a) to maintain the reliable operation of the Company System; (b) to prevent or limit the loss of load or generation; (c) to maintain public safety or the safety of Company's personnel; or (d) to protect Company, customer, or third-party property.

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

"Energy Price Credit": Shall mean a credit against amounts due by Company to Seller for energy purchases under this Agreement.

"Engineering and Design Work": Shall have the meaning set forth in Section 3(a) of Attachment G (Company-Owned Interconnection Facilities).

"Environmental Credits": Any environmental credit, offset, or other benefit allocated, assigned or otherwise awarded by any Governmental Authority, international agency, or non-governmental renewable energy certificate accounting and verification organization to Company or Seller based in whole or in part on the fact that the Facility is a non-fossil fuel facility. Such Environmental Credits shall include, without limitation, the non-energy attributes of renewable energy including, but not limited to, any avoided emissions of pollutants to the air, soil, or water such as sulfur dioxide, nitrogen oxides, carbon monoxide, particulate matter, and hazardous air pollutants; any other pollutant that is now or may in the future be regulated under the

pollution control laws of the United States; and avoided emissions of carbon dioxide and any other greenhouse gas, along with the renewable energy certificate reporting rights to these avoided emissions, but in all cases shall not mean tax credits.

"Event of Default": Shall have the meaning set forth in Article 15 (Events of Default) of this Agreement.

"Excess Energy Conditions": An operating condition on the Company System expected to occur or that occurs when Company has more energy available than is required to meet the load on the Company System at any point in time and the generating assets interconnected with the Company System are operating at or near their minimum levels, 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. Excess Energy Conditions are more likely to occur during light loading conditions.

"Execution Date": The date designated as such on the first page of this Agreement or, if no date is so designated, the date the Parties exchanged executed signature pages to this Agreement.

"Extended Term": The period of time for which this Agreement automatically continues in effect following the expiration of the Initial Term, or (if Company has exercised its option under Section 12.10 (Company's Option to Extend Term for Banked Curtailed Energy)) the Banked Curtailed Energy Term, subject to the right of either Party to terminate the Agreement upon not less than ninety (90) Days' advance written notice to the other Party, all as set forth in Section 12.1 (Term) of the Agreement.

"Facility": Seller's renewable electric energy facility that is the subject of this Agreement, including all Seller-Owned Interconnection Facilities and all other 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 electric energy by Seller to Company and required to interconnect with the Company System.

"Facility Debt": 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 breakage costs and any claims or interest due with respect to any of the foregoing.

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

"Facility Output Model": The Facility Output Model calculates the power (kW) and energy (kWh) output of the Facility at the Point of Interconnection using the SCADA measured solar irradiance and ambient temperature at the Facility. The Facility Output Model shall set forth the expected energy (kWh) and fifteen (15) minute power (kW) production of the Facility for a complete range of global irradiance values in watts per square meter (W/m^2) ranging from 0 to 1300 W/m^2 , in increments no larger than twenty-five (25) W/m^2 , and temperature values in Celsius for a range of -20 to +50 °C, in increments no larger than one (1) °C consistent with the resolution and accuracy requirements set forth in Section 8 (Data and Forecasting) of Attachment B (Facility Owned by Seller). The Facility Output Model shall use the three preceding calendar months' of SCADA measured data for modeling the power (kW) and energy (kWh) production of the Facility. For the first and second months of operation, all preceding months' SCADA measured data shall be used.

"FASB": Shall have the meaning set forth in Section 24.1 (Financial Compliance).

"FASB ASC 810": Shall have the meaning set forth in Section 24.1 (Financial Compliance).

"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 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 Facility.

"Firmware Update": Shall mean a new release of the Required Model(s) necessary to model equipment modifications in the field.

"Force Majeure": Shall have the meaning set forth in Section 21.1 (Force Majeure) 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, and which terminates when Company determines according to Good Engineering and Operating Practices that it is safe to bring the Facility back onto the Company System.

"Further Reductions": Shall have the meaning set forth in Section 2.3 (C) (Further Reduction) of this Agreement.

"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 Facility, Good Engineering and Operating Practices include, but are not limited to, taking reasonable steps to ensure that:

- (A) Adequate materials, resources and supplies, including fuel, are available to meet the Facility's needs under normal conditions and reasonably foreseeable abnormal conditions.
- (B) Sufficient operating personnel are available and are adequately experienced and trained to operate the Facility properly, efficiently and within manufacturer's guidelines and specifications and are capable of responding to emergency conditions.
- (C) 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.
- (D) 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 reasonably foreseeable abnormal conditions.

(E) 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 Approvals": All permits, licenses, approvals, certificates, entitlements and other authorizations issued by Governmental Authorities, as well as any agreements with Governmental Authorities, required for the construction, ownership, operation and maintenance of the Facility and the Company-Owned Interconnection Facilities, and all amendments, modifications, supplements, general conditions and addenda thereto.

"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 Operations Date": The date specified as such in Attachment K (Guaranteed Project Milestones) of this Agreement, by which Seller guarantees that it will achieve the Commercial Operations Date.

"Guaranteed Project Milestone": Each of the milestone events identified as a "Guaranteed Project Milestone" in Attachment K (Guaranteed Project Milestones) of this Agreement.

"Guaranteed Project Milestone Date": Each of the milestone dates identified as a "Guaranteed Project Milestone Date" in Attachment K (Guaranteed Project Milestones) of this Agreement.

"Guaranteed Substantial Commitment Dates": Each of the milestone dates associated with a milestone event identified as a "Substantial Commitment Milestone" in Attachment K (Guaranteed Project Milestones) of this Agreement. Each Guaranteed Substantial Commitment Date is also a Guaranteed Project Milestone Date.

"Hawaii Investment Tax Credit": Shall mean a credit against Hawaii source income for which Seller is eligible on the

Commercial Operations Date or thereafter because of investment in renewable energy technologies incorporated into the Facility.

"Hawaii Production Tax Credit": Shall mean a credit against Hawaii source income for which Seller is eligible on the Commercial Operations Date or thereafter because of the energy produced by the Facility.

"Hawaii Renewable Energy Tax Credit": Shall have the meaning given in Section 3(a) of Attachment J (Energy Purchases by Company).

"HEI": Hawaiian Electric Industries, Inc.

"HERA": The Hawaii electricity reliability administrator.

"HERA Law": Act 166 (Haw. Leg. 2012), which was passed by the 27th Hawaii Legislature in the form of S.B. No. 2787, S.D. 2, H.D.2, C.D.1 on May 2, 2012 and signed by the Governor on June 27, 2012. The effective date for the law is July 1, 2012. The HERA Law authorizes (i) the PUC to develop, adopt, and enforce reliability standards and interconnection requirements, (ii) the PUC to contract for the performance of related duties with a party that will serve as the HERA, and (iii) the collection of a Hawaii electricity reliability surcharge to be collected by Hawaii's electric utilities and used by the HERA. Reliability standards and interconnection requirements adopted by the PUC pursuant to the HERA Law will apply to any electric utility and any user, owner, or operator of the Hawaii electric system. The PUC also is provided with the authority to monitor and compel the production of data, files, maps, reports, or any other information concerning any electric utility, any user, owner or operator of the Hawaii electric system, or other person, business, or entity, considered by the commission to be necessary for exercising jurisdiction over interconnection to the Hawaii electric system, or for administering the process for interconnection to the Hawaii electric system.

"Historical Annual Data": Shall have the meaning set forth in Section 6.6 (Seller's Historical Data Annual Data Report) 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 Company to have been successfully completed.

"Indemnified Company Party": Shall have the meaning set forth in Section 17.1(A) (Indemnification Against Third Party Claims) of this Agreement.

"Indemnified Seller Party": Shall have the meaning set forth in Section 17.2(A) (Indemnification Against Third Party Claims) of this Agreement.

"Independent Curtailment Evaluator": A person empowered, pursuant to Section 5(c) (Submission of Disagreement to Independent Curtailment Evaluator) of Attachment U (Calculation and Reporting of Curtailed Energy) to resolve disputes due to failure of the Parties to resolve a Curtailment Disagreement.

"Independent Evaluator": A person empowered, pursuant to Section 23.5 (Failure to Reach Agreement) and Section 23.10 (Dispute) of this Agreement, to resolve disputes due to failure of the Parties to agree on a Performance Standards Revision Document.

"Independent Recommendation": Shall have meaning given in Section 3(c) of Attachment J (Energy Purchases by Company).

"Independent Tax Expert": Shall mean a person (i) with experience and knowledge in the field of tax equity project finance for utility-scale electric generating facilities and in the field of Hawaii Renewable Energy Tax Credits and (ii) who is neutral, impartial and not predisposed to favor either Party.

"Independent Tax Report": Shall mean a written report prepared by an Independent Tax Expert in conformance with Section 3(d) of Attachment J (Energy Purchases by Company). An Independent Tax Report shall include sufficient narrative, calculations, analysis and documentation in support of each opinion expressed to allow the reader of such Report to evaluate the reasonableness of each such opinion.

"Information": Shall have the meaning set forth in Section 24.1 (Financial Compliance).

"Initial Annual Contract Energy": Shall mean the estimate of expected annual average electric energy deliveries to Company under this Agreement over the Initial Term. As of the Execution Date, the Initial Annual Contract Energy is deemed to be 100,425 MWh for a Contract Year. Prior to Commercial Operations, the Initial Annual Contract Energy for a Contract Year shall be determined as provided in Section 2.11 (Determination of Initial Annual Contract Energy).

"Initial Term": Shall have the meaning set forth in Section 12.1 (Term).

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

"Interconnection Requirements Study" or "IRS

"Interconnection Requirements Study Letter Agreement" or "IRS Letter Agreement

"IssuerSection 14.8 (Establishment of Security Funds) of this Agreement.

"kV

"kW

"Land Rights

"Laws

"Licensed Contractor WorkSection 29.27 (Licensed Contractor Work).

"Losses

"Maintenance Cap": Shall have the meaning set forth in Section 29.26(E) (N-1-1 Contingency).

"Management Meeting": Shall have the meaning set forth in Section 28.1 (Good Faith Negotiations).

"Measuring Period": Shall have the meaning set forth in Section 2.2(B) (After the Fourth Contract Year).

"Mitigating Measures": Shall have the meaning set forth in Section 29.26(B) (N-1-1 Contingency).

"Model Update": Shall mean a new release of the Required Model(s) that impacts overall product performance, efficiency and usability.

"Monetary Authorized Use": Shall have the meaning set forth in Section 6(b)(ii)(F) (Authorized Use) of Attachment B (Facility Owned by Seller) of this Agreement.

"Monetary Escrow Agent": Shall mean Title Guaranty Hawaii or such other escrow agent approved by Company or, in the event Seller provides a letter of credit in satisfaction of its Monetary Escrow obligations, the letter of credit issuing bank.

"Monetary Escrow Agreement": Shall mean a three party escrow agreement between Seller, Company and the Monetary Escrow Agent naming Company as beneficiary thereunder, which agreement shall be acceptable in form and substance to Company.

"Monetization" or "Monetize

"Monetization Costs": Shall mean the costs of seeking and obtaining an investor able to utilize Non-Refundable Tax Credits, including but not limited to, legal, accounting and financing costs.

"MMS": Meteorological monitoring station.

"Monthly Progress Report": Shall have the meaning set forth in Section 13.7 (Monthly Progress Reports).

"MW": Megawatt.

"Nomination Notice": Shall have the meaning set forth in Section 3(b) of Attachment J (Energy Purchases by Company).

"Non-appealable PUC Approval Order": Shall have the meaning set forth in Section 29.20(B) (Non-appealable PUC Approval Order) of this Agreement.

"Non-appealable PUC Approval Order Date": Shall have the meaning set forth in Section 29.20(D) (Non-appealable PUC Approval Order Date) of this Agreement.

"Non-defaulting Party": Shall have the meaning set forth in Section 15.4 (Rights of the Non-Defaulting Party) of this Agreement.

"Non-performing Party": The Party who is in breach of, or is otherwise failing to perform, its obligations under this Agreement.

"Non-Refundable Tax Credit": Shall mean any Hawaii Renewable Energy Tax Credit (including both a Hawaii Investment Tax Credit and a Hawaii Production Tax Credit) for which the State of Hawaii is not required to refund any tax credit which exceeds the tax payments due to the State of Hawaii by the Claiming Entity or to provide a cash rebate in lieu of such credit to the Claiming Entity.

"Operating Period Security": Shall have the meaning set forth in Section 14.4 (Operating Period Security).

"Party": Each of Seller or Company.

"Parties": Seller and Company, collectively.

"Performance Ratio": A dimensionless quantity, with a value between 0 and 1, which measures the Facility's performance and the effects of performance losses (due to system degradation and irregular maintenance) at the Facility during a specified time period. Company and Seller shall agree to a sampling of a minimum of two (2) weeks of data within the month to be evaluated as representative of the Facility's then capable performance under normal technical operating conditions. For that reason, operations impacted by Force Majeure or Curtailment Events that are not due to Seller, such as Curtailment Events due to Excess Energy Conditions or maintenance on the Company System, would not be considered representative. The Performance Ratio is then calculated by dividing the "System Yield" (kWh/kW) by the

"Reference Yield" (Hours). The "System Yield" is equal to the energy (kWh) delivered by the Facility within the sampling period at the Point of Interconnection divided by the AC power rating (MW) of the Facility. The "Reference Yield" is equal to the total solar insolation (Wh/m^2) within the sampling period divided by a reference irradiance of $1000 \text{ W}/\text{m}^2$. The total solar insolation will be calculated using the SCADA measured solar irradiance at the Facility, up to a maximum measurement of $1000 \text{ W}/\text{m}^2$. Solar irradiance exceeding $1000 \text{ W}/\text{m}^2$ shall be defaulted to $1000 \text{ W}/\text{m}^2$.

"Performance Standards": The various performance standards for the operation of the Facility and the delivery of electric energy from the Facility to Company specified in Section 3 (Performance Standards) of Attachment B (Facility Owned by Seller), as such standards may be revised from time to time pursuant to Article 23 (Process for Addressing Revisions to Performance Standards) 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 the Facility and/or to changes in Seller's operations or maintenance practices necessary to enable the Facility to achieve the performance requirements of such Performance Standards Revision.

"Performance Standards Pricing Impact": Any adjustment in Contract Price in $$/\text{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: (i) recovery of, and return on, any capital investment (aa) 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 (bb) 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); (ii) recovery of reasonably expected net additional operating and maintenance costs; and (iii) an adjustment in pricing necessary to compensate Seller for reasonably expected reductions, if any, in the delivery of

electric energy to Company under this Agreement, which shall consist of (yy) an increase in payments necessary to compensate Seller for expected reduced electric energy payments under this Agreement; and (zz) 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: (i) a statement as to whether Seller believes that it is technically feasible to comply with the Performance Standards Revision and the basis therefor; (ii) the Performance Standards Modifications proposed by Seller to comply with the Performance Standards Revision; (iii) 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 electric energy delivered to Company; (iv) the Performance Standards Pricing Impact of such costs and/or lost revenues; (v) information regarding the effectiveness of such technical improvements or operational modifications; (vi) proposed contractual consequences for failure to comply with the Performance Standard Revision that would be commercially reasonable under the circumstances; and (vii) such other information as may be reasonably required by 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 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 23.10 (Dispute) of this Agreement, in the absence of such written agreement.

"Planned Maintenance": Shall have the meaning set forth in Section 29.26(D) (N-1-1 Contingency).

"Point of Interconnection": The point of delivery of electric energy supplied by Seller to Company where the Facility interconnects with the Company System.

"Project": The Facility as described in Attachment A (Description of Generation and Conversion Facility).

"Project Documents": This Agreement, any ground lease or other agreement or instrument in respect of the Site and/or the Land Rights, all construction contracts to which Seller is or becomes a party thereto, operation and maintenance agreements, and all other agreements, documents and instruments to which Seller is or becomes a party thereto in respect of the Facility, other than the Financing Documents, as the same may be modified or amended from time to time in accordance with the terms thereof.

"Proprietary Rights": Shall have the meaning set forth in Section 29.17 (Proprietary Rights) of this Agreement.

"PUC": Shall have the meaning set forth in the Recitals.

"PUC Approval Order": Shall have the meaning set forth in Section 29.20(A) (PUC Approval Order) of this Agreement.

"PUC Approval Order Date": Shall have the meaning set forth in Section 29.20(C) (Company's Written Statement) of this Agreement.

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

"PUC Submittal Date": The date of the submittal of Company's complete application or motion for a satisfactory PUC Approval Order pursuant to Section 12.3 (PUC Approval) of this Agreement.

"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.

"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

"RecipientSection 24.2 (Confidentiality).

"Refundable Tax Credit

"Renewable Portfolio Standards" or "RPS": The Hawaii law that mandates that Company and its subsidiaries generate or purchase certain amounts of their net electricity sales over time from qualified renewable resources. The RPS requirements in Hawaii are currently codified as Hawaii Revised Statutes (HRS) 269-91 through 269-95.

"Reporting MilestonesAttachment L (Reporting Milestones).

"Required Model" or "Required ModelsSection 6(a) (Seller's Obligation to Provide Models) of Attachment B (Facility Owned by Seller) of this Agreement.

"Revenue Metering Package

"RPS Amendment

"RPS Modifications

electric energy delivered from the Facility to come within the revised definition of "renewable electrical energy" resulting from a RPS Amendment.

"RPS Modifications Document": Shall have the meaning set forth in Section 3.4(C) (RPS Modifications Document).

"RPS Pricing Impact": Any adjustment in Contract Price in \$/MWh necessary to specifically reflect the recovery of the net costs and/or net lost revenues specifically attributable to any RPS Modification, which shall consist of the following: (i) recovery of, and return on, any capital investment (aa) made over a cost recovery period starting after the RPS Modification is made effective following a PUC RPS Order through the end of the Initial Term and (bb) 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); (ii) recovery of reasonably expected net additional operating and maintenance costs; and (iii) an adjustment in pricing necessary to compensate Seller for reasonably expected reductions, if any, in the delivery of electric energy to Company under this Agreement, which shall consist of (yy) an increase in payments necessary to compensate Seller for expected reduced electric energy payments under this Agreement; and (zz) 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.

"SCADA": means Company's supervisory control and data acquisition equipment.

"Security Funds": Shall have the meaning set forth in Section 14.6 (Security Funds).

"Seller": Shall have the meaning set forth in the preamble to this Agreement.

"Seller-Owned Interconnection Facilities": The Interconnection Facilities constructed and owned by Seller.

"Seller's RPS Modifications Proposal": Shall have the meaning set forth in Section 3.4(A) (Renewable Portfolio Standards).

"Site": The parcel of real property on which the Facility will be constructed and located, together with any Land Rights reasonably necessary for the construction, ownership, operation and

maintenance of the Facility. The Site is identified in Attachment A (Description of Generation and Conversion Facility) to this Agreement.

"Source Code": Shall mean the human readable source code of the Required Models which: (i) will be narrated documentation related to the compilation, linking, packaging and platform requirements and any other materials or software sufficient to enable a reasonably skilled programmer to build, modify and use the code within a commercially reasonable period of time for the purposes set forth in Section 6(b)(i)(E) (Authorized Use) and Section 6(b)(ii)(F) (Authorized Use) of Attachment B (Facility Owned by Seller); and (ii) can reasonably be compiled by a computer for execution.

"Source Code Authorized Use": Shall have the meaning set forth in Section 6(b)(i)(E) (Authorized Use) of Attachment B (Facility Owned by Seller) of this Agreement.

"Source Code Escrow": Shall mean the escrow established with the Source Code Escrow Agent under the terms of the Source Code Escrow Agreement under which Source Code shall be confidentially deposited by a Source Code Owner for safekeeping and, upon the satisfaction of certain conditions, released to the Company.

"Source Code Escrow Agent": Shall mean Iron Mountain Intellectual Property Management, Inc. or such other similar escrow agent approved by Company.

"Source Code Escrow Agreement": Shall mean a multi-party escrow agreement between Company, Source Code Escrow Agent and any and all Source Code Owners depositing Source Code into the Source Code Escrow which, among other matters, names Company as beneficiary thereunder, and is otherwise acceptable in form and substance to Company.

"Source Code Owner" Shall mean the developer and/or owner of the Required Models utilizing Source Code authorized to deposit the Source Code with the Source Code Escrow Agent upon the terms of the Source Code Escrow Agreement.

"SOX 404": Shall have the meaning set forth in Section 24.1 (Financial Compliance).

"Subordinate Allowed Capacity": Shall have the meaning set forth in Section 2.3(B) (No Priority for Subordinate Allowed Capacity).

"Substantial Commitment Milestones": Each milestone event identified as a "Substantial Commitment Milestone" in Attachment K (Guaranteed Project Milestones) of this Agreement. Each Substantial Commitment Milestone is also a Guaranteed Project Milestone.

"Tax Credit Floor": Shall mean the maximum dollar amount of the Refundable Tax Credit(s) for the taxable year in question for which the Seller or the Claiming Entities are eligible.

"Tax Credit Offset Date": Shall mean: (i) with respect to Refundable Tax Credits, the date on which Seller receives a refund or rebate from the State of Hawaii of any portion of such Refundable Tax Credits; (ii) with respect to Non-Refundable Tax Credits that are Monetized, the date on which Seller receives payment under each agreement entered into by Seller for the purposes of Monetization of such Non-Refundable Tax Credits; and (iii) with respect to Non-Refundable Tax Credits that are not Monetized, the filing date of any State of Hawaii tax return on which such Non-Refundable Tax Credits are claimed and used to offset tax otherwise due in such year.

"Term": Shall mean, collectively, the Initial Term, the Banked Curtailed Energy Term (if applicable), and the Extended Term (if any).

"Termination Damages": Shall have the meaning set forth in Section 15.4 (Rights of the Non-Defaulting Party) and shall be calculated in accordance with Article 16 (Damages in the Event of Termination by Company) of this Agreement.

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

"Threshold": For each Contract Year, an amount equal to 110% of the Annual Contract Energy for such Contract Year.

"Total Actual Interconnection Cost": Actual costs for the Interconnection Facilities, to be designed, engineered and constructed by Company, as provided in Attachment G (Company-Owned Interconnection Facilities).

"Total Actual Relocation Cost": Shall have the meaning set forth in Section 5(b) of Attachment G (Company-Owned Interconnection Facilities).

"Total Estimated Interconnection Cost": Estimated costs for the Interconnection Facilities, to be designed, engineered and constructed by Company, as provided in Attachment G (Company-Owned Interconnection Facilities).

"Total Estimated Relocation Cost": Shall have the meaning set forth in Section 5(a) of Attachment G (Company-Owned Interconnection Facilities).

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

"Wahiawa 138 kV Maintenance": Shall have the meaning set forth in Section 29.26(B) (N-1-1 Contingency).

ARTICLE 1
PARALLEL OPERATION

Company agrees to allow Seller to interconnect and operate the Facility to provide As-Available Energy in parallel with the Company System; provided, however, that such interconnection and operation shall not: (i) adversely affect Company's property or the operations of its customers and customers' property; (ii) present safety hazards to the Company System, Company's property or employees or Company's customers or the customers' property or employees; or (iii) otherwise fail to comply with this Agreement. Such parallel operation shall be contingent upon the satisfactory completion, as determined in good faith by Company, of the Acceptance Test and, to the extent applicable, the Control System Acceptance Test, in accordance with Good Engineering and Operating Practices.

ARTICLE 2
PURCHASE AND SALE OF ENERGY; RATE
FOR PURCHASE AND SALE; PAYMENT FOR
COMPENSABLE CURTAILED ENERGY; BILLING AND PAYMENT

- 2.1 Purchase and Sale of Electric Energy. Seller agrees to deliver to Company all of the Actual Output produced by the Facility from the Initial In-Service Date through the end of the Term, in accordance with the terms and conditions of this Agreement. Company agrees to purchase electric energy from Seller in accordance with the terms and conditions of this Agreement. Included in the purchase and sale of electric energy are all of the Environmental Credits

associated with the electric energy. Company will not reimburse Seller for any taxes or fees imposed on Seller including, but not limited to, State of Hawaii general excise tax.

2.2 Payment for Electric Energy. Commencing on the Commercial Operations Date, Seller will be paid for electric energy purchased hereunder on a monthly basis as provided in Section 1 (Contract Price) of Attachment J (Energy Purchases by Company), with the Annual Contract Energy being calculated as follows:

- (A) First Four Contract Years. For the first four Contract Years of the Agreement, the Annual Contract Energy will be the Initial Annual Contract Energy (subject to downward adjustment based on the Annual Degradation Factor).
- (B) After the Fourth Contract Year. After the fourth Contract Year, the level of Annual Contract Energy may be subject to downward adjustment based on the performance of Seller in meeting its obligations under this Agreement. After the fourth Contract Year and subsequently on each anniversary of the end of the fourth Contract Year, Company will calculate the Average Annual Energy. Whenever the Average Annual Energy for a given three-year period (the "Measuring Period") is less than 80% of the Annual Contract Energy for that same three-year period, the Annual Contract Energy amount for subsequent Contract Years will be reduced to equal the Average Annual Energy for the Measuring Period.
- (C) Liquidated Damages.
 - (1) Whenever the Average Annual Energy for a given three-year period requires a downward adjustment in the level of Annual Contract Energy pursuant to Section 2.2(B) (After the Fourth Contract Year), Seller may, in lieu of accepting such downward adjustment, elect in writing to pay liquidated damages equal to \$10/MWh of the shortfall in providing 80% of the Annual Contract Energy over such three-year period; provided, however, that such payment shall be made expeditiously. (For example, if the Annual Contract Energy is still the Initial Annual Contract Energy of 100,425 MWh, and the Average Annual Energy is 75% of that

amount, on average for a period of three consecutive Contract Years, the amount of the shortfall would be 15,064 MWh (i.e., 5% of 100,425 MWh X 3), and the amount of the liquidated damages that Seller would have to pay Company to avoid the downward adjustment in the level of Annual Contract Energy for the next Contract Year would be \$150,640 or 15,064 x \$10.

- (2) In order to make the election to pay liquidated damages pursuant to this Section 2.2(C) (Liquidated Damages), Seller shall deliver its written election notice to Company within thirty (30) Days of Company's written notice to Seller of a downward adjustment in Annual Contract Energy pursuant to Section 2.2(B) (After the Fourth Contract Year).
- (3) Each Party agrees and acknowledges that (i) the damages that Company would incur if the downward adjustment in Annual Contract Energy is not made as provided in Section 2.2(B) (After the Fourth Contract Year) of this Agreement would be difficult or impossible to calculate with certainty and (ii) the aforesaid liquidated damages are an appropriate approximation of such damages. Liquidated damages payable under this Section 2.2(C) (Liquidated Damages) may be drawn from the Operating Period Security.
- (4) The calculation of Average Annual Energy for a given three-year period pursuant to Section 2.2(B) (After the Fourth Contract Year) of this Agreement shall always be based on the results of the performance of the Seller in meeting its obligations under this Agreement during such three-year period regardless of whether or not Seller previously paid liquidated damages pursuant to this Section 2.2(C) (Liquidated Damages) as a result of its performance during a preceding three-year period. Accordingly, Seller's payment of liquidated damages pursuant to this Section 2.2(C) (Liquidated Damages) in lieu of accepting a downward adjustment in Annual Contract Energy as a result of Average Annual Energy for given three-year period falling below the required threshold shall have no effect on the calculation of Average Annual Energy pursuant to Section 2.2(B).

(After the Fourth Contract Year) for any succeeding three-year period.

- 2.3 Adjustments to Curtailment Priority. If, at any time subsequent to the Commercial Operations Date, the Average Annual Energy for any three (3) consecutive Contract Years is less than sixty (60) percent of the Initial Annual Contract Energy, then the Facility's curtailment priority over other renewable electric energy facilities with later chronological seniority dates (as more fully set forth in Section 2(e) (Curtailment Methodology) of Attachment B (Facility Owned by Seller)) shall be adjusted as follows:
- (A) Curtailment Priority Date. The Curtailment Priority Date shall thereafter be deemed to apply only to that percentage of the Allowed Capacity equal to the ratio of the Average Annual Energy for such period of three (3) consecutive Contract Years divided by the Initial Annual Contract Energy ("Adjusted Allowed Capacity").
- (B) No Priority for Subordinate Allowed Capacity. The amount of Allowed Capacity in excess of the Adjusted Allowed Capacity (the "Subordinate Allowed Capacity"), if any, shall thereafter be deemed to have no curtailment priority over any current or future generation resources interconnected to the Company System.
- (C) Further Reduction. If any subsequent application(s) of Section 2.3(A) (Curtailment Priority Date) of this Agreement result(s) in further reduction(s) ("Further Reduction") in the percentage of Allowed Capacity to which the Curtailment Priority Date is deemed to apply, such Further Reduction shall thereafter be included in the Subordinate Allowed Capacity and shall have no curtailment priority, pursuant to Section 2.3(B) (No Priority for Subordinate Allowed Capacity) of this Agreement, over any current or future generation resources interconnected to the Company System.
- 2.4 Determination of Average Annual Energy. For purposes of determining the Average Annual Energy necessary to perform the calculations required under Section 2.2(B) (After the Fourth Contract Year), Section 2.2(C) (Liquidated Damages) and Section 2.3 (Adjustments to Curtailment Priority) of this Agreement, it is first necessary to determine Annual Adjusted Energy. For this purpose, the Curtailed Energy for each Adjustment Event will be determined as provided in

Attachment U (Calculation and Reporting of Curtailed Energy). For any Adjustment Event for which Seller believes it is entitled to a determination of Curtailed Energy which continues beyond the end of the Contract Year during which such Adjustment Event began, the end of such Contract Year will, solely for purposes of calculating Annual Adjusted Energy, be considered to be the end of such Adjustment Event, and a new Adjustment Event will be considered to have commenced with the first Day of the next Contract Year. No claim of Curtailed Energy that Seller is unable to demonstrate to Company's reasonable satisfaction shall be included in the calculation of Adjusted Annual Energy for the Contract Year in question.

2.5 Payments Prior to Commercial Operations Date. Prior to the Commercial Operations Date, Seller will be paid for electric energy as follows:

- (A) Prior to the Initial In-Service Date. For the period prior to the Initial In-Service Date, Company shall not be obligated to accept or pay for any electric energy delivered by Seller, however, any electric energy accepted by Company during this period shall, provided that the Non-appealable PUC Approval Order Date has been attained, be paid for at a rate equivalent to 100% of the Contract Price for Contract Year 1.
- (B) After the Initial In-Service Date. For the period following the Initial In-Service Date, provided that the Non-appealable PUC Approval Order Date has been attained, and prior to the Commercial Operations Date:
 - (1) For the first thirty (30) Days of said period, Company shall be obligated to accept and pay for electric energy, except for those circumstances set forth in Article 8 (Continuity of Service) and Article 9 (Personnel and System Safety) of this Agreement, from each solar photovoltaic generator plus inverter unit as it is installed and successfully completes the Control System Acceptance Test(s), up to the Allowed Capacity, and electric energy accepted by Company shall be paid for at a rate equivalent to 100% of the Contract Price for Contract Year 1;
 - (2) After thirty (30) Days, Company shall be obligated to accept and pay for electric energy, except for those circumstances set forth in Article 8

(Continuity of Service) and Article 9 (Personnel and System Safety) of this Agreement, from each solar photovoltaic generator plus inverter unit as it is installed and successfully completes the Control System Acceptance Test(s), up to the Allowed Capacity, and electric energy accepted by Company shall be paid for at a rate equivalent to 75% of the Contract Price for Contract Year 1.

- 2.6 Payment for Compensable Curtailed Energy. Commencing on the Commercial Operations Date and thereafter during the Initial Term, but not during either the Banked Curtailed Energy Term (if any) or the Extended Term (if any), Seller will be paid for Compensable Curtailed Energy as provided in Section 1 (Contract Price) of Attachment J (Energy Purchases by Company), with Compensable Curtailed Energy being established as follows: (i) if the Compensable Curtailed Energy set forth in the Curtailment Report for the month in question is not then subject to a disagreement under Section 5 (Disagreements Concerning Curtailed Energy) of Attachment U (Calculation and Reporting of Curtailed Energy) or dispute resolution under Article 28 (Dispute Resolution) of this Agreement, Seller shall be paid for the Compensable Curtailed Energy set forth in such Curtailment Report as provided in Section 2.8 (Invoices for Compensable Curtailed Energy) of this Agreement; and (ii) if all or a portion of the Compensable Curtailed Energy set forth in the Curtailment Report for the month in question is the subject to a disagreement under Section 5 (Disagreements Concerning Curtailed Energy) of Attachment U (Calculation and Reporting of Curtailed Energy) or dispute resolution under Article 28 (Dispute Resolution) of this Agreement, (aa) Seller shall be paid as set forth in Section 2.8 (Invoices for Curtailed Excess Energy) of this Agreement for that portion (if any) of the Compensable Curtailed Energy set forth in such Curtailment Report that is not then subject to such disagreement or dispute and (bb) Seller shall be paid for that portion of such Curtailed Excess Energy that is then subject to such disagreement or dispute within thirty (30) Days of the resolution of such disagreement or dispute.

2.7 Invoices for Electric Energy.

- (A) Company's Obligation to Provide Certain Data. By the fifth (5th) Business Day of each calendar month, Company shall provide Seller or its designated agent with the appropriate data for Seller to compute the amount to be paid for the electric energy purchased by Company in

the preceding calendar month as determined in accordance with this Agreement.

- (B) Seller's Preparation of the Monthly Invoice for Electric Energy. By the tenth (10th) Business Day of each calendar month following the Commercial Operations Date, Seller shall submit to Company an invoice that separately states the following for the preceding month: (i) the Actual Output during the preceding month; (ii) the charge for electric energy purchased by Company, as set forth in Attachment J (Energy Purchases by Company) of this Agreement; and (iii) the monthly metering charge as set forth in Article 7 (Seller Payments) of this Agreement.
- (C) Payment Procedures for Electric Energy Invoice. By the twentieth (20th) 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), Company shall make payment on the electric energy invoice of the preceding month, or provide to Seller an itemized statement of its objections to all or any portion of such invoice and pay any undisputed amount. Notwithstanding the foregoing, the Day by which the Company shall make payment to Seller hereunder shall be increased by one (1) Day for each Day that Seller is delinquent in providing to the Company the information required under Section 2.7(B) (Seller's Preparation of the Monthly Invoice for Electric Energy) of this Agreement. However, if Company is not timely in providing data required in Section 2.7(A) (Company's Obligation to Provide Certain Data) and this directly causes Seller to be unable to deliver its invoice in accordance with the time frame set forth in Section 2.7(B) (Seller's Preparation of the Monthly Invoice for Electric Energy), then Company shall still meet the twentieth (20th) Business Day payment date. In such case, an estimated payment, subject to reconciliation with the complete invoice, may be made by Company as an interim provision until a complete invoice can be prepared by Seller and received by Company.
- (D) Late Payments. Notwithstanding all or any portion of such invoice in dispute, any payment for electric energy not made to Seller by the twentieth (20th) 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 2.7(C) (Payment Procedures for Electric Energy Invoice), shall accrue interest at the average daily Base Rate plus two percent (2%) for the period until the outstanding interest and invoiced amounts (or amounts due to 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.

- (E) Company's Billing Records. Seller, after giving reasonable advance written notice to Company, shall have the right to review all billing, metering and related records necessary to verify the accuracy of the data provided by Company pursuant to Section 2.7(A) (Company's Obligation to Provide Certain Data) of this Agreement and payments relating to the Facility during Company's normal working hours on Business Days. Company shall maintain such records for a period of not less than thirty-six (36) months.

2.8 Invoices for Compensable Curtailed Energy.

- (A) Company's Obligation to Provide Certain Data.

- (1) If the reason for a Curtailment Event is not provided to Seller concurrently with such Curtailment Event, Company shall provide Seller or its designated agent, by the fifth (5th) Business Day of each Calendar month, with a written statement identifying the reason for each such Curtailment Event during the preceding month for inclusion in Seller's Curtailment Report for such month. If Company fails to identify a reason for a Curtailment Event, either concurrently with such Curtailment Event or in the aforementioned written statement, Seller shall designate as "N/A" the reason for such Curtailment Event in its Curtailment Report and shall include in the "Total Compensable Curtailed Energy During Report Period" the Curtailed Energy for any Curtailment Event for which the reason is designated as "N/A". Seller's designation of the reason for a Curtailment Event as "N/A" does not create a presumption that Company in fact failed to previously provide Seller with the reason for such Curtailment Event.

Within fifteen (15) Business Days of Company's receipt of any Curtailment Report containing a "N/A" designation for the reason for any Curtailment Event (such 15-Business Day period is referred to below as the "Identification Period"), Company shall provide Seller or its designated agent with a written statement identifying the reason for such Curtailment Event. If, by the end of the Identification Period, Company has in fact failed to identify to Seller a reason for a Curtailment Event, such Curtailment Event shall be deemed to be a Compensable Curtailment Event and the Curtailed Energy for such Curtailment Event shall be appropriately included in the "Total Compensable Curtailed Energy During Report Period" for the Curtailment Report covering the period during which the Curtailment Event in question occurred. If, on the other hand, Company has identified to Seller or its designated agent a reason for a Curtailment Event that does not come within the definition of a Compensable Curtailment Event, any disagreement by Seller with respect to such reason shall be subject to resolution under Section 5 (Disagreements Concerning of Attachment U (Calculation and Reporting of Curtailed Energy).

- (2) Within thirty (30) Days of Seller's written request for supporting information for the reason(s) for any specific Curtailment Event(s) identified in Company's written statements, Company shall provide such supporting information.
- (B) Monthly Invoice for Compensable Curtailed Energy. By the tenth (10th) Business Day of each calendar month following the Commercial Operations Date and thereafter for the balance of the Initial Term, Seller shall submit to Company, concurrently with the Curtailment Report for the preceding month, an invoice that separately states the following for the preceding month: (i) the Compensable Curtailed Energy during the preceding month; and (ii) the charge for such Compensable Curtailed Energy, as set forth in Attachment J (Energy Purchases by Company).
- (C) Payment Procedures for Compensable Curtailed Energy. By the last Business Day of the calendar month following the month during which the invoice for Compensable Curtailed Energy was submitted (i.e., by

the last Business Day of the second calendar month following the calendar month covered by the invoice in question), Company shall make payment on such invoice, or provide Seller an itemized statement of its objection to all or any portion of such invoice and pay any undisputed amount.

- (D) Late Payments. Notwithstanding all or any portion of such invoice in dispute, any payment for Compensable Curtailed Energy not made to Seller within the time period specified in Section 2.8(C) (Payment Procedures for Compensable Curtailed Energy), shall accrue interest at the average daily Base Rate plus two percent (2%) for the period until the outstanding interest and invoiced amounts (or amounts due to 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.

2.9 Adjustments to Invoices After Payment.

- (A) General. In the event adjustments are required to correct inaccuracies in an invoice after payment, the Party requesting adjustment shall include in the Party's request a recomputed invoice showing the principal amount of such adjustment (the "Adjustment Amount") together with the amount of interest on such Adjustment Amount from the date that such invoice was paid (or, if such invoice was not paid or not paid in a timely manner, the date such invoice was payable) until the date that such Adjustment Amount is paid or credited at the average daily Base Rate for the period. The Adjustment Amount, along with the allowable amount of interest, shall either be (i) paid to Seller or set-off by Company, as applicable, in the next invoice payment to Seller, or (ii) objected to by the Party responsible for such payment within thirty (30) Days following its receipt of such request.
- (B) Electric Energy. If the requested adjustment concerns payment for electric energy, and if the Party responsible for such payment objects to the request, then the Parties shall work together in good faith to resolve the objection. If the Parties are unable to resolve the objection, the matter shall be resolved pursuant to Article 28 (Dispute Resolution).

- (C) Compensable Curtailed Energy. If the requested adjustment concerns payment for Compensable Curtailed Energy, the provision of Section 5 (Disagreements Concerning Curtailed Energy) of Attachment U (Calculation and Reporting of Curtailed Energy) shall apply.
- (D) Limitations Period. All claims for adjustments shall be submitted to the other Party within three years of the end of the calendar month covered by the invoice on which the Adjustment Amount in question was invoiced or should have been invoiced. Claims for adjustments not submitted to the other Party by the end of such three-year period shall be deemed to have been waived.
- 2.10 Sales of Electric Energy By Company to Seller. Sales of electric energy by Company to 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 (if any) referred to in Attachment B (Facility Owned by Seller).
- 2.11 Determination of Initial Annual Contract Energy. The Seller, at its expense, shall retain an independent consultant to determine (i) the Initial Annual Contract Energy and (ii) the Annual Degradation Factor (stated as a percentage) for each Contract Year over a 27-year operational life. The consultant must provide its final written report setting forth the aforesaid determinations and the basis for such determinations prior to the Commercial Operations Date. Before providing its final report, the consultant shall provide a preliminary draft for review and comment by Seller and Company, and the Parties shall have not less than 30 Days to complete their reviews and provide their comments. Unless otherwise mutually agreed by the Parties, the independent consultant shall be selected from among the entities listed in Attachment V (Annual Contract Energy Consultant) to this Agreement.

ARTICLE 3
FACILITY OWNED AND/OR OPERATED BY SELLER

- 3.1 The Facility. Seller agrees to furnish, install, operate, and maintain the Facility in accordance with the provisions of this Agreement, including, without limitation, the operating procedures and performance standards as more fully described in Attachment B (Facility Owned by Seller) and Attachment C (Methods and Formulas for Measuring Performance

Standards). After the Commercial Operations Date, Seller agrees that no changes or additions to the Facility shall be made without prior written approval by Company and amendment to the Agreement unless such changes or additions to the Facility could not reasonably be expected to have a material effect on the assumptions used in performing the IRS.

- 3.2 Allowed Capacity. The net instantaneous MW output from Facility may not exceed the Allowed Capacity. Company may take appropriate action to limit the Actual Output pursuant to, but not limited to, Article 8 (Continuity of Service), Article 9 (Personnel and System Safety), Article 25 (Good Engineering and Operating Practices), Attachment B (Facility Owned by Seller), and Attachment J (Energy Purchases by Company) of this Agreement.
- 3.3 Point of Interconnection. The Point of Interconnection is shown on Attachment E (Single-Line Drawing), as provided in Section 1(a) (Single-Line Diagram, Relay List, Relay Settings and Trip Scheme) of Attachment B (Facility Owned by Seller). The Point of Interconnection will be at the voltage level of the Company System. If it is necessary to step up the voltage at which Seller's electric energy is delivered to Company System, the Point of Interconnection will be on the high voltage side of the step-up transformer.
- 3.4 Renewable Portfolio Standards.
- (A) Renewable Portfolio Standards. If, as a result of any RPS Amendment, the electric energy delivered from the Facility should no longer qualify as "renewable electrical energy," Seller shall, at the request of Company, develop and recommend to Company within a reasonable period of time following Company's 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) reasonable measures to cause the electric energy delivered from the Facility to come within such revised definition of "renewable electrical energy" ("Seller's RPS Modifications Proposal").
- (B) Seller's RPS Modifications Proposal. Upon receipt of Seller's RPS Modifications Proposal, Company will evaluate Seller's RPS Modifications Proposal. 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).

- (C) RPS Modifications Document. If, following Company's evaluation of Seller's RPS Modifications Proposal, Company desires to consider the implementation by Seller of the changes recommended in Seller's RPS Modifications Proposal, Company shall provide Seller with written notice to that effect, such notice to be issued to Seller within 180 Days of receipt of Seller's RPS Modifications Proposal, and Company and Seller shall proceed to negotiate in good faith a document setting forth the specific changes to the Agreement that are necessary to implement such RPS Modifications Proposal (the "RPS Modifications Document"). A decision by 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 RPS Modifications Proposal, including but not limited to the RPS Modifications and the RPS Pricing Impact. Any adjustment to the Contract Price pursuant to such RPS Modifications Document shall be limited to the RPS Pricing Impact. The time periods set forth in such RPS Modifications Document as to the effective date for the RPS Modifications shall be measured from the date the PUC Order with respect to such RPS Modifications becomes non-appealable as provided in Section 3.4(E) (PUC RPS Order).
- (D) Failure to Reach Agreement. If Company and Seller are unable to agree upon and execute a RPS Modifications Document within 180 Days of Company's written notice to Seller pursuant to Section 3.4(C) (RPS Modifications Document), 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 3.4(H) (Dispute) of this Agreement. Any decision of the Independent Evaluator, rendered as a result of such dispute shall include a form of a RPS Modifications Document as described in Section 3.4(C) (RPS Modifications Document).
- (E) PUC RPS Order. No RPS Modifications Document shall constitute an amendment to the Agreement unless and until a PUC RPS Order issued with respect to such

Document has become non-appealable. Once the condition of the preceding sentence has been satisfied, such RPS Modifications Document shall constitute an amendment to this Agreement. To be "non-appealable" under this Section 3.4(E) (PUC RPS Order), such PUC RPS Order shall 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 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).

- (F) Company's Rights. The rights granted to Company under Section 3.4(C) (RPS Modifications Document) and Section 3.4(D) (Failure to Reach Agreement) above are exclusive to Company. Seller shall not have a right to initiate negotiations of a RPS Modifications Document or to initiate dispute resolution under Section 3.4(H) (Dispute), as a result of a failure to agree upon and execute any RPS Modifications Document.
- (G) Limited Purpose. This Section 3.4 (Renewable Portfolio Standards) is intended to specifically address the implementation of reasonable measures to cause the electric energy delivered from the Facility to come within the revised definition of "renewable electrical energy" under any RPS Amendment and is not intended for either Party to provide a means for renegotiating any other terms of this Agreement. Revisions to this Agreement in accordance with the provisions of this Section 3.4 (Renewable Portfolio Standards) are not intended to increase Seller's risk of non-performance or default.
- (H) Dispute. If Company decides to declare a dispute as a result of the failure to reach agreement and execute a RPS Modifications Document pursuant to Section 3.4(D)

(Failure to Reach Agreement), it shall provide written notice to that effect to Seller. Within 20 Days of delivery of such notice Seller and Company shall agree upon an Independent Evaluator to resolve the dispute regarding a RPS Modifications 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 20-Day period, Company shall apply to the PUC for 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 shall appoint one of the persons or entities qualified to serve as an independent observer to be the Independent Evaluator; if not, the PUC shall appoint another qualified person or entity to serve as Independent Evaluator. In its application, Company shall ask the PUC to appoint an Independent Evaluator within 30 Days of the application.

- (1) Promptly upon appointment, the Independent Evaluator shall request the Parties to address the following matters within the next 15 Days:
 - (a) The reasonable measures required to be taken by Seller to cause the electric energy delivered from the Facility to come within such revised definition of "renewable electrical energy" under the RPS Amendment in question;
 - (b) How Seller would implement such measures;
 - (c) Reasonably expected net costs and/or lost revenues associated with such measures so the energy delivered by the Facility complies with such revised definition of "renewable electrical energy" under the RPS Amendment in question;
 - (d) The appropriate level, if any, of RPS Pricing Impact in light of the foregoing; and

- (e) Contractual consequences for non-performance that are commercially reasonable under the circumstances.
- (2) Within 90 Days of appointment, the Independent Evaluator shall render a decision unless the Independent Evaluator determines it needs to have additional time, not to exceed 45 Days, to render a decision.
- (3) 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.
- (4) The following standards shall be applied by the Independent Evaluator in rendering his or her decision: (i) if it is not technically or operationally feasible for Seller to implement reasonable measures required to cause the electric energy delivered from the Facility to come within such revised definition of "renewable electrical energy" under the RPS Amendment in question, the Independent Evaluator shall determine that the Agreement shall not be amended to comply with such changes in RPS (unless the Parties agree otherwise); (ii) if it is technically or operationally feasible for Seller to implement reasonable measures required to cause the electric energy delivered from the Facility to come within such revised definition of "renewable electrical energy" under RPS, the Independent Evaluator shall incorporate such required changes into a RPS Modifications Document including (aa) Seller's RPS Modifications, (bb) pricing terms that incorporate the RPS Pricing Impact, and (cc) contract terms and conditions that are commercially reasonable under the circumstances, especially with respect to the consequences of non-performance by Seller as to the

RPS Modifications. In addition to the RPS Modifications 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.

- (5) The fees and costs of the Independent Evaluator shall be paid by Company up to the first \$30,000 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 \$30,000, 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.

ARTICLE 4
COMPANY-OWNED INTERCONNECTION FACILITIES

The terms and conditions related to the Company-Owned Interconnection Facilities are set forth in Attachment G (Company-Owned Interconnection Facilities) of this Agreement. In accordance with Section 8 (Transfer of Ownership/Title) of Attachment G (Company-Owned Interconnection Facilities), on the Transfer Date, Seller shall convey title to the Company-Owned Interconnection Facilities that were designed and constructed by or on behalf of Seller by executing a Bill of Sale and Assignment document substantially in the form set forth in Attachment H (Form of Bill of Sale and Assignment). In addition, in accordance with Section 8 (Transfer of Ownership/Title) of Attachment G (Company-Owned Interconnection Facilities) on the Transfer Date, Seller shall deliver to Company any and all executed documents required to assign all leases with respect to the Company-Owned Interconnection Facilities to Company, which documents shall be substantially in the form set forth in Attachment I (Form of Assignment of Lease and Assumption).

ARTICLE 5
SCHEDULING

- 5.1 Seller's Quarterly Maintenance Schedule: By each March 1st, June 1st, September 1st and December 1st (as applicable, subsequent to the Commercial Operations Date), Seller shall provide to Company in writing a projection of maintenance

outages for the next calendar quarter. During any such maintenance outage, Seller will provide an update each Day to Company's operating personnel regarding the status of such maintenance.

- 5.2 Seller's Annual Maintenance Schedule: In addition, Seller shall submit to Company a written schedule of maintenance outages which will reduce the capacity of the Facility by five (5) MW or more for the next two-year period, beginning with January of the following year, in writing to Company each year by June 30. The schedule shall state 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. Company shall review the maintenance schedule for the two-year period and inform Seller in writing no later than December 1 of the same year of Company's concurrence or requested revisions; provided, however, that Seller shall not be required to agree to any proposed revisions that, in Seller's judgment, will void or violate any warranties of equipment that is part of, or used in connection with, the Facility or violate any long-term service agreement with respect to such equipment, in which case Seller shall promptly notify Company thereof, and Seller and Company shall endeavor to reach a mutually satisfactory resolution of the matter in question. With respect to such agreed upon revisions, Seller shall revise its schedule for timing and duration of scheduled shutdowns and scheduled reductions of output of the Facility to accommodate Company's revisions, unless such revisions would not be consistent with Good Engineering and Operating Practices, and make all commercially reasonable efforts, consistent with Good Engineering and Operating Practices, to accommodate any subsequent changes in such schedule reasonably requested by Company.
- 5.3 Seller's Notification Obligations. 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 electric energy to Company, Seller shall notify Company as soon as practicable, and in any event, no later than the daily updates required by Section 5.1 (Seller's Quarterly Maintenance Schedule). This requirement to notify shall include, but not be limited to, notice to Company of Seller's intention to start up or shut down any solar photovoltaic generator plus inverter unit. Any unit start-up or shut-down shall be coordinated with Company in advance to the extent practicable to allow a reasonable amount of

time for Company to make generation adjustments required by the additional energy resulting from a unit start-up or the loss of energy from a unit shut-down.

- 5.4 Scheduling of Actual Output. To the extent that scheduling of Actual Output is required now or in the future, (i) Seller will reasonably cooperate with 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.
- 5.5 Regular Meetings to Discuss Maintenance. Company and Seller shall meet regularly to share information on planned outages and coordinate, to the extent possible, maintenance outages. Company shall have no obligation to provide Seller with a maintenance schedule and any maintenance schedule provided by Company at such meetings shall be non-binding. Company and Seller shall review their respective schedules for timing and duration of the scheduled shutdowns and scheduled reductions of output of the Facility to accommodate, to the extent practicable, their respective needs, subject to maintaining consistency with Good Engineering and Operating Practices, and Company and Seller shall make all reasonable efforts, consistent with Good Engineering and Operating Practices, to accommodate any subsequent changes in any maintenance schedules reasonably requested by either Party.

ARTICLE 6
FORECASTING

- 6.1 Resource Data for Company Forecasts. Seller shall provide to Company the data and site description information for the Facility required by Company in order for Company to produce a real-time forecast for operations as well as a Day-ahead forecast and hourly forecasts for all variable generation facilities on the Company System. See Attachment B (Facility Owned by Seller) for details of the data parameters requirements.
- 6.2 Facility Resource Monitoring Equipment. Seller shall install and maintain appropriate equipment for the purposes of providing Company with the data required under Section 6.1 (Resource Data for Company). Such monitoring equipment shall include field measurement device components to measure renewable resources (e.g. wind speed and direction, solar irradiance, temperature, humidity) and record, store and transfer such data in real-time. Accuracy of each field

measurement device component will be specified in data parameter requirements found in Section 8 (Data and Forecasting) of Attachment B (Facility Owned by Seller).

6.3 Calibrations.

- (A) Documentation Requirement. Seller shall provide to Company documentation of calibration of the monitoring equipment and schedule and evidence of performance of routine calibration of each field measurement device component per manufacturer specifications.
- (B) Corrective Measures. In the event a pattern of material inconsistencies in the data stream provided by the monitoring equipment is found, Seller shall perform, at Seller's expense, such corrective measures as Company may reasonably request, such as the recalibration of all monitoring equipment.

6.4 Repairs. Seller shall repair any and all monitoring equipment failures within 15 Days of such failure or within such other time as agreed to by the Parties.

6.5 Seller Day-Ahead Forecasts of Output.

- (A) Forecasts. To support validation of the Company forecasts referenced in Section 6.1 (Resource Data for Company Forecasts), each Day during the Term commencing on the Commercial Operations Date, Seller shall submit to Company Seller's Day-ahead hourly forecasts of the Facility's output produced by a commercially available forecasting service or by the Seller's documented methodology for providing a forecast for the Facility's output (i.e. climatology, persistence forecasting) for the next 24 hour period. Hourly Day-ahead forecasts shall be submitted to Company by 1800 Hawaii Standard Time on each Day immediately preceding a Day on which electric energy from the Facility is to be delivered. Seller shall provide Company with an hourly forecast of deliveries for each hour of the next Day. Seller shall update such forecast and provide unit availability updates any time information becomes available indicating a change in the forecast of actual production from the Facility. The forecasts called for by this Agreement shall be substantially in the form reasonably requested by Company.

(B) Accuracy of Forecasts. Company acknowledges that the Seller's Day-ahead forecasts are based on forecast estimates and not guarantees. Such limitation notwithstanding, Seller shall exercise commercially reasonable efforts to ensure the accuracy of the Day-ahead forecasts required hereunder for validation purposes and to support Company's forecasts. This includes a detailed description of the methodology used by Seller for forecasting. For example, Seller shall prepare such forecasts and updates by utilizing a solar power forecast or other service that is (i) commercially available or proprietary to Seller, (ii) comparable in accuracy to models or services commonly used in the solar energy industry and that reflect equipment availability, and (iii) is satisfactory to Company in the exercise of its reasonable discretion.

6.6 Seller's Historical Annual Data Report. No later than January 15th of each Calendar Year during the Term following the Commercial Operations Date, Seller shall provide Company with a report setting forth the historical hourly energy (MWh) and power (MW) production data ("Historical Annual Data") of the Facility for the immediately preceding three-year period. The report prepared by Seller shall also identify any uncertainties based on historical operating experience and note any maintenance periods or long term outages of the Facility by time, date, and year during such three-year period.

6.7 Reports, Studies and Assessment. Promptly following the Execution Date, Seller shall deliver to Company any final reports, studies or assessments of the electric energy producing potential of the Site prepared for the benefit of Seller by an independent engineer prior to the Execution Date, to the extent such reports, studies, or assessments do not contain confidential information that is proprietary to Seller, in which case Seller may redact such proprietary information prior to providing the document to Company. Thereafter throughout the Term, Seller shall deliver to Company, promptly upon Seller's receipt of same, any final reports, studies or assessments prepared for the benefit of Seller by an independent engineer of (i) the electric energy producing potential of the Site or (ii) the Facility, to the extent such reports, studies, or assessments do not contain confidential information that is proprietary to Seller, in which case Seller may redact such proprietary information prior to providing the document to Company.

ARTICLE 7
SELLER PAYMENTS

Seller shall pay to Company (i) all amounts pursuant to Attachment G (Company-Owned Interconnection Facilities), (ii) all amounts pursuant to Section 10.1 (Meters) and Section 10.2 (Meter Testing), (iii) a monthly metering charge of \$25.00 per month, which is in addition to any charges due Company pursuant to the applicable rate schedule pursuant to Section 2.10 (Sales of Electric Energy By Company to Seller) of this Agreement, and (iv) such other costs to be incurred by Company and reimbursed by Seller as set forth in this Agreement.

ARTICLE 8
CONTINUITY OF SERVICE

- 8.1 General. Company may require Seller to temporarily curtail, interrupt or reduce deliveries of electric energy when necessary in order for 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 Company System; or if Company determines that such curtailment, interruption or reduction is necessary because of an Emergency, Forced Outage, operating conditions on the Company System; or the inability to accept deliveries of electric energy due to Excess Energy Conditions; or if either the Facility does not operate in compliance with Good Engineering and Operating Practices or acceptance of electric energy from Seller by Company would require Company to operate the Company 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 System Operator determines, at his or her sole discretion using Good Engineering and Operating Practices, could place in jeopardy the reliability of the Company System. In the event that Company initiates a Curtailment Event pursuant to this Section 8.1 (General), Company shall not be obligated to accept or pay for any electric energy from Seller except for such electric energy that Company notifies Seller that it is able to take during the duration of a Curtailment Event. Nothing in this Section 8.1 (General) limits Company's obligation to pay for Compensable Curtailed Energy as set forth in Section 2.6 (Payment for Compensable Curtailed Energy).

- 8.2 Negative Avoided Cost. Company shall not be required to purchase electric energy during any period during which, due to operational circumstances, purchases from Seller will result in costs greater than those which Company would incur if it did not make those purchases, but instead generated an equivalent amount of electric energy itself. Company shall provide Seller with at least twenty-four (24) hours advance oral or written notice of the occurrence any such period to advise Seller to cease the delivery of electric energy to Company. Company and 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 Seller. If Company fails to provide such notice, it will pay the same rate for such purchase of electric energy as would be required had the period not occurred. The Company shall not curtail pursuant to this Section 8.2 (Negative Avoided Cost) solely as a consequence of Company's filed avoided energy cost data being lower than the applicable price per MWh paid to Seller under this Agreement. Company and Seller acknowledge that this Section 8.2 (Negative Avoided Cost) 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.
- 8.3 No Curtailment for Economic Dispatch. This Article 8 (Continuity of Service) of this Agreement does not permit Company to require Seller to curtail, interrupt or reduce deliveries of electric energy based on Company's economic dispatch (for example, as a consequence of Company's filed avoided energy cost data being lower than the applicable price per MWh paid to Seller under this Agreement, or to make purchases of less expensive electric energy from a Qualifying Facility).
- 8.4 Reasonable Steps. Company shall take all reasonable steps (such as reducing the output of Base Load Units, including its own Base Load Units, during light loading conditions, taking into consideration factors such as the need to maintain the reliability and stability of the Company System under changing system conditions and configurations, the need for downward regulating reserves, the terms and conditions of power purchase agreements for firm capacity Base Load Units or scheduled electric 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 Attachment B (Facility Owned by Seller).

- 8.5 Monthly Curtailment Report. Commencing with the month during which the Commercial Operations Date is achieved, and for each calendar month thereafter during the Term, Seller shall calculate Curtailed Energy and prepare and provide to Company a Curtailment Report by the tenth (10th) Business Day of the following month in accordance with Attachment U (Reporting and Calculation of Curtailed Energy) of this Agreement. The rights and obligations of the Parties with respect to each Curtailment Report and any disagreements arising out of any Curtailment Report are set forth in Section 2 (Curtailment Report) and Section 5 (Disagreements Concerning Curtailed Energy) of Attachment U (Calculation and Reporting of Curtailed Energy) to this Agreement.

ARTICLE 9
PERSONNEL AND SYSTEM SAFETY

- 9.1 Notwithstanding any other provisions of this Agreement, if at any time Company reasonably determines that the Facility may endanger Company's personnel, and/or the continued operation of the Facility may endanger the integrity of the Company System or have an adverse effect on Company's other customers' electric service, Company shall have the right to curtail or disconnect the Facility from the Company System, as determined in the sole discretion of the Company System Operator. The Facility shall remain curtailed or disconnected, as the case may be, until such time as Company is satisfied that the condition(s) referred to above have been corrected, and Company shall not be obligated to accept or pay for any electric energy from Seller except for such electric energy as is accepted by Company from Seller during such period. If Company curtails or disconnects the Facility from the Company System for personnel or system safety reasons, it shall as soon as practicable notify Seller by telephone, and thereafter confirm in writing, the reasons for the curtailment or disconnection. Nothing in this Section 9.1 limits Company's obligations to pay for Compensable Curtailed Energy as set forth in Section 2.6 (Payment for Compensable Curtailed Energy).

ARTICLE 10
METERING

- 10.1 Meters. Company shall purchase, own, install and maintain the Revenue Metering Package suitable for measuring the

export of electric energy from the Facility sold to Company in kilowatts and kilowatt-hours on a time-of-day basis and of reactive power flow in kilovars and true root mean square kilovar-hours. The metering point shall be as close as possible to the Point of Interconnection as allowed by Company. Seller shall make available a mutually agreeable location for the Revenue Metering Package. Seller shall install, own and maintain the infrastructure and other related equipment associated with the Revenue Metering Package, including but not limited to all enclosures (meter cabinets, meter pedestals, meter sockets, pull boxes, and junction boxes, along with their grounding/bonding connections), CT/PT mounting structures, conduits and ductlines, enclosure support structures, ground buses, pads, test switches, terminal blocks, isolation relays, telephone surge suppressors, and analog phone lines (one per meter), subject to Company's review and approval, as further described in Section 1(e) (Other Equipment) of Attachment B (Facility Owned by Seller). Company shall test such revenue meters prior to installation and shall test such revenue meters every fifth year. Seller shall reimburse Company for all reasonably incurred costs for the procurement, installation, maintenance (including maintenance replacements) and testing work associated with the Revenue Metering Package.

- 10.2 Meter Testing. Company shall provide at least twenty-four (24) hours' notice to Seller prior to any test it may perform on the revenue meters or metering equipment. Seller shall have the right to have a representative present during each such test. Seller may request, and Company shall perform, if requested, tests in addition to the every-fifth-year test and Seller shall pay the cost of such tests. Company may, in its sole discretion, perform tests in addition to the fifth year test and Company shall pay the cost of such tests. If any of the revenue meters or metering equipment is found to be inaccurate at any time, as determined by testing in accordance with this Section 10.2 (Meter Testing), 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 10.3 (Corrections).
- 10.3 Corrections. If any test of revenue meters or metering equipment conducted by Company indicates that the revenue meter readings are in error by one percent (1%) or more, the revenue meters or meter readings shall be corrected as

follows: (i) determine the error by testing the revenue meter at approximately ten percent (10%) of the rated current (test amperes) specified for such revenue meter; (ii) determine the error by testing the revenue meter at approximately one hundred percent (100%) of the rated current (test amperes) specified for the revenue meter; (iii) the average meter error shall then be computed as the sum of (aa) one-fifth (1/5) of the error determined in the foregoing clause "(i)" and (bb) four-fifths (4/5) of the error determined in the foregoing clause "(ii)". The average meter error shall be used to adjust the invoices in accordance with Section 2.9 (Adjustment to Invoices After Payment) for the amount of electric energy supplied to Company for the previous six (6) months from Facility, unless records of 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.

ARTICLE 11
GOVERNMENT APPROVALS,
LAND RIGHTS AND COMPLIANCE WITH LAWS

- 11.1 Governmental Approvals for Facility. Seller shall obtain, at its expense, any and all Governmental Approvals required for the construction, ownership, operation and maintenance of the Facility and the interconnection of the Facility to the Company System.
- 11.2 Land Rights for Facility. Seller shall obtain, at its expense, any and all Land Rights required for the construction, ownership, operation and maintenance of the Facility and the interconnection of the Facility to the Company System. Seller's affiliate currently has an executed purchase agreement to obtain the Land Rights. Seller shall provide to Company, no later than twenty (20) Days following the Execution Date, copies of the documents, recorded, if required by Company (including but not limited to any agreements with landowners) evidencing the completion of such purchase and the transfer of such Land Rights from Seller's affiliate to Seller (i) establishing the right of Seller to construct, own, operate and maintain the Facility on the Site and (ii) any other Land Rights required for such construction, ownership, operation and maintenance.
- 11.3 Company-Owned Interconnection Facilities. Seller shall, prior to commencement of construction of Company-Owned Interconnection Facilities (whether to be built by Seller or by Company), provide the necessary Governmental Approvals

and Land Rights for the interconnection of the Facility to the Company System, including the construction, ownership, operation and maintenance of Company-Owned Interconnection Facilities.

- 11.4 Compliance With Laws. Seller shall install, operate and maintain the Facility safely and in compliance with all applicable Laws.

ARTICLE 12

TERM OF AGREEMENT AND COMPANY'S
OPTION TO PURCHASE AT END OF TERM

- 12.1 Term. Subject to Section 12.2 (Effectiveness of Obligations) of this Agreement, the initial term of this Agreement shall commence upon the Execution Date of this Agreement and shall remain in effect for twenty-two (22) Contract Years following the Commercial Operations Date (the "Initial Term") unless terminated sooner as provided in this Agreement. Upon expiration of the Initial Term, or (if Company has exercised its option under Section 12.10 (Company's Option to Extend Term for Banked Curtailed Energy)) upon the expiration of the Banked Curtailed Energy Term), this Agreement shall automatically continue in effect thereafter until terminated by either Party as provided for herein (the "Extended Term"). Following the end of the Initial Term, or (if Company has exercised its option under Section 12.10 (Company's Option to Extend Term for Banked Curtailed Energy)) the Banked Curtailed Energy Term), either Company or Seller may terminate this Agreement at any time upon not less than ninety (90) Days' advance written notice to the other Party. The Contract Price in effect at the end of the Initial Term shall be the Contract Price during the Extended Term. The Annual Contract Energy for the last Contract Year of the Initial Term, or (if Company has exercised its option under Section 12.10 (Company's Option to Extend Term for Banked Curtailed Energy)) for the last Contract Year of the Banked Curtailed Energy Term, shall be the Annual Contract Energy for the Extended Term.
- 12.2 Effectiveness of Obligations. Except where obligations of the Parties are explicitly stated as being effective before the Effective Date, only Article 3 (Facility Owned and/or Operated by Seller), Article 12 (Term of Agreement and Company's Option to Purchase at End of Term), Article 14 (Credit Assurance and Security) as it relates to Development Period Security, Article 17 (Indemnification), Article 19 (Transfers, Assignments, and Facility Debt), Article 22

(Warranties and Representations), Article 24 (Financial Compliance), Article 28 (Dispute Resolution), Article 29 (Miscellaneous), Section 3 (Seller Payment to Company for Company-Owned Interconnection Facilities and Review of Facility) of Attachment G (Company-Owned Interconnection Facilities) and the Definitions of this Agreement shall become effective on the Execution Date. All other portions of this Agreement shall become effective on the Effective Date.

12.3 PUC Approval. This Agreement is subject to approval by the PUC and the Parties' respective obligations hereunder are conditioned upon receipt of such approval, except as specifically provided otherwise herein. Upon the Execution Date of this Agreement, the Parties shall use good faith efforts to obtain, as soon as practicable, a PUC Approval Order that satisfies the requirements of Section 29.20(A) (PUC Approval Order). Company shall submit to the PUC an application for a satisfactory PUC Approval Order but does not extend any assurances that a PUC Approval will ultimately be obtained. Seller will provide reasonable cooperation to expedite obtaining a PUC Approval Order including timely providing information requested by the PUC and parties to the PUC proceeding in which approval is being sought. Seller understands that lack of cooperation (on the part of Seller) may result in Company's inability to file an application with the PUC and/or a failure to receive a PUC Approval Order. The Parties agree that neither Party has control over whether or not a PUC Approval Order will be issued and each Party hereby assumes any and all risks arising from, or relating in any way to, the inability to obtain a satisfactory PUC Approval Order and hereby releases the other Party from any and all claims relating thereto.

12.4 [RESERVED]

12.5 Prior to Effective Date. Company may, by written notice delivered prior to the Effective Date, declare the Agreement null and void if any one or more of the following conditions applies:

- (A) Seller makes material changes in the type of, performance specifications of, or performance specifications of, equipment for the Facility such that
 - (i) the then-current IRS no longer accurately describes
 - (a) the system requirements and equipment requirements to interconnect the Facility with the Company System, or
 - (b) the Performance Standards for the Facility, or

- (ii) project schedule for interconnection of the Facility is materially and adversely affected.
- (B) Seller is in breach (i) the provisions of Section 22.2(B) requiring Seller to have obtained by the Execution Date all Land Rights necessary for the construction, ownership, operation and maintenance of the Facility for the Initial Term or (ii) the provisions of Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of Attachment G (Company-Owned Interconnection Facilities) requiring the payment by Seller to Company of the amount specified in said Section 3(b)(ii) within the time period provided in said Section 3(b)(ii).
- (C) Seller, subsequent to making the payment to Company required under Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of Attachment G (Company-Owned Interconnection Facilities), requests in writing that Company stop or otherwise delay the performance of the work for which Company received such payment.
- (D) Seller has notified Company in writing that it desires to modify (i) the Agreement and/or (ii) the Facility as described in the Agreement and the IRS.

12.6 Time Periods for PUC Submittal Date and PUC Approval.

- (A) Time Period for PUC Submittal Date. If the PUC Submittal Date has not occurred by December 4, 2014, or such longer period as Company and Seller may agree to by a subsequent written agreement, Seller may, by written notice delivered to Company within 5 Days following such date, declare this Agreement null and void; provided, however, that Company shall not be required to submit to the PUC an application for a satisfactory PUC Approval Order if Seller fails to provide in a timely manner information reasonably requested by Company to support such application.
- (B) Time Period for PUC Approval.
- (1) If the satisfactory PUC Approval Order is not obtained by May 4, 2015, or within such longer period as Company and Seller may agree to by a written agreement, Seller may, by written notice delivered within ninety (90) Days of such date,

declare this Agreement null and void. In the event the PUC Approval Order is obtained by May 4, 2015 but the Order is appealed, and a Non-appealable PUC Approval Order is not obtained by June 4, 2015, or within such longer period as Company and Seller may agree to by a subsequent written agreement, Seller may, by written notice delivered within ninety (90) Days of such date, declare this Agreement null and void.

- (2) If the satisfactory PUC Approval Order is not obtained within twelve (12) months of the PUC Submittal Date, or within such longer period as Company and Seller may agree to by a written agreement, Company or Seller may, by written notice delivered within one hundred and eighty (180) 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 Company and Seller may agree to by a subsequent written agreement, Company or Seller may, by written notice delivered within 90 Days of such date, declare this Agreement null and void.
- (C) Subject to Seller promptly providing the information that is reasonably required or requested to support PUC approval of the Interconnection Requirements Amendment, Company shall submit the Interconnection Requirements Amendment to the PUC for approval by December 4, 2014.

- 12.7 Agreement Null and Void. If the Agreement is declared null and void pursuant to Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller), the Parties hereto shall thereafter be free of all obligations hereunder except as set forth in this Section 12.7 and Section 14.3 (Return of Development Security), and shall pursue no further remedies against one another; provided, however, that Seller shall pay Company the actual costs and cost obligations incurred by Company as of the date the Agreement is declared null and void for Company-

Owned Interconnection Facilities and any reasonable costs incurred thereafter and Company shall refund to Seller any amounts advanced by Seller in excess of such costs. A declaration that this Agreement is null and void pursuant to Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller), shall not affect the following provisions, which shall remain in full force and effect: Section 12.2 (Effectiveness of Obligations), this Section 12.7 (Agreement Null and Void), Article 28 (Dispute Resolution), Section 29.3 (Notices), Section 29.8 (Governing Law, Jurisdiction and Venue), Section 29.14 (Settlement of Disputes), Section 29.19 (Computation of Time), Section 29.22 (No Third Party Beneficiaries) Section 29.23 (Hawaii General Excise Tax), and Section 7 (Land Restoration) of Attachment G.

- 12.8 Termination Rights. Notwithstanding any of the foregoing, Company or Seller may terminate the Agreement at any time upon the occurrence of any condition described in Article 15 (Events of Default).
- 12.9 Company's Right to Purchase Facility. Company shall have the right to purchase the Facility as provided in Attachment P (Sale of Facility by Seller) to this Agreement.
- 12.10 Company's Option to Extend Term for Banked Curtailed Energy.

(A) Banked Curtailed Energy and Term Extension. Compensable Curtailed Energy for which Company has paid Seller pursuant to Section 2.8 (Invoices for Compensable Curtailed Energy) shall be "banked" ("Banked Curtailed Energy") and Company shall have the option to extend the Term of this Agreement for a period determined on the basis of the amount of Banked Curtailed Energy, as set forth in this Section 12.10 (Seller's Option to Extend Term for Banked Curtailed Energy).

(B) Company's Option to Extend Term.

(1) If there is Banked Curtailed Energy following the close of the 21st Contract Year, Company shall have the option to extend the Term of this Agreement for the period (the "Banked Curtailed Energy Term") commencing on the Day following the last Day of the Initial Term and ending on the first to

occur of (i) the last Day of the calendar month during which the last Banked Curtailed Energy is delivered to Company or (ii) the fifth anniversary of the end of the Initial Term.

- (2) The price for the electric energy sold by Seller during the Banked Curtailed Energy Term shall be as set forth in Section 1 (b) (Banked Curtailed Energy Term) of Attachment J (Energy Purchases by Company) .
 - (3) In order to exercise its option to extend the Term of this Agreement by the Banked Curtailed Energy Term, Company must provide Seller with written notice to that effect no later than 180 Days prior to the end of the Initial Term. Such notice of extension will be irrevocable once given.
- (C) Seller's Option to "Opt Out" of Banked Curtailed Energy Term.

Upon issuance of Company's notice to extend the Term of this Agreement by the Banked Curtailed Energy Term, Seller shall have the option to "opt out" of the Banked Curtailed Energy Term by (i) transferring to Company, for the duration of the Banked Curtailed Energy Term, the use of the Facility and all Land Rights and other contract rights necessary for the operation of the Facility during the Banked Curtailed Energy Term and (ii) forfeit to Company the Operating Period Security. In order to exercise this "opt out," Seller must provide company with written notice to that effect within 30 Days of the issuance of Company's notice extending the Term of this Agreement as aforesaid. If Seller issues the "opt out" notice within the aforesaid 30-Day period, Company shall have the right, commencing on the Day following the expiration of the Initial Term, to operate the Facility with no payment to Seller for the duration of the Banked Curtailed Energy Term, and Seller shall take all reasonable steps to facilitate Company's exercise of such right. Following the end of the Banked Curtailed Energy Term, Company shall relinquish control of the Facility to Seller and shall quit claim to Seller Company's interest (if any) in all Land Rights and contract rights necessary to the operation of the Facility.

(D) Company's Purchase Option During Banked Curtailed Energy Term.

If Seller does not exercise its option to "opt out" of the Banked Curtailed Energy Term under Section 12.1(C) (Seller's Option to "Opt Out" of Banked Curtailed Energy Term), and if for any rolling 12-month period during the Banked Curtailed Energy Term, the Performance Ratio falls below 85% of the Performance Ratio for the last year of the Initial Term (which shall be calculated by taking the average of the monthly Performance Ratios for the last year of the Initial Term), Company shall have the option to purchase the Facility from Seller as set forth in Section 4 (Company's Option to Purchase Pursuant to Section 12.10 (D)) of Attachment P (Sale of Facility of Seller), and Seller shall if requested by Company, take commercially reasonable steps to effectuate a sale of the Facility to Company as provided in said Section 7.

ARTICLE 13
CONSTRUCTION MILESTONES INCLUDING
THE GUARANTEED SUBSTANTIAL COMMITMENT DATES
AND THE GUARANTEED COMMERCIAL OPERATIONS DATE

- 13.1 Time is of the Essence. Time is of the essence of this Agreement, and the ability of Seller to achieve the Construction Milestones and of Company to achieve the Company Milestones is critically important.
- 13.2 Failure to Meet Certain Reporting Milestones. If Seller does not meet any of the Reporting Milestones, in each case as set forth in Attachment L (Reporting Milestones), by more than ninety (90) Days, Seller shall submit to Company, within ten (10) Business Days after such 90-Day period, a remedial action plan which shall provide a detailed description of Seller's course of action and plan to achieve (i) the missed Reporting Milestone date and (ii) 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. The failure of Seller to meet the deadline for a Reporting Milestone, in and of itself, shall not give rise to the payment of any damages to Company. The preceding sentence does not limit Seller's liability for Daily Delay Damages (if applicable) if the Reporting Milestone in question is also a Guaranteed Project Milestone.

13.3 Guaranteed Project Milestone Dates. Seller shall achieve each Guaranteed Project Milestone Date, subject (to the extent applicable) to the following grace periods:

- (A) if the failure to achieve Commercial Operations by the Guaranteed Commercial Operations Date is the result of the PUC Approval Order Date occurring more than one hundred eighty (180) Days after the Execution Date, Seller shall be entitled to a grace period following the Guaranteed Commercial Operation Date equal to the lesser of (i) the number of Days that elapse between the end of the aforesaid 180-Day period and the PUC Approval Order Date, or (ii) the number of Days following the Guaranteed Commercial Operations Date that are reasonably necessary for Seller, using reasonable diligence to achieve the Commercial Operations Date in the shortest period of time; or
- (B) if the failure to achieve a Guaranteed Project Milestone by the applicable Guaranteed Project Milestone Date is the result of Force Majeure (which, for purposes of this Section 13.3(B) excludes any delay in obtaining the PUC Approval Order because that contingency is addressed in Section 13.3(A) above), and if and so long as the conditions set forth in Section 21.4 (Satisfaction of Certain Conditions) are satisfied, Seller shall be entitled to a grace period following such Guaranteed Project Milestone Date or Guaranteed Substantial Commitment Date (as applicable) equal to the lesser of three hundred sixty-five (365) Days or the duration of the Force Majeure.
- (C) if the failure to achieve a Guaranteed Project Milestone by the applicable Guaranteed Project Milestone Date or Substantial Commitment Milestone by the Guaranteed Substantial Commitment Date is the result of any failure by Company in the timely performance of its obligations under this Agreement, Seller shall be entitled to a grace period following such Guaranteed Project Milestone Date or Guaranteed Substantial Commitment Date (as applicable) equal to the duration of the period of delay directly caused by such failure in Company's timely performance. Such grace period on the terms described above shall be Seller's sole remedy for any such failure by Company. For purposes of this Section 13.3(C), Company's performance will be deemed to be "timely" if it is accomplished within the time period specified in this

Agreement with respect to such performance or, if no time period is specified, within a reasonable period of time. If the performance in question is Company's review of plans, the determination of what is a "reasonable period of time" will take into account Company's past practices in reviewing and commenting on plans for similar facilities.

13.4 Damages and Termination.

- (A) Daily Delay Damages. If the Commercial Operations Date has not been achieved by the later of the Guaranteed Commercial Operations Date or the expiration of any applicable grace period provided in Section 13.3 (Guaranteed Project Milestone Dates), Company shall collect and Seller shall pay liquidated damages in the amount of \$12,750 for each Day ("Daily Delay Damages") following the Guaranteed Commercial Operations Date or (if applicable) the expiration of such grace period that Seller fails to achieve the Commercial Operations Date, provided that the number of Days for which Company shall collect and Seller shall pay Daily Delay Damages shall not exceed one hundred eighty (180) Days.
- (B) Termination and Termination Damages for Failure to Achieve Guaranteed Commercial Operations Date. If, upon the expiration of the aforesaid 180-Day period (the "COD Delay LD Period"), Seller has not achieved the Commercial Operations Date, Company shall have the right, notwithstanding any other provision of this Agreement to the contrary, to terminate this Agreement with immediate effect by issuing a written termination notice to Seller designating the Day such termination is to be effective. The effective date of such termination shall be not later than the date that is thirty (30) Days after such notice is deemed to be received by Seller, and not earlier than the first to occur of the Day such notice is deemed to be received by Seller or the Day following the expiration of the COD Delay LD Period. Without limiting the generality of the preceding sentence, the earliest Day upon which a termination of this Agreement can be effective as a result of a failure to achieve Commercial Operations by the Guaranteed Commercial Operations Date would be the Day following expiration of the COD Delay LD Period. If the Agreement is terminated by Company pursuant to this Section 13.4 (Damages and Termination), Company shall have the right to collect liquidated damages

("Termination Damages"), which shall be calculated in accordance with Article 16 (Damages in the Event of Termination By Company) of this Agreement.

- (C) Termination and Termination Damages for Failure to Achieve a Guaranteed Substantial Commitment Date. If Seller has not achieved a Substantial Commitment Milestone by the applicable Guaranteed Substantial Commitment Date, as extended by any grace period that may be applicable under Section 3.3 (Guaranteed Project Milestone Dates), Company shall have the right, notwithstanding any other provision of this Agreement to the contrary, to terminate this Agreement with immediate effect by issuing a written termination notice to Seller designating the Day such termination is to be effective. For purposes of this Section 3.4(C) (Termination and Termination Damages for Failure to Achieve a Guaranteed Substantial Commitment Date), a written request by Seller that the Company stop or otherwise delay the performance of engineering design, procurement and construction work that is the responsibility of Company under Section 3 (Seller Payment to Company for Company-Owned Interconnection Facilities and Review of Facility) of Attachment G (Company-Owned Interconnection Facilities) shall be deemed a failure for Seller to achieve a Substantial Commitment Date. The effective date of any termination pursuant to this Section 13.4(C) (Termination and Termination Damages for Failure to Achieve a Guaranteed Substantial Commitment Date) shall be not later than the date that is thirty (30) Days after the aforementioned termination notice is deemed to be received by Seller, and not earlier than the first to occur of the Day such notice is deemed to be received by Seller. If the Agreement is terminated by Company pursuant to this Section 13.4 (Damages and Termination), Company shall have the right to collect liquidated damages ("Termination Damages"), which shall be calculated in accordance with Article 16 (Damages in the Event of Termination By Company) of this Agreement.

- 13.5 Payment of Daily Delay Damages. Company shall draw upon the Development Period Security on a monthly basis for payment of the total Daily Delay Damages incurred by Seller during the preceding calendar month. If the Development Period Security is at any time insufficient to pay the amount of

the draw to which Company is then entitled, Seller shall pay any such deficiency to Company promptly upon demand.

- 13.6 Liquidated Damages Appropriate. Seller's inability to achieve Commercial Operations by the Guaranteed Commercial Operations Date may cause Company to not meet applicable RPS requirements and require Company to devote substantial additional resources for administration and oversight activities. As such, Company may incur financial consequences for failure to meet such requirements. Consequently, each Party agrees and acknowledges that (i) the damages that Company would incur due to delay in achieving Commercial Operations by the Guaranteed Commercial Operations Date (subject to the grace periods provided in Section 13.3 (Guaranteed Project Milestone Dates)) would be difficult or impossible to calculate with certainty, (ii) the Daily Delay Damages set forth in Section 13.4 (Damages and Termination) are an appropriate approximation of such damages and (iii) the Daily Delay Damages are the sole and exclusive remedies for Seller's failure to achieve Commercial Operations by the Guaranteed Commercial Operations Date.
- 13.7 Monthly Progress Reports. Commencing upon the Execution Date of this Agreement, Seller shall submit to Company, on the first Day of each calendar month until the Commercial Operations Date is achieved, progress reports in a form set forth on Attachment S (Form of Monthly Progress Report) (the "Monthly Progress Report"). These progress reports shall notify Company of the current status of each Construction Milestone. Seller shall include in such report a list of all letters, notices, applications, filings and Governmental Approvals sent to or received from any Governmental Authority and shall provide any such documents as may be reasonably requested by Company. In addition, Seller shall advise 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 Company with any requested documentation to support the achievement of Construction Milestones within ten (10) Business Days of receipt of such request from Company. Upon the occurrence of a Force Majeure, Seller shall also comply with the requirements of Section 21.4 (Satisfaction of Certain Conditions) to the extent such requirements provide for communications to Company beyond those required under this Section 13.7 (Monthly Progress Reports).

13.8 Company Milestones. Company shall achieve each of the Company Milestones by the date set forth for such Company Milestones in Attachment K-1 (Company Milestones and Seller's Conditions Precedent) of this Agreement (each such date, a "Company Milestone Date"); provided, however in the event Seller does not complete a Seller's Condition Precedent on or before the applicable date set forth in Attachment K-1 (Company Milestones and Seller's Conditions Precedent), Company shall be entitled to an extension for a period of time reasonably necessary to meet any Company Milestone Date adversely affected by Seller's failure, which extension shall be no shorter than a day-for-day extension. Company's obligation to achieve the Company Milestones is contingent upon Seller completing the Seller's Conditions Precedent set forth in Attachment K-1 (Company Milestones and Seller's Conditions Precedent). Seller's sole remedy in the event Company fails to achieve any such Company Milestone, and such failure is not remedied by Company within in ten (10) Days after written notice of such failure from Seller, shall be Seller's ability to declare this Agreement null and void pursuant to Section 12.7 (Agreement Null and Void). Such declaration by Seller shall occur within thirty (30) Days of such missed Company Milestone.

ARTICLE 14
CREDIT ASSURANCE AND SECURITY

- 14.1 General. Seller is required to post and maintain Development Period Security and Operating Period Security based on the requirements of this Article 14 (Credit Assurance and Security).
- 14.2 Development Period Security. To guarantee its undertaking to meet the Guaranteed Commercial Operations Date, Seller shall provide Development Period Security to Company within ten (10) Days of Execution Date of the Agreement.
- 14.3 Return of Development Period Security. In the event (i) this Agreement is declared null and void pursuant to Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller), (ii) the PUC issues an order denying approval for an application for a PUC Approval Order, or (iii) 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 Seller, subject to Company's right to draw from the Development Period Security as set forth in Section 14.7 (Company's Right to Draw from Security Funds).

- 14.4 Operating Period Security. To guarantee the performance of Seller's obligations under the Agreement for the period starting from the Commercial Operations Date to the expiration or termination of this Agreement, Seller shall provide operating period security to Company in the amount of \$75/kW based on the Contract Capacity (the "Operating Period Security"). When the Commercial Operations Date has been achieved, the Development Period Security minus an amount that is due and owing to Company but not previously paid by Seller (including but not limited to Daily Delay Damages), shall be converted to Operating Period Security unless the Parties otherwise agree. Any additional amount necessary to fully fund the Operating Period Security shall be due within five (5) Days of the Commercial Operations Date.
- 14.5 Form of Security. Seller may supply the Development Period and Operating Period Security required in the form of cash or an irrevocable standby letter of credit with no documenting requirement substantially in the form attached to this Agreement as Attachment M (Form of Letter of Credit) from a bank or other financial institution located in the United States with a credit rating of "A-" or better. If the rating (as measured by Standard & Poor's) of the bank or financial institution issuing the standby letter of credit falls below A-, Company may require Seller to replace the standby letter of credit with a standby letter of credit from another bank or financial institution located in the United States with a credit rating of "A-" or better. If security in the form of a standby letter of credit is utilized by Seller, such security shall be issued for a minimum term of one (1) year. Furthermore, at the end of each year the security shall be renewed for 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 Company of any expiration or earlier termination of the security so as to allow Company sufficient time to exercise its rights under said security if Seller fails to extend or replace the security.

- 14.6 Security Funds. 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 Article 14 (Credit Assurance and Security) shall be available to pay any amount due Company pursuant to this Agreement, and to provide Company security that Seller will construct the Facility to meet the Construction Milestones. The Security Funds shall also provide security to Company to cover damages, should the Seller fail to achieve the Guaranteed Project Milestones by the Guaranteed Project Milestone Dates or otherwise not operate the Facility in accordance with this Agreement. Seller shall maintain the Security Funds at the contractually-required level throughout the Term of this Agreement, and shall replenish the Security Funds to such required level within fifteen (15) Business Days after any draw on the Security Funds by Company or any reduction in the value of Security Funds below the required level for any other reason. Notwithstanding the foregoing, Seller's obligation to replenish the Development Period Security shall not exceed in total three (3) times the original amount of the Development Period Security required under Section 14.2 (Development Period Security) of this Agreement, and that the Seller's obligation to replenish the Operating Period Security shall not exceed in total three times the original amount of the Operating Period Security required under Section 14.4 (Operating Period Security) of this Agreement.
- 14.7 Company's Right to Draw from Security Funds. In addition to any other remedy available to it, Company may, before or after termination of this Agreement, draw from the Security Funds such amounts as are necessary to recover amounts Company is owed pursuant to this Agreement or the IRS Letter Agreement, including, without limitation, any damages due Company, any interconnection costs owed pursuant to Attachment G (Company-Owned Interconnection Facilities) and any amounts for which Company is entitled to indemnification under this Agreement. Company may, in its sole discretion, draw all or any part of such amounts due Company from any form of security to the extent available pursuant to this Article 14 (Credit Assurance and Security), and from all such forms, and in any sequence Company may select. Any failure to draw upon the Security Funds or other security for any damages or other amounts due Company shall not prejudice Company's rights to recover such damages or amounts in any other manner.

- 14.8 Establishment of Security Funds. The Security Funds shall be maintained at Seller's expense, and shall be originated by or deposited in a financial institution or company ("Issuer") acceptable to Company. Seller may change the form of the Security Funds at any time and from time to time upon reasonable prior notice to Company, but the Security Funds shall at all times be comprised of one or a combination of the forms specified above in Section 14.5 (Form of Security).
- 14.9 Certain Requirements. The form of such security shall meet Company's requirements to ensure that claims or draw-downs can be made unilaterally by Company in accordance with the terms of this Agreement. If the security is not renewed or extended as required herein, 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 14.10 (Security in the Form of Cash), until and unless Seller provides a substitute form of such security meeting the requirements of this Article 14 (Credit Assurance and Security). 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.
- 14.10 Security in the Form of Cash. If the security is in the form of cash as permitted in Section 14.5 (Form of Security), above, the cash shall be United States currency, in which Company holds a first and exclusive perfected security interest, deposited with a reputable, federally-insured bank under a control agreement and other agreements required by Company (executed by Seller, Company and Issuer, as necessary) in form and content satisfactory to Company to perfect Company's security interest in the Security Funds and giving Company the sole authority to draw from the account. Security provided in the form of cash shall include a requirement for immediate notice to Company from Issuer and Seller in the event that the sums held as security in the account do not at any time meet the required level for the Security Funds as set forth in this Article 14 (Credit Assurance and Security). 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 (3) months or less, with all investment income thereon to be taxable to, and to accrue for the benefit of, Seller. After

the Commercial Operations Date is achieved, annual account sweeps for recovery of interest earned by the Security Funds shall be allowed by Seller. At such times as the balance in the account exceeds the amount of Seller's obligation to provide security hereunder, Company shall remit to Seller on demand any excess in the account above Seller's obligations. For the avoidance of doubt, such obligations shall include, but are not limited to, any and all damages owed by Seller to Company under the terms of this Agreement.

14.11 Release of Security Funds. Promptly following the end of the Term, and the complete performance of all of Seller's obligations under this Agreement, including but not limited to the obligation to pay any and all amounts owed by Seller to Company under this Agreement, Company shall release the Security Funds (including any accumulated interest, if applicable) to Seller.

14.12 [RESERVED]

14.13 [RESERVED]

ARTICLE 15
EVENTS OF DEFAULT

15.1 Events of Default by Seller. The occurrence of any of the following shall constitute an Event of Default by Seller:

- (A) if at any time during the Term, Seller delivers or attempts to deliver to the Point of Interconnection for sale under this Agreement electric energy that was not generated by the Facility;
- (B) if at any time during the Initial Term subsequent to the Commercial Operations Date, Seller fails to provide electric energy to Company for a period of three hundred sixty-five (365) or more consecutive Days, unless such failure is caused by the inability of Company to accept such electric energy or any breach of Company's obligations under this Agreement;
- (C) if at any time during the Banked Curtailed Energy Term, Seller fails to provide electric energy to Company for a period of ninety(90) or more consecutive Days, unless such failure is caused by the inability of Company to accept such electric energy, or any breach of Company's obligations under this Agreement;

- (D) if at any time during the Term, Seller fails to satisfy the Credit Assurance and Security requirements agreed to pursuant to Article 14 (Credit Assurance and Security) of this Agreement, and such failure is not cured within five (5) Business Days after written notice from Company of such failure;
- (E) if at any time during the Term, Seller fails to comply with the requirements of Section 19.1 (Sale of Facility) and Attachment P (Sale of Facility by Seller); or
- (F) [RESERVED]
- (G) if at any time subsequent to the Commercial Operations Date, Seller fails to install, operate, maintain, or repair the Facility in accordance with Good Engineering and Operating Practices if such failure is not cured within thirty (30) Days after written notice of such failure from Company unless such failure cannot be cured within said thirty (30) Day period and Seller is making commercially reasonable efforts to cure such failure, in which case Seller shall have a cure period of three hundred sixty-five (365) Days after Company's written notice of such failure.

15.2 Events of Default by a Party. The occurrence of any of the following during the Term of the Agreement shall constitute an Event of Default by the Party responsible for the failure, action or breach in question:

- (A) The failure to make any payment required pursuant to this Agreement when due if such failure is not cured within ten (10) Business Days after written notice is received by the Party failing to make such payment;
- (B) Any representation or warranty made by such Party herein is false and misleading in any material respect when made;
- (C) Such Party becomes bankrupt;
- (D) Such Party engages in or is the subject of a transaction requiring the prior written consent of the other Party under Section 19.2 (Assignment by Seller) or Section 19.7 (Assignment By Company) (as applicable) without having obtained such consent;

- (E) Such Party fails to comply with either (i) an arbitrator's decision under Article 28 (Dispute Resolution), (ii) or an Independent Evaluator's decision under Article 23 (Process for Addressing Revisions to Performance Standards), in either case within thirty (30) Days after such decision becomes binding on the Parties in accordance with Article 28 (Dispute Resolution) or within thirty (30) Days of the issuance of such decision under Article 23 (Process for Addressing Revisions to Performance Standards), as applicable, or, if such decision cannot be complied with within thirty (30) Days, such Party fails to have commenced commercially reasonable efforts designed to achieve compliance within such thirty (30) Days and diligently continue such commercially reasonable efforts until compliance is attained; or
- (F) A Party, by act or omission, materially breaches or defaults on any material covenant, condition or other provision of this Agreement, other than the provisions specified in Section 15.1 (Events of Default by Seller) and Section 15.2(A) through Section 15.2(E), if such breach or default is not cured within thirty (30) Days after written notice of such breach or default from the other Party; provided, however, that if such breach or default cannot be cured within said thirty (30) Day period and the Non-performing Party is making commercially reasonable efforts to cure such breach or default, the Non-performing Party shall have a cure period of three hundred sixty five (365) Days beginning on the date of the other Party's written notice of such breach or default.

15.3 Cure/Grace Periods. Before becoming an Event of Default, the occurrences set forth in Section 15.1 (Events of Default by Seller) and Section 15.2 (Events of Default by a Party) are subject to the following cure/grace periods:

- (A) If the occurrence is not the result of Force Majeure, the Non-performing Party shall be entitled to a cure period to the limited extent expressly set forth in the applicable provision of Section 15.1 (Events of Default by Seller) or Section 15.2 (Events of Default by a Party); or
- (B) If the occurrence is the result of Force Majeure, and if and so long as the conditions set forth in Section 21.4 (Satisfaction of Certain Conditions) are

satisfied, the Non-performing Party shall be entitled to a grace period as provided in Section 21.6 (Events of Default), which shall apply in lieu of any cure periods provided in Section 15.1 (Events of Default by Seller) and Section 15.2 (Events of Default by a Party).

- 15.4 Rights of the Non-defaulting Party. If an Event of Default shall have occurred and be continuing, the Party who is not the Defaulting Party ("Non-defaulting Party") shall have the right (i) to terminate this Agreement by sending written notice to the Defaulting Party as provided in this Section 15.4 (Rights of the Non-defaulting Party); (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 to the extent permitted under this Agreement. A notice terminating this Agreement pursuant to this Section 15.4 (Rights of the Non-defaulting Party) shall designate the Day such termination is to be effective which Day shall be no later than thirty (30) Days after such notice is deemed to be received by the Defaulting Party and not earlier than the first to occur of the Day such notice is deemed to be received by the Defaulting Party or the Day following the expiration of any period afforded the Defaulting Party under Section 15.1 (Events of Default by Seller) and Section 15.2 (Events of Default by a Party) to cure the default in question. If the Agreement is terminated by Company because of one or more of the Events of Default by Seller, Company shall have the right, in addition to the rights set forth above in this Section 15.4 (Rights of the Non-defaulting Party), to collect liquidated damages ("Termination Damages"), in accordance with Article 16 (Damages in the Event of Termination by Company).
- 15.5 Force Majeure. To the extent a Non-performing Party is entitled to defer certain liabilities pursuant to Article 21 (Force Majeure) of the Agreement, the permitted period of deferral shall be governed by Section 21.6 in lieu of this Article 15 (Events of Default).
- 15.6 Guaranteed Substantial Commitment Dates and Guaranteed Commercial Operations Date. Notwithstanding any other provision of this Article 15 (Events of Default) to the contrary, any failure of Seller to achieve any of the Substantial Commitment Milestones by the applicable Guaranteed Substantial Commitment Date and/or the Commercial Operations Date by the Guaranteed Commercial Operations Date shall be governed by Article 13 (Construction Milestones)

Including the Guaranteed Substantial Commitment Dates and the Guaranteed Commercial Operations Date) in lieu of this Article 15 (Events of Default).

- 15.7 Equitable Remedies. Seller acknowledges that Company is a public utility and is relying upon Seller's performance of its obligations under this Agreement, and that Company and/or its customers may suffer irreparable injury as a result of the failure of Seller to perform any of such obligations, whether or not such failure constitutes an Event of Default or otherwise gives rise to one or more of the remedies set forth in Section 15.4 (Rights of the Non-defaulting Party). Accordingly, the remedies set forth in Section 15.4 (Rights of the Non-defaulting Party) shall not limit or otherwise affect Company's right to seek specific performance injunctions or other available equitable remedies for Seller's failure to perform any of its obligations under this Agreement, irrespective of whether such failure constitutes an Event of Default.

ARTICLE 16
DAMAGES IN THE EVENT OF TERMINATION BY COMPANY

- 16.1 Termination Due to Failure to Meet a Guaranteed Project Milestone Date. If the Agreement is terminated by Company pursuant to Section 13.4 (Damages and Termination), Company shall be entitled to Termination Damages calculated by multiplying the Contract Capacity by \$50/kW, less the total amount of Daily Delay Damages actually paid by Seller to Company under Section 13.4 (Damages and Termination).
- 16.2 Termination Due to an Event of Default. If the Agreement is terminated by Company in accordance with this Agreement after the Commercial Operations Date due to an Event of Default where Seller is the Defaulting Party, Company shall be entitled to Termination Damages calculated by multiplying the Contract Capacity by \$75/kW.
- 16.3 Liquidated Damages Appropriate. Each Party agrees and acknowledges that (i) the damages that Company would incur due to early termination of the Agreement pursuant to either Section 13.4 (Damages and Termination) or Section 15.4 (Rights of the Non-defaulting Party) would be difficult or impossible to calculate with certainty, (ii) the Termination Damages are an appropriate approximation of such damages, and (iii) payment of Termination Damages does not relieve Seller of liability for costs and balances incurred prior to the effective date of such termination. The Termination

Damages are the sole and exclusive remedy for Company's losses arising out of the termination of this Agreement. The Termination Damages are not intended to limit Company's rights or remedies, or Seller's liabilities or duties, with respect to losses arising independent of the termination of this Agreement, including, without limitation, Company's right to recover under Section 17.1 (Indemnification of Company).

- 16.4 Consequential Damages. Neither Party shall be liable for damages incurred by the other Party for any loss of profit or revenues, loss of product, loss of use of products or services or associated equipment, interruption of business, cost of capital, downtime costs, increased operating costs, or for any special, consequential, incidental, indirect or punitive damages; provided, however, that nothing in this Section 16.4 (Consequential Damages) shall limit any of (i) the indemnification obligations of either Party under Article 17 (Indemnification) of this Agreement, (ii) the liability of either Party for liquidated damages as set forth in this Agreement or (iii) the liability of either Party for gross negligence or intentional misconduct.
- 16.5 Return of Unexpended Advances. Upon the expiration or earlier termination of this Agreement, Seller shall pay Company the actual costs and cost obligations incurred by Company as of the date the Agreement is terminated for Company-Owned Interconnection Facilities and any reasonable costs incurred thereafter and Company shall refund to Seller any amounts advanced by Seller in excess of such costs.

ARTICLE 17
INDEMNIFICATION

17.1 Indemnification of Company.

- (A) Indemnification Against Third Party Claims. Seller shall indemnify, defend, and hold harmless Company, its successors, permitted assigns, affiliates, controlling persons, directors, officers, employees, agents, contractors, and the employees of any of them (collectively referred to as an "Indemnified Company Party"), from and against any Losses suffered, incurred or sustained by any Indemnified Company Party due to any Claim (whether or not well founded, meritorious or unmeritorious) by a third party not controlled by, or under common ownership and/or control with, Company relating to any actual or alleged personal injury or

death or damage to property, in any way arising out of, incident to, or resulting directly or indirectly from the acts or omissions of Seller or its agents, except as and to the extent that such Loss is attributable to the gross negligence or willful misconduct of an Indemnified Company Party.

- (B) Compliance with Laws. Any Losses incurred by an Indemnified Seller Party for noncompliance by Seller or an Indemnified Seller Party with applicable Laws shall not be reimbursed by Company but shall be the sole responsibility of Seller. Seller shall indemnify, defend and hold harmless each Indemnified Company Party from and against any and all Losses in any way arising out of, incident to, or resulting directly or indirectly from the failure of Seller to comply with any Laws.
- (C) Notice. If Seller shall obtain knowledge of any Claim subject to Section 17.1(A) (Indemnification Against Third Party Claims), Section 17.1(B) (Compliance with Laws) or otherwise under this Agreement, Seller shall give prompt notice thereof to Company, and if Company shall obtain any such knowledge, Company shall give prompt notice thereof to Seller.
- (D) Indemnification Procedures.
- (1) In case any Claim subject to Section 17.1(A) (Indemnification Against Third Party Claims) or Section 17.1(B) (Compliance with Laws) or otherwise under this Agreement, shall be brought against an Indemnified Company Party, Company shall notify Seller of the commencement thereof and, provided that Seller has acknowledged in writing to Company its obligation to an Indemnified Company Party under this Section 17.1 (Indemnification of Company), Seller shall be entitled, at its own expense, acting through counsel acceptable to Company, to participate in and, to the extent that Seller desires, to assume and control the defense thereof; provided, however, that Seller shall not compromise or settle a Claim against an Indemnified Company Party without the prior written consent of Company which consent shall not be unreasonably withheld.

- (2) Seller shall not be entitled to assume and control the defense of any such Claim subject to Section 17.1(A) (Indemnification Against Third Party Claims), Section 17.1(B) (Compliance with Laws) or otherwise under this Agreement, if and to the extent that, in the sole opinion of Company, such Claim involves the potential imposition of criminal liability on an Indemnified Company Party or a conflict of interest between an Indemnified Company Party and Seller, in which case Company shall be entitled, at its own expense, acting through counsel acceptable to Seller to participate in any Claim, the defense of which has been assumed by Seller. Company shall supply Seller with such information and documents requested by Seller as are necessary or advisable for Seller to possess in connection with its participation in any Claim to the extent permitted by this Section 17.1(D)(2). An Indemnified Company Party shall not enter into any settlement or other compromise with respect to any Claim without the prior written consent of Seller, which consent shall not be unreasonably withheld or delayed.
- (3) Upon payment of any Losses by Seller, pursuant to this Section 17.1 (Indemnification of Company) or other similar indemnity provisions contained herein, to or on behalf of Company, Seller, without any further action, shall be subrogated to any and all claims that an Indemnified Company Party may have relating thereto.
- (4) Company shall fully cooperate and cause all Company Indemnified Parties to fully cooperate, in the defense of or response to, any Claim subject to Section 17.1 (Indemnification of Company).

17.2 Indemnification of Seller.

- (A) Indemnification Against Third Party Claims. Company shall indemnify, defend, and hold harmless Seller, its successors, permitted assigns, affiliates, controlling persons, directors, officers, employees, servants and agents, contractors and the employees of any of them (collectively referred to as an "Indemnified Seller Party"), from and against any Losses suffered, incurred or sustained by any Indemnified Seller Party due to any Claim by a third party not controlled by or under

common ownership and/or control with Seller (whether or not well founded, meritorious or unmeritorious) relating to any actual or alleged personal injury or death or damage to property, in any way arising out of, incident to, or resulting directly or indirectly from the acts or omissions of Company or its agents, except to the extent that any such Loss is attributable to the gross negligence or willful misconduct of an Indemnified Seller Party.

- (B) Compliance with Laws. Company shall indemnify, defend and hold harmless each Indemnified Seller Party from and against any and all Losses suffered, incurred or sustained by any Indemnified Seller Party or to which any Indemnified Seller Party becomes subject, resulting from, arising out of, or relating to, any Claim by a third party not controlled by, or under common ownership and/or control with, Seller (whether or not well founded, meritorious or unmeritorious) relating to the failure of Company to comply with any Laws.
- (C) Notice. If Company shall obtain knowledge of any Claim subject to Section 17.2(A) (Indemnification Against Third Party Claims) or otherwise under this Agreement, Company shall give prompt notice thereof to Seller, and if Seller shall obtain any such knowledge, Seller shall give prompt notice thereof to Company.
- (C) Indemnification Procedures.
- (1) In case any action, suit or proceeding subject to Section 17.2(A) (Indemnification Against Third Party Claims), or otherwise under this Agreement, shall be brought against an Indemnified Seller Party, Seller shall notify Company of the commencement thereof and, provided that Company has acknowledged in writing to Seller its obligation to an Indemnified Seller Party under this Section 17.2 (Indemnification of Seller), Company shall be entitled, at its own expense, acting through counsel acceptable to Seller, to participate in and, to the extent that Company desires, to assume and control the defense thereof; provided, however, that Company shall not compromise or settle a Claim against an Indemnified Seller Party without the prior written consent of Seller which consent shall not be unreasonably withheld.

- (2) Company shall not be entitled to assume and control the defense of any such Claim subject to Section 17.2(A) (Indemnification Against Third Party Claims), or otherwise under this Agreement, if and to the extent that, in the opinion of Seller, such Claim involves the potential imposition of criminal liability on an Indemnified Seller Party or a conflict of interest between an Indemnified Seller Party and Company, in which case Seller shall be entitled, at its own expense, acting through counsel acceptable to Company, to participate in any Claim the defense of which has been assumed by Company. An Indemnified Seller Party shall supply Company with such information and documents requested by Company as are necessary or advisable for Company to possess in connection with its participation in any Claim, to the extent permitted by this Section 17.2(C) (2). An Indemnified Seller Party shall not enter into any settlement or other compromise with respect to any Claim without the prior written consent of Company, which consent shall not be unreasonably withheld or delayed.
- (3) Upon payment of any Losses by Company pursuant to this Section 17.2 (Indemnification of Seller) or other similar indemnity provisions contained herein to or on behalf of Seller, Company, without any further action, shall be subrogated to any and all claims that an Indemnified Seller Party may have relating thereto.
- (4) Seller shall fully cooperate and cause all Seller Indemnified Parties to fully cooperate, in the defense of, or response to, any Claim subject to Section 17.2 (Indemnification of Seller).

ARTICLE 18
INSURANCE

- 18.1 Required Coverage. Seller, and anyone acting under its direction or control or on its behalf, shall, at its own expense, acquire and maintain, or cause to be maintained in full effect, commencing with the start of construction of the Facility, as applicable, and continuing throughout the Term, as applicable, the minimum insurance coverage set forth in Attachment R (Required Insurance), or such higher amounts as the Seller and/or the Facility Lender reasonably determines to be necessary during construction and operation

of the Facility. Seller's indemnity and other obligations shall not be limited by the foregoing insurance requirements. Any deductible shall be the responsibility of Seller.

- 18.2 Waiver of Subrogation. Seller, and anyone acting under its direction or control or on its behalf, shall cause its insurers (except for Workers' Compensation insurers) to waive all rights of subrogation which Seller or its insurers may have against Company, Company's agents, or Company's employees.
- 18.3 Additional Insureds. The insurance policies specified in Section 2 (General Liability Insurance) and Section 3 (Automobile Liability Insurance) of Attachment R (Required Insurance) shall name Company as an additional insured, as its interests may appear, with respect to any and all third party bodily injury and/or property damage claims, including completed operations, arising from Seller's performance of this Agreement, and Seller shall submit to Company a copy of such additional insured endorsement with evidence of insurance as required herein. The insurance policies specified in Section 4 (Builders All Risk Insurance) and Section 5 (All Risk Property/Comprehensive Boiler and Machinery Insurance (Upon Completion of Construction)) of Attachment R (Required Insurance) shall include Company as loss payee, as its interest may appear with respect to any Property or Boiler and Machinery losses. Seller shall immediately provide written notice to Company should any of the insurance policies required under this Agreement be cancelled, materially modified, or not renewed upon expiration. Company acknowledges that the Facility Lender shall be entitled to receive and distribute any and all loss proceeds as stipulated by any Financing Documents related to any policy described in this Article 18 (Insurance) and Attachment R (Required Insurance).
- 18.4 Evidence of Policies Provided to Company. Evidence of insurance for the coverage specified in this Article 18 (Insurance) shall be provided to Company within thirty (30) Days after the Effective Date or prior to the start of construction, whichever shall first occur. Within 30 Days of any change of any policy and upon renewal of any policy, Seller shall provide certificates of insurance to Company. During the Term, Seller, upon Company's reasonable request, shall make available to Company for its inspection at Seller's designated location, certified copies of the

insurance policies described in this Article 18 (Insurance) and Attachment R (Required Insurance).

- 18.5 Deductibles. Company acknowledges that any policy required herein may contain reasonable deductibles or self-insured retentions, the amounts of which will be reviewed for acceptance by Company. Acceptance will not be unreasonably withheld.
- 18.6 Application of Proceeds From All Risk Property/Comprehensive Boiler and Machinery Insurance. Seller shall use commercially reasonable efforts to obtain provisions in the Financing Documents, on reasonable terms, providing for the insurance proceeds from All Risk Property/Comprehensive Boiler and Machinery Insurance to be applied to repair of the Facility.
- 18.7 Annual Review by Company. The coverage limits shall be reviewed annually by Company and if, in Company's discretion, Company determines that the coverage limits should be increased, Company shall so notify 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. Seller shall, within thirty (30) Days of notice from Company, increase the coverage as directed in such notice and the costs of such increased coverage limits shall be borne by Seller.
- 18.8 No Representation of Coverage Adequacy. By requiring insurance herein, Company does not represent that coverage and limits will necessarily be adequate to protect Seller, and such coverage and limits shall not be deemed as a limitation on Seller's liability under the indemnities granted to Company in this Agreement.
- 18.9 General Insurance Requirements.
 - (A) Each policy and certificate of insurance shall also specifically provide the following: "This policy shall be considered to be primary liability insurance which shall apply to any loss or claim before any contribution by any insurance which Hawaiian Electric Company, Inc., its employees and agents may have in force."

- (B) Each policy is to be written by an insurer with a rating by A.M. Best Company, Inc. of "A-VII" or better.
- (C) If the limits of available liability coverage required herein become substantially reduced as a result of claim payments, Seller shall immediately, at its own expense, purchase additional liability insurance (if such coverage is available at commercially reasonable rates) to increase the amount of available coverage to the limits of liability coverage required herein.

ARTICLE 19
TRANSFERS, ASSIGNMENTS, AND FACILITY DEBT

- 19.1 Sale of the Facility. Seller shall comply with the requirements of Attachment P (Sale of Facility by Seller) before (i) Seller's right, title or interest in the Facility, in whole or in part, may be disposed of, or (ii) there occurs any change in ownership interest in Seller requiring compliance with Attachment P (Sale of Facility by Seller). Any attempt by Seller to make any such disposition or change in control without fulfilling the requirements of Attachment P (Sale of Facility by Seller) shall be deemed null and void and shall constitute an Event of Default pursuant to Article 15 (Events of Default).
- 19.2 Assignment by Seller. This Agreement may not be assigned by Seller without the prior written consent of Company (such consent not to be unreasonably withheld, conditioned or delayed) provided that Seller shall have the right, without the consent of Company: (i) to assign its interest in this Agreement to a wholly-owned subsidiary or to an affiliated company under common control with First Wind Holdings, LLC, provided that such assignment does not impair the ability of Seller to perform its obligations under this Agreement; and (ii) as collateral security for purposes of arranging or rearranging debt and/or equity financing for the Facility, or for sale-leaseback financing, to assign all or any part of its rights or benefits, but not its obligations, to any lender providing debt financing for the Facility. Seller shall promptly provide written notice to Company of any assignment of all or part of this Agreement and Seller shall provide to Company information about the assignee and the assignee's operational experience reasonably requested by Company. Company shall not be required to incur any duty or obligation as a result of, or in connection with, such assignment made without its consent beyond those duties and

obligations set forth in this Agreement, unless otherwise agreed to by Company in writing.

- 19.3 Company's Acknowledgment. In connection with any assignment relating to the Facility Debt to which Company consents or which does not require consent pursuant to Section 19.2 (Assignment by Seller), Company shall, if requested by Seller and if its reasonable costs (including reasonable attorneys' fees of outside counsel) in responding to such request are paid by Seller: (i) execute such documents as may be reasonably requested by the Facility Lender to acknowledge such assignment and/or pledge/mortgage and the right of the Facility Lender to (aa) receive copies of notices of Events of Default where the Seller is the Defaulting Party and (bb) have reasonable opportunity to cure such Events of Default and to exercise remedies to assume Seller's obligations under this Agreement; and (ii) provide a legal opinion as to the due authorization of such Company acknowledgment.
- 19.4 Financing Document Requirements. Seller shall include in the terms of the Financing Documents provisions for Company's benefit that provide that as a condition to the Facility Lender, or any purchaser, successor, assignee and/or designee of the Facility Lender ("Subsequent Owner"), succeeding to ownership or possession of the Facility as a result of the exercise of remedies under the Financing Documents, and thereafter operating the Facility to generate electric energy, such Facility Lender or Subsequent Owner shall, prior to operating the Facility for such purpose, have assumed all of Seller's rights and obligations under this Agreement.
- 19.5 [RESERVED]
- 19.6 Reimbursement of Company Costs. Seller shall reimburse Company for its out-of-pocket costs and expenses incurred by Company (including reasonable attorneys' fees of outside counsel) in responding to Facility Lender's requests or as a result of any event of default by Seller under the Financing Documents.
- 19.7 Assignment By Company. This Agreement shall not be assigned by Company without the prior written consent of Seller (which consent shall not be unreasonably withheld, conditioned or delayed); provided, however, that Company shall have the right, without the consent of Seller, to assign its interest in this Agreement to any affiliated

company owned in whole or in part by Hawaiian Electric Industries, Inc.; provided, further, that (i) such assignee has a creditworthiness equal to or better than the creditworthiness of Company at the time of assignment, (ii) such assignee shall have assumed all obligations of Company under this Agreement, and (iii) such assignee is a utility regulated by the PUC.

- 19.8 Consequences for Failure to Comply. Any attempt to make any pledge, mortgage, grant of a security interest or collateral assignment for which consent is required under Section 19.2 (Assignment by Seller) or Section 19.7 (Assignment By Company) (as applicable), without fulfilling the requirements of this Article 19 (Transfers, Assignments, and Facility Debt) shall be null and void and shall constitute an Event of Default pursuant to Article 15 (Events of Default).

ARTICLE 20
SALE OF ENERGY TO THIRD PARTIES

Seller shall not sell energy from the Facility to any Third Party.

ARTICLE 21
FORCE MAJEURE

- 21.1 Definition of Force Majeure. The term "Force Majeure", as used in this Agreement, means any occurrence that was not anticipated as of the Execution Date that:
- (A) In whole or in part delays or prevents a Party's performance under this Agreement;
 - (B) Is not the direct or indirect result of the fault or negligence of that Party;
 - (C) Is not within the control of that Party notwithstanding such Party having taken all reasonable precautions and measures in order to prevent or avoid such event; and
 - (D) The Party has been unable to overcome by the exercise of due diligence.

- 21.2 Events That Could Qualify as Force Majeure. Subject to the foregoing, events that could qualify as Force Majeure include, but are not limited to, the following:

- (A) acts of God, flooding, lightning, landslide, earthquake, fire, drought, explosion, epidemic,

quarantine, storm, hurricane, tornado, volcano, other natural disaster or unusual or extreme adverse weather-related events, high winds of sufficient strength or duration to materially damage a facility or significantly impair its construction or operation for a period of time longer than normally encountered in similar businesses under comparable circumstances;

- (B) war (declared or undeclared), riot or similar civil disturbance, acts of the public enemy (including acts of terrorism), sabotage, blockade, insurrection, revolution, expropriation or confiscation; or
- (C) except as set forth in Section 21.3(J) (Exclusions from Force Majeure), strikes, work stoppage or other labor disputes (in which case the affected Party shall have no obligation to settle the strike or labor dispute on terms it deems unreasonable).

21.3 Exclusions From Force Majeure. Force Majeure does not include:

- (A) 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;
- (B) any full or partial reduction in the electric output of Facility that is caused by or arises from (i) a mechanical or equipment breakdown or (ii) other mishap or events or conditions attributable to normal wear and tear or defects, unless such mishap is caused by Force Majeure;
- (C) changes in market conditions that affect the cost of Seller's supplies, or that affect demand or price for any of Seller's products, or that otherwise render this Agreement uneconomic or unprofitable for Seller;
- (D) Seller's inability to obtain Governmental Approvals or Land Rights for the construction, ownership, operation and maintenance of Facility and the Company-Owned Interconnection Facilities, or Seller's loss of any such Governmental Approvals or Land Rights once obtained;
- (E) the lack of wind, sun or any other resource of an inherently intermittent nature;

- (F) Seller's inability to obtain sufficient fuel, power or materials to operate its Facility, except if Seller's inability to obtain sufficient fuel, power or materials is caused solely by an event of Force Majeure;
- (G) 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 Company pursuant to this Agreement;
- (H) a Forced Outage except where such Forced Outage is caused by an event of Force Majeure;
- (I) litigation or administrative or judicial action pertaining to the Agreement, the Site, the Facility, the Land Rights, the acquisition, maintenance or renewal of financing or any Governmental Approvals, or the design, construction, ownership, operation or maintenance of the Facility, the Company-Owned Interconnection Facilities or the Company System;
- (J) a strike, work stoppage or labor dispute limited only to any one or more of the Indemnified Seller Parties or any other third party employed by Seller to work on the Project; or
- (K) any full or partial reduction in the delivery of the Actual Output of Seller or of the ability of Company to accept Actual Output from Seller which is caused by any Third Party including, without limitation, any vendor or supplier of Seller or Company, except to the extent due to Force Majeure.

21.4 Satisfaction of Certain Conditions. Section 21.5 (Commercial Operations Date), Section 21.6 (Events of Default) and Section 21.7 (Effect of Force Majeure) defer or limit certain liabilities of a Party for delay and/or failure in performance to the extent such delay or failure is the result of conditions or events of Force Majeure; provided, however, that a Non-performing Party is only entitled to such limitations or deferrals of liabilities as and to the extent the following conditions are satisfied:

- (A) the Non-performing Party gives the other Party, within 48 hours after the Non-performing Party becomes aware of or should have become aware (but in any event no later than 30 Days after the Force Majeure condition or event begins) of such Force Majeure condition or event,

written notice stating that the Non-performing Party considers such condition or event to constitute Force Majeure and describing the particulars of such Force Majeure condition or event;

- (B) the Non-performing Party gives the other Party, within 14 Days after the notice provided in Section 21.4(A) was or should have been issued, a written explanation of the Force Majeure condition or event and its effect on the Non-performing Party's performance, which explanation shall include evidence reasonably sufficient to establish that the occurrence constitutes Force Majeure;
- (C) 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;
- (D) the Non-performing Party proceeds with reasonable diligence to remedy its inability to perform and provides written weekly progress reports to the other Party describing actions taken to end the Force Majeure; and
- (E) when the condition or event of Force Majeure ends and the Non-performing Party is able to resume performance of its obligations under this Agreement, that Party shall give the other Party written notice to that effect.

21.5 Guaranteed Substantial Commitment Dates and Guaranteed Commercial Operations Date. A condition or event of Force Majeure affecting the achievement of a Guaranteed Substantial Commitment Date or the Guaranteed Commercial Operations Date shall not relieve Seller from liability for either any applicable Daily Delay Damages under Section 13.4 (Damages and Termination) or Termination Damages for early termination under Section 16.1 (Termination Due to Failure to Meet a Guaranteed Project Milestone Date), although such a condition or event of Force Majeure shall, if and for so long as the conditions of Section 21.4 (Satisfaction of Certain Conditions) are satisfied, have the effect of deferring such liabilities to the extent of the applicable grace period (if any) provided in Section 13.3 (Guaranteed Project Milestone Dates).

21.6 Events of Default. If an occurrence that would constitute an Event of Default under Article 15 (Events of Default) is the

result of a condition or event of Force Majeure, Seller shall not be relieved from liability for Termination Damages for early termination under Article 16 (Damages in the Event of Termination by Company), although such a condition or event of Force Majeure shall, if and for so long as the conditions set forth in Section 21.4 (Satisfaction of Certain Conditions) are satisfied, have the effect of deferring such liability for the lesser of the duration of the Force Majeure or three hundred sixty-five (365) Days, as noticed pursuant to Section 21.4(A).

- 21.7 Effect of Force Majeure. Other than as provided in Section 21.5 (Guaranteed Substantial Commitment Dates and Guaranteed Commercial Operations Date) and Section 21.6 (Events of Default), neither Party shall be responsible or liable for any delays or failures in its performance under this Agreement as and to the extent (i) such delays or failures are substantially caused by conditions or events of Force Majeure, and (ii) the conditions of Section 21.4 (Satisfaction of Certain Conditions) are satisfied.
- 21.8 No Relief of Other Obligations. 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.
- 21.9 No Extension of the Term. 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.

ARTICLE 22
WARRANTIES AND REPRESENTATIONS

- 22.1 By the Parties. Both Company and Seller represent and warrant, respectively, that:
- (A) Each respective Party has all necessary right, power and authority to execute, deliver and perform this Agreement
- (B) The execution, delivery and performance of this Agreement by each respective Party will not result in a violation of any Laws, 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.

22.2 By Seller. Seller represents, warrants and covenants that:

- (A) It is an entity in good standing with the Hawaii Department of Commerce and Consumer Affairs and shall provide Company with a certified copy of a certificate of good standing by the Execution Date.
- (B) Seller is a subsidiary of First Wind Holdings, LLC, a company with extensive experience developing, constructing, owning and operating utility-scale renewable energy generation facilities.
- (C) As of the Execution Date, Seller's affiliate has obtained a purchase agreement to purchase all Land Rights necessary for the construction, ownership, operation and maintenance of the Facility during the Initial Term. Upon completion of such purchase, but no later than twenty (20) Days following the Execution Date, Seller shall cause its affiliate to transfer such Land Rights to Seller, and Seller shall maintain such Land Rights in effect throughout the Term.
- (D) As of the commencement of construction, Seller shall, other than the certificate of occupancy which is not issued until the completion of construction, have obtained (i) all Land Rights and Governmental Approvals necessary for the construction, ownership, operation and maintenance of the Company-Owned Interconnection Facilities and (ii) all Governmental Approvals necessary for the construction, ownership, operation and maintenance of the Facility.
- (E) As of the Commercial Operations Date, the Facility will be a qualified renewable resource under RPS in effect as of the Effective Date.

ARTICLE 23
PROCESS FOR ADDRESSING
REVISIONS TO PERFORMANCE STANDARDS

- 23.1 **Revisions to Performance Standards.** The Parties acknowledge that, during the Term, certain Performance Standards may be revised or added to facilitate necessary improvements in integrating intermittent renewable energy resources into the Company System and operations. In particular, the following Performance Standards in Attachment B (Facility Owned by Seller) to this Agreement may be revised: Section 3(c) (Ramp Rates); Section 3(d) (Power Fluctuation Rate); and, Section 3(m) (Frequency Regulation). Such revisions or additions may be attributable to, without limitation, the following: changes in penetration levels of intermittent renewable resources on the Company 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 Laws (e.g., new environmental constraints, which may limit Company's ability to start/stop its generators in response to integration of intermittent generation, or constraints impacting the power quality standards for the Company System, such as constraints imposed by HERA or by the PUC under the HERA Law).
- 23.2 **Performance Standards Information Request.** If Company concludes that a Performance Standards Revision is necessary or important for the operation of the Company 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.
- 23.3 **Performance Standards Proposal.** 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.

- 23.4 Performance Standards Revision Document. 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 necessary to implement such Performance Standards Revision. A decision by 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 the Contract Price pursuant to such Performance Standards Revision Document shall be limited to the Performance Standards Pricing Impact. 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 23.6 (PUC Performance Standards Revision Order).
- 23.5 Failure to Reach Agreement. 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 23.4 (Performance Standards Revision Document), Company shall have the option of declaring the failure to reach agreement on and execute such Performance Standards Revision Document to be a dispute and submit such dispute to an Independent Evaluator for the conduct of a determination pursuant to Section 23.10 (Dispute) 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 23.4 (Performance Standards Revision Document).
- 23.6 PUC Performance Standards Revision Order. 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 this Agreement. To be "non-appealable" under this Section 23.6 (PUC Performance Standards Revision Order), such PUC Performance Standards Revision Order shall 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 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).

- 23.7 Company's Rights. The rights granted to Company under Section 23.4 (Performance Standards Revision Document) and Section 23.5 (Failure to Reach Agreement) 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 23.10 (Dispute), as a result of a failure to agree upon and execute any Performance Standards Revision Document.
- 23.8 Seller's Obligation. Notwithstanding any provision of this Article 23 (Process for Addressing Revisions to Performance Standards) to the contrary, Seller shall have no obligation to respond to more than one Performance Standards Information Request during any 12-month period.
- 23.9 Limited Purpose. This Article 23 (Process for Addressing Revisions to Performance Standards) is intended to specifically address necessary revisions to the Performance Standards to enhance integration of intermittent resources onto Company System, or to comply with future Laws 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 Article 23 (Process for Addressing Revisions to Performance Standards) are not intended to increase Seller's risk of non-performance or default.

23.10 Dispute. If 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 23.5 (Failure to Reach Agreement), it shall provide written notice to that effect to Seller. Within 20 Days of delivery of such notice Seller and Company shall agree upon an 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 20-Day period, Company shall apply to the PUC for 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 shall appoint one of the persons or entities qualified to serve as an independent observer to be the Independent Evaluator; if not, the PUC shall appoint another qualified person or entity to serve as Independent Evaluator. In its application, Company shall ask the PUC to appoint an Independent Evaluator within 30 Days of the application.

- (A) Promptly upon appointment, the Independent Evaluator shall request the Parties to address the following matters within the next 15 Days:
- (1) The Performance Standard Revision(s);
 - (2) The technical feasibility of complying with the Performance Standard Revision(s) and likelihood of compliance;
 - (3) How Seller would comply with the Performance Standard Revision(s);
 - (4) Reasonably expected net costs and/or lost revenues associated with the Performance Standards Revision(s);
 - (5) The appropriate level, if any, of Performance Standards Pricing Impact in light of the foregoing; and

- (6) Contractual consequences for non-performance that are commercially reasonable under the circumstances.
- (B) Within 90 Days of appointment, the Independent Evaluator shall render a decision unless the Independent Evaluator determines it needs to have additional time, not to exceed 45 Days, to render a decision.
- (C) 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.
- (D) The following standards shall be applied by the Independent Evaluator in rendering his or her decision:
(i) 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); (ii) 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 into a Performance Standards Revision Document including (aa) Seller's Performance Standards Modifications, (bb) pricing terms that incorporate the Performance Standards Pricing Impact, and (cc) 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.

(E) The fees and costs of the Independent Evaluator shall be paid by Company up to the first \$30,000 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 \$30,000, 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.

23.11 HERA Law. The provisions of this Article 23 (Process for Addressing Revisions to Performance Standards) are without limitation to the obligations of the Parties under the HERA Law and the reliability standards and interconnection requirements developed and adopted by the PUC pursuant to the HERA Law.

ARTICLE 24
FINANCIAL COMPLIANCE

24.1 Financial Compliance. 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 its parent company, HEI, to comply with the requirements (initial and on-going) of (i) 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"), (iii) FASB ASC 840 Leases ("FASB ASC 810"), and (iv) all clarifications, interpretations and revisions of and regulations implementing FASB ASC 810, SOX 404 and FASB ASC 840, issued by the FASB, Securities and Exchange Commission, the Public Company Accounting Oversight Board, Emerging Issues Task Force or other Governmental Authorities. 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, however, 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 Facility, or the administration of this Agreement, from having access to such Information, (unless approved in writing in advance by Seller).

- 24.2 Confidentiality. Company shall, and shall cause HEI to, maintain the confidentiality of the Information as provided in this Article 24 (Financial Compliance). Company may share the Information on a confidential basis with HEI and the independent auditors and attorneys for HEI. (Company, HEI, and their respective independent auditors and attorneys are collectively referred to in this Article 24 (Financial Compliance) 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 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 Article 24 (Financial Compliance).
- 24.3 Required Disclosure. In circumstances other than those addressed in Section 24.2 (Confidentiality), if any Recipient becomes legally compelled under applicable Laws 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 Article 24 (Financial Compliance). If such protective order or other remedy is not obtained, or if Seller waives compliance with the provisions at this Article 24 (Financial Compliance), 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.

- 24.4 Exclusions from Confidentiality. The obligation of nondisclosure and restricted use imposed on each Recipient under this Article 24 (Financial Compliance) 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.
- 24.5 Consolidation and Capital Lease. Company does not want to be subject to consolidation and capital lease treatment as set forth in FASB ASC 810 and 840, respectively, as issued and amended from time to time by FASB.
- (A) Consolidation. If for any reason, at any time during the Term, Company determines, in its sole but, nonarbitrary, discretion, that it is required to consolidate Seller into its financial statements in accordance with FASB ASC 810, then Seller shall immediately provide audited financial statements (including footnotes) in accordance with U.S. generally accepted accounting principles (and as of the reporting periods Company is required to report thereafter) in order for Company to consolidate and file its financial statements within the reporting deadlines of the Securities and Exchange Commission. Notwithstanding the foregoing requirement that Seller provide audited financial statements to Company, the Parties will take all commercially reasonable steps, which may include modification of this Agreement or effectuating a sale of the Facility to Company at fair market value pursuant to Section 5 (Procedure to Determine Fair Market Value of the Facility) of Attachment P (Sale of Facility by Seller) under a Purchase and Sale Agreement to be negotiated based on the terms and conditions set forth in Section 6 (Purchase and Sale Agreement) of

Attachment P (Sale of Facility by Seller), to eliminate the consolidation treatment, while preserving the economic "benefit of the bargain" to both Parties.

- (B) Capital Lease. If there is a change in circumstances during the Term that would trigger capital lease treatment as of the Execution Date, and such capital lease treatment is not attributable to Company's fault, then the Parties will take all commercially reasonable steps, which may include modification of the Agreement or effectuating a sale of the Facility to Company at fair market value pursuant to Section 5 (Procedure to Determine Fair Market Value of the Facility) of Attachment P (Sale of Facility by Seller) under a Purchase and Sale Agreement to be negotiated based on the terms and conditions set forth in Section 6 (Purchase and Sale Agreement) of Attachment P (Sale of Facility by Seller), to eliminate the capital lease treatment, while preserving the economic "benefit of the bargain" to both Parties.

ARTICLE 25
GOOD ENGINEERING AND OPERATING PRACTICES

- 25.1 General. 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 and applicable Laws.
- 25.2 Specifications, Determinations and Approvals. Wherever in this Agreement Company has the right to give specifications, determinations or approvals, such specifications, determinations or approvals shall be given in accordance with Company's standard practices, policies and procedures and shall not be unreasonably withheld.
- 25.3 No Endorsement, Warranty or Waiver. Any such specifications, determinations, or approvals shall not be deemed to be an endorsement, warranty, or waiver of any right of Company.
- 25.4 Consultants List. Prior to the Initial In-Service Date, the Parties shall agree on a list of names of engineering firms to be attached as Attachment D (Consultants List) in accordance with Section 4 (Maintenance of Seller-Owned Interconnection Facilities) of Attachment B (Facility Owned By Seller).

ARTICLE 26
EQUAL EMPLOYMENT OPPORTUNITY

- 26.1 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.) 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 applicable 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.
- 26.2 Equal Opportunity For Disabled Veterans, Recently Separated Veterans, Other Protected Veterans and Armed Forces Service Medal Veterans. Applicable to (i) contracts 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 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 to Seller under this Agreement, Seller agrees that 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 Agreement by reference.

ARTICLE 27
SET OFF

Company shall have the right to set off any payment due and owing by Seller, including but not limited to any payment under this Agreement and any payment due under any arbitration award made under Article 28 (Dispute Resolution), against Company's payments of subsequent monthly invoices as necessary.

ARTICLE 28
DISPUTE RESOLUTION

- 28.1 Good Faith Negotiations. Except as otherwise expressly set forth in this Agreement, before submitting any claims, controversies or disputes ("Dispute(s)") under this

Agreement to the Dispute Resolution Procedures set forth in Section 28.2 (Dispute Resolution Procedures), the presidents, vice presidents, or authorized delegates from both Seller and Company having full authority to settle the Dispute(s), shall personally meet in Hawaii and attempt in good faith to resolve the Dispute(s) (the "Management Meeting").

28.2 Dispute Resolutions Procedures.

- (A) Mediation. Except as otherwise expressly set forth in this Agreement and subject to Section 28.1 (Good Faith Negotiations), any and all Dispute(s) arising out of or relating to this Agreement, (i) which remain unresolved for a period of 20 Days after the Management Meeting takes place or (ii) for which the Parties fail to hold a Management Meeting within 60 Days of the date that a Management Meeting was requested by a Party, may upon the agreement of the Parties, first be submitted to confidential mediation in Honolulu, Hawaii pursuant to the administration by, and in accordance with the Mediation Rules, Procedures and Protocols of, Dispute Prevention & Resolution, Inc. (or its successor) or, in their absence, the American Arbitration Association ("DPR") then in effect. If the Parties agree to submit the dispute to confidential mediation, the parties shall each pay 50% of the cost of the mediation (i.e., the fees and expenses charged by the mediator and DPR) and shall otherwise each bear their own mediation costs and attorneys' fees. If settlement of the Dispute(s) is not reached within 60 Days after commencement of the mediation, either Party may initiate arbitration as set forth in Section 28.2(C) (Initiation of Arbitration) below.
- (B) Arbitration. If (i) any Disputes remain unresolved after such mediation concludes or the 60-Day mediation period has expired, or (ii) the Parties do not mutually agree to invoke mediation procedures, the Parties agree to submit any such Dispute(s) to binding arbitration in Honolulu, Hawaii pursuant to the administration by DPR, and in accordance with (aa) the Arbitration Rules, Procedures, and Protocols of DPR then in effect (or the commercial arbitration rules then in effect of its successor) ("Arbitration Rules"), (bb) HRS Chapter 658A

("Chapter 658A") or the Federal Arbitration Act, 9 U.S.C. § 1 et seq., if applicable ("FAA"), and (cc) the procedures of this Section 28.2 (Dispute Resolution Procedures). To the extent that these procedures are permissible under Chapter 658A if the Parties agree to waive or vary the terms of the applicable Arbitration Rules and/or Chapter 658A and/or the FAA, the Parties do hereby so agree without prejudice to any application for judicial relief authorized by Chapter 658A. Capitalized and otherwise undefined terms in this Article 28 (Dispute Resolution) shall have the meaning set forth in the Arbitration Rules. The final award and order of the arbitrator(s) is binding upon the Parties and judgment upon the final award and order rendered may be entered in any court of competent jurisdiction.

- (C) Initiation of Arbitration. A Party shall initiate arbitration by giving to the other Party its written notice of its demand for arbitration, which notice shall include a detailed statement of its contentions of law and fact and remedies sought, and submitting such notice to DPR in accordance with the applicable Arbitration Rules. No such notice shall be valid or effective to the extent that any claim(s) set forth therein would be barred by the applicable statute of limitations or laches. Such notice shall be signed by the president, vice president or authorized delegate of the Party giving and submitting the notice and be delivered to the president of the other Party. The other Party shall file a detailed answering statement within 20 Days of receipt of the notice of the demand for arbitration.
- (D) Procedures for Appointing Arbitrator(s). The Parties hereby agree that arbitrator(s) shall be appointed according to the following procedure, notwithstanding any contrary or inconsistent provision of the Arbitration Rules.
- (1) Single Arbitrator. Within 20 Days of the receipt by the initiating Party of the detailed answering statement, the Parties shall attempt to agree on a single arbitrator with apparent and substantial experience, knowledge or expertise with respect to electric utility practices and procedures or the design, construction and operation of electric

generating facilities, photovoltaic farms or photovoltaic energy projects.

- (2) Three-Arbitrator Panel. Should the Parties fail to agree on a single arbitrator within such 20-Day period, each Party may appoint one arbitrator within 14 Days thereafter pursuant to the Arbitration Rules. If any Party does not appoint an arbitrator within that 14-Day period, or if the arbitrator appointed by such Party is disqualified for any reason, DPR shall appoint one or both of the arbitrator(s), as appropriate. Within 20 Days of the appointment of the second arbitrator, the two appointed arbitrators shall attempt to agree upon the appointment of a third arbitrator to serve as the chair of the panel of arbitrators. If the two appointed arbitrators fail to agree upon the appointment of the third arbitrator within this 20-Day period or if the third arbitrator appointed by the two arbitrators is disqualified for any reason, DPR shall appoint the third arbitrator. In the event of any selection of an arbitrator by DPR, the Parties hereby request that DPR give preference to the residents of the State of Hawaii. The arbitration panel shall determine all matters by majority vote.
- (3) Disclosures and Objections. The Parties shall have 48 hours from the receipt of notice of the appointment of an arbitrator to request disclosures and shall have 48 hours from receipt of the notice of appointment of the arbitrator or the arbitrator's last disclosure in which to assert an objection to the arbitrator's appointment.
- (E) Conduct of the Arbitration by the Arbitrator(s). Each arbitrator appointed pursuant to Section 28.2(D) (Procedures for Appointing Arbitrator(s)) shall swear to conduct such arbitration in accordance with (i) the terms of Article 28 (Dispute Resolution), (ii) the applicable Arbitration Rules, (iii) the laws of the State of Hawaii, (iv) the most recent Guidelines for Arbitrator Reimbursement established by the Financial Industry Regulatory Authority (or its successor) and (v) the Code of Ethics of the American Arbitration Association ("Code of Ethics"), provided that, notwithstanding anything in the Code of Ethics to the contrary, and regardless of whether appointed by a

single Party, each arbitrator shall (aa) be neutral, impartial and not predisposed to favor either Party and (bb) subsequent to appointment as an arbitrator, refrain from any and all ex parte communication with any Party.

(F) Arbitration Procedures.

- (1) The Parties shall have 120 Days from the date of the appointment of the single agreed arbitrator or the third arbitrator of the arbitration panel to perform discovery and present evidence and argument to the arbitrator(s), including, without limitation, all evidence and argument with respect to the costs of arbitration, attorney fees and costs, and all other matters to be considered for inclusion in the final award and order issued by the arbitrator(s).
- (2) During this 120-Day period, the arbitrator(s) shall conduct a hearing to receive and consider all such evidence submitted by the Parties as the arbitrator(s) may choose to consider. The arbitrator(s) may limit the amount of time allotted to each Party presentation of evidence and argument at the hearing, provided that such time be allocated equally to each Party. Subject to the foregoing sentence, the arbitrator(s) shall have complete discretion over the mode and order of prehearing discovery, the issuance of subpoenas and subpoenas duces tecum for the production of witnesses and/or evidence prior to and at the hearing, the presentment of evidence, and the conduct of the hearing. The arbitrator(s) shall not consider any evidence or argument not presented during this 120-Day period. This 120-Day period may be extended for sufficient cause by the arbitrator(s) or by agreement of the Parties.
- (3) The arbitrator(s) shall use all reasonable means to expedite discovery and may sanction a Party's non-compliance with obligations hereunder to produce evidence or witnesses prior to the hearing, at depositions or at the hearing. Each Party shall require and warrant that (i) all records of such Party, its partners, members, or affiliates pertaining to the negotiation, administration, and enforcement of this Agreement shall be maintained

in the possession of such Party for no fewer than seven (7) years, and (ii) each of its officers, employees, consultants, general partners, or managing members shall submit to the jurisdiction of the arbitrator(s) and shall comply with all orders and subpoenas issued with respect to the production of witnesses or evidence at and/or prior to the hearing. All such evidence and witnesses shall be made available at such Party's sole expense in Honolulu, Hawaii.

- (4) Upon the conclusion of such 120-Day period, the arbitrators shall have 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 award and order. The final award and order shall also state which Party prevailed or that neither Party prevailed over the other.
- (5) The costs of arbitration (i.e., the fees and expenses charged by the arbitrator(s) and DPR), the reasonable attorney fees of the Party that prevailed (but not including any attorney fees attributable to or charged by in-house counsel), and the reasonable costs of the Party that prevailed to the extent that such costs are recoverable pursuant to HRS § 607-9 (but not including testifying or nontestifying expert witness or consultant fees), shall be determined by the arbitrator(s) and awarded to the prevailing Party in the final award and order issued by the arbitrator(s); provided, however, that the arbitrator(s) shall have no power to award any costs of arbitration, attorney fees or costs incurred more than thirty (30) Days prior the date of the notice and demand for arbitration. In the event neither Party prevails, the Parties shall each pay fifty percent (50%) of the cost of the arbitration (i.e., the fees and expenses charged by the arbitrator(s) and DPR) and shall otherwise each bear their own arbitration costs, attorney fees, costs and all other expenses of arbitration, including without limitation their own testifying or nontestifying expert witness and consultant fees.

- (6) To the extent the final award and order directs either Party to pay any amounts to the other Party, including, monetary damages, costs of arbitration, or reasonable attorney fees and costs:
- (a) if neither Party seeks judicial review of the final award and order, payment shall be made within ninety-five (95) days after the final award and order is issued;
- (b) if either Party seeks judicial review of the final award and order, payment shall be made within thirty (30) days after the available judicial review is exhausted.

(G) Authority of the Arbitrators. Notwithstanding anything herein or in the Arbitration Rules to the contrary, the authority of the arbitrator(s) in rendering the final award and order is limited to the interpretation and/or application of the terms of this Agreement and to ordering any remedy allowed by this Agreement. The arbitrator(s) shall have no power to change any term or condition of this Agreement, deprive any Party of a remedy expressly provided hereunder, or provide any right or remedy that has been excluded hereunder. Notwithstanding anything herein or in the Arbitration Rules to the contrary, any Party who contends that the final award and order of the arbitrator(s) was in excess of the authority of the arbitrator(s) as set forth herein may seek judicial relief in the Circuit Court of the State of Hawaii for the circuit in which the arbitration hearing was held, provided that such judicial proceeding is initiated within 30 Days of the final award and order and not otherwise.

28.3 Exclusion. The provisions of this Article 28 (Dispute Resolution) shall not apply to any disputes within the authority of an Independent Evaluator under Article 23 (Process for Addressing Revisions to Performance Standards).

ARTICLE 29
MISCELLANEOUS

29.1 Amendments. Any amendment or modification of this Agreement or any part hereof shall not be valid unless in writing and signed via manual signature by the Parties. Any waiver hereunder shall not be valid unless in writing and signed via manual signature by the Party against whom waiver is

asserted. Notwithstanding the foregoing, administrative changes mutually agreed by Company and Seller in writing, such as changes to settings shown in the Single-Line Drawing (Attachment E) and the Relay List and Trip Scheme (Attachment F) and changes to numerical values of Performance Standards in Section 3 (Performance Standards) of Attachment B (Facility owned by Company) shall not be considered amendments to this Agreement requiring PUC approval.

29.2 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.

29.3 Notices.

(A) All notices, consents and waivers under this Agreement shall be in writing and will be deemed to have been duly given when (i) delivered by hand, (ii) sent by facsimile (with printed confirmation of transmission), (iii) sent by certified mail, return receipt requested, or (iv) when received by the addressee, if sent by a nationally recognized overnight delivery service (receipt requested), in each case to the appropriate addresses and facsimile numbers set forth below (or to such other addresses and facsimile numbers as a Party may designate by notice to the other Party):

Company:

By Mail:

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

Delivered By Hand or Overnight Delivery:

Hawaiian Electric Company, Inc.
Central Pacific Plaza
220 South King Street, Suite 2100
Honolulu, Hawaii 96813
Attn: Manager, Renewable Acquisition

By facsimile:

Hawaiian Electric Company, Inc.
Attn: Manager Renewable Acquisition
(808) 203-1470

With a copy to:

By Mail:

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

By facsimile:

Hawaiian Electric Company, Inc.
Legal Department
(808) 543-7302

Seller: The contact information listed in Attachment A (Description of Generation and Conversion Facility) hereto.

- (B) 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.
- (C) Any notice delivered by facsimile shall 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 or the expiration of the fifth Day after the date of mailing.
- (D) The Parties may agree in writing upon additional means of providing notices, consents and waivers under this Agreement in order to adapt to changing technology and commercial practices.

- 29.4 Effect of Section and Attachment Headings. The Table of Contents and paragraph headings of the various sections and attachments have been inserted in this Agreement as a matter of convenience for reference only and shall not modify, define or limit any of the terms or provisions hereof and

shall not be used in the interpretation of any term or provision of this Agreement.

- 29.5 Non-Waiver. Except as otherwise provided in this Agreement, no delay or forbearance of Company or 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.
- 29.6 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. Seller does not hereby dedicate any part of Facility to serve Company, Company's customers or the public.
- 29.7 Entire Agreement. This Agreement (together with any confidentiality or non-disclosure agreements entered into by the Parties during the process of negotiating this Agreement and/or discussing the specifications of the Facility) constitutes the entire agreement between the Parties relating to the subject matter hereof, superseding all prior agreements, understandings or undertakings, oral or written. Each of the Parties confirms that in entering into this Agreement, it has not relied on any statement, warranty or other representations (other than those set out in this Agreement) made or information supplied by or on behalf of the other Party.
- 29.8 Governing Law, Jurisdiction and Venue. Interpretation and performance of this Agreement shall be in accordance with, and shall be controlled by, the laws of the State of Hawaii, other than the laws thereof that would require reference to the laws of any other jurisdiction. By entering into this Agreement, Seller submits itself to the personal jurisdiction of the courts of the State of Hawaii and agrees that the proper venue for any civil action arising out of or relating to this Agreement shall be Honolulu, Hawaii.
- 29.9 Limitations. Nothing in this Agreement shall limit Company's ability to exercise its rights as specified in 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.

- 29.10 Further Assurances. If either Party determines in its reasonable discretion that any further instruments, assurances or other things are necessary or desirable to carry out the terms of this Agreement, the other Party will execute and deliver all such instruments and assurances and do all things reasonably necessary or desirable to carry out the terms of this Agreement.
- 29.11 Facsimile Signatures and Counterparts. This Agreement may be executed and signatures transmitted electronically via the Internet or facsimile. This Agreement may be executed in counterparts, each of which shall be deemed an original, and all of which shall together constitute one and the same instrument binding all Parties notwithstanding that all of the Parties are not signatories to the same counterparts. For all purposes, duplicate unexecuted and unacknowledged pages of the counterparts may be discarded and the remaining pages assembled as one document.
- 29.12 Definitions. Capitalized terms used in this Agreement and not otherwise defined in the context in which they first appear are defined in the Definitions Section.
- 29.13 Severability. If any term or provision of this Agreement, or the application thereof to any person, entity or circumstances is to any extent invalid or unenforceable, the remainder of this Agreement, or the application of such term or provision to persons, entities or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law, and the Parties will take all commercially reasonable steps, including modification of the Agreement, to preserve the economic "benefit of the bargain" to both Parties notwithstanding any such aforesaid invalidity or unenforceability.
- 29.14 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 Article 28 (Dispute Resolution) of this Agreement.
- 29.15 Environmental Credits and RPS. To the extent not prohibited by law, Company shall have the sole and exclusive right to use the electric energy purchased hereunder to meet RPS and

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

29.16 Attachments. Each Attachment constitutes an essential and necessary part of this Agreement.

29.17 Proprietary Rights. 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, trademark, copyright or trade secret ("Proprietary Rights"). Seller agrees to indemnify, defend and hold harmless the Indemnified Company 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 Indemnified Company Party for infringement of Third Party Proprietary Rights arising out of Seller's performance under this Agreement, including but not limited to patent infringement due to the use of technical features of the Facility to meet the Performance Standards specified in the Agreement.

29.18 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.

29.19 Computation of Time. In computing any period of time prescribed or allowed under this Agreement, the Day of the act, event or default from which the designated period of time begins to run shall not be included. If the last Day of the period so computed is not a Business Day, then the period shall run until the end of the next Day which is a Business Day.

29.20 PUC Approval.

- (A) PUC Approval Order. The term "PUC Approval Order" means an order from the PUC that does not contain terms and conditions deemed to be unacceptable by Company, and is in a form deemed to be reasonable by Company, in its sole, but nonarbitrary, discretion, ordering that:
- (1) this Agreement is approved without modification;
 - (2) Company is authorized to include the purchased energy costs (and related revenue taxes) that Company incurs under this Agreement in Company's Energy Cost Adjustment Clause, to the extent such costs are not included in base rates for the Term;
 - (3) the purchased energy costs to be incurred by Company as a result of this Agreement are reasonable; and
 - (4) Company's purchased power arrangements under this Agreement, pursuant to which Company will purchase energy on an As-Available Energy basis from Seller, are prudent and in the public interest.
- (B) Non-appealable PUC Approval Order. The term "Non-appealable PUC Approval Order" means a PUC Approval Order (i) that is not subject to appeal to any Circuit Court of the State of Hawaii, Intermediate Court of Appeals of the State of Hawaii, or the Supreme Court of the State of Hawaii, because the period permitted for such an appeal (the "Appeal Period") has passed without the filing of notice of such an appeal, or (ii) that was affirmed on appeal to any Circuit Court of the State of Hawaii, Intermediate Court of Appeals of the State of Hawaii, or 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.
- (C) Company's Written Statement. Not later than thirty (30) Days after the issuance of a PUC Approval Order, Company shall provide Seller with a copy of such PUC Approval Order together with a written statement as to whether the conditions set forth in Section 29.20(A)

(PUC Approval Order) and Section 29.20(B) (Non-appealable PUC Approval Order) have been satisfied. If Company's written statement declares that the conditions set forth in Section 29.20(A) (PUC Approval Order) have been satisfied, the date of the issuance of the PUC Approval Order shall be the "PUC Approval Order Date".

(D) Non-appealable PUC Approval Order Date. As used in this Agreement, the term "Non-appealable PUC Approval Order Date" shall be defined as follows:

- (1) If Company provides the written statement referred to in Section 29.20(C) (Company's Written Statement) to the effect that the conditions referred to in Section 29.20(A) (PUC Approval Order) and Section 29.20(B) (Non-appealable PUC Approval Order) have been satisfied, the Non-appealable PUC Approval Order Date shall be the date of the issuance of the PUC Approval Order; or
- (2) If Company provides the written statement referred to in Section 29.20 (C) (Company's Written Statement) to the effect that only the condition referred to in Section 29.20(A) (PUC Approval Order) has been satisfied, the Non-appealable PUC Approval Order Date shall be as follows:
 - (a) If a PUC Approval Order is issued and is not made subject to a motion for reconsideration filed with the PUC or an appeal, the Non-appealable PUC Approval Order Date shall be the date one Day after the expiration of Appeal Period following the issuance of the PUC Approval Order;
 - (b) If the PUC Approval Order became subject to a motion for reconsideration, and the motion for reconsideration is denied or the PUC Approval Order is affirmed after reconsideration, and such order is not made subject to an appeal, the Non-appealable PUC Approval Order Date shall be deemed to be the date one Day after the expiration of the Appeal Period following the order denying reconsideration of or affirming the PUC Approval Order; or

(c) If the PUC Approval Order, or an order denying reconsideration of the PUC Approval Order or affirming approval of the PUC Approval Order after reconsideration, becomes subject to an appeal, then the Non-appealable PUC Approval Order Date shall be the date upon which the PUC Approval Order becomes a non-appealable order within the meaning of the definition of a Non-Appealable PUC Approval Order in Section 29.20(B) (Non-appealable PUC Approval Order).

29.21 Change in Standard System or Organization.

- (A) Consistent With Original Intent. If, during the Term, any standard, system or organization referenced in this Agreement should be modified or replaced in the normal course of events, such modification or replacement shall from that point in time be used in this Agreement in place of the original standard, system or organization, but only to the extent such modification or replacement is generally consistent with the original spirit and intent of this Agreement.
- (B) Eliminated or Inconsistent With Original Intent. If, during the Term, any standard system or organization referenced in this Agreement should be eliminated or cease to exist, or is modified or replaced and such modification or replacement is inconsistent with the original spirit and intent of this Agreement, then in such event the Parties will negotiate in good faith to amend this Agreement to a standard, system or organization that would be consistent with the original spirit and intent of this Agreement.

29.22 No Third Party Beneficiaries. Nothing expressed or referred to in this Agreement will be construed to give any person or entity other than the Parties any legal or equitable right, remedy, or claim under or with respect to this Agreement or any provision of this Agreement. This Agreement and all of its provisions and conditions are for the sole and exclusive benefit of the Parties and their successors and permitted assigns.

29.23 Hawaii General Excise Tax. Seller shall, when making payments to Company under this Agreement, pay such

additional amount as may be necessary to reimburse Company for the Hawaii general excise tax on gross income and all other similar taxes imposed on Company by any Governmental Authority with respect to payments in the nature of gross receipts tax, sales tax, privilege tax or the like (including receipt of any payment made under this Section 29.23 (Hawaii General Excise Tax)), but excluding federal or state net income taxes. By way of example and not limitation, as of the Execution Date, all payments subject to the 4.5% Hawaii general excise tax on Oahu would include an additional 4.712% so that the underlying payment will be net of such tax liability.

29.24 Survival of Obligations. The rights and obligations that are intended to survive a termination of this Agreement are all of those rights and obligations that this Agreement expressly provides shall survive any such termination and those that arise from Seller's or Company's covenants, agreements, representations, and warranties applicable to, or to be performed, at or during any time prior to or as a result of the termination of this Agreement, including, without limitation:

- (A) The obligation to pay Daily Delay Damages under Section 13.4 (Damages and Termination);
- (B) The obligation to pay Termination Damages under Article 16 (Damages in the Event of Termination by Company);
- (C) The indemnity obligations under Article 17 (Indemnification) and Section 29.17 (Proprietary Rights);
- (D) The dispute resolution provisions of Article 28 (Dispute Resolution);
- (E) Section 29.3 (Notices), Section 29.5 (Non-Waiver), Section 29.8 (Governing Law, Jurisdiction and Venue), Section 29.9 (Limitations), Section 29.13 (Severability), Section 29.14 (Settlement of Disputes), Section 29.15 (Environmental Credits and RPS), Section 29.17 (Proprietary Rights), Section 29.19 (Computation of Time), Section 29.22 (No Third Party Beneficiaries), Section 29.23 (Hawaii General Excise Tax), Section 29.24 (Survival of Obligations), and Section 7 (Land

Restoration) of Attachment G (Company-Owned Interconnection Facilities); and

- (F) Seller's obligations under Section 3 of Attachment G (Company-Owned Interconnection Facilities) to pay interconnection costs and Section 4 of Attachment G (Company-Owned Interconnection Facilities) to pay operation and maintenance costs incurred up to the date of termination of the Agreement.

29.25 Certain Rules of Construction. For purposes of this Agreement:

- (A) "Including" and any other words or phrases of inclusion will not be construed as terms of limitation, so that references to "included" matters will be regarded as non-exclusive, non-characterizing illustrations.
- (B) "Copy" or "copies" means that the copy or copies of the material to which it relates are true, correct and complete.
- (C) When "Article," "Section," "Schedule," or "Attachment" is capitalized in this Agreement, it refers to an article, section, schedule or attachment to this Agreement.
- (D) "Will" has the same meaning as "shall" and, thus, connotes an obligation and an imperative and not a futurity.
- (E) Titles and captions of or in this Agreement, the cover sheet and table of contents of this Agreement, and language in parenthesis following Section references are inserted only as a matter of convenience and in no way define, limit, extend or describe the scope of this Agreement or the intent of any of its provisions.
- (F) Whenever the context requires, the singular includes the plural and plural includes the singular, and the gender of any pronoun includes the other genders.
- (G) Any reference to any statutory provision includes each successor provision and all applicable Laws as to that provision.

29.26 N-1-1 Contingency.

- (A) Company is in the process of completing an additional interconnection requirements study related to Seller's Facility as well as other renewable power facilities, as more fully described in this Section 29.26(A) (N-1-1 Contingency). In normal operating conditions, the Wahiawa region is served by a 138 kV transmission loop system. However, when any part of the Waiau-to-Wahiawa 138 kV line or the Kahe-to-Wahiawa 138 kV line is out of service, the Wahiawa region remains connected in a radial condition only. As a result, in a contingency event such as a fault that causes the outage of this remaining 138 kV radial connection (i.e., "N-1-1 contingency"), all proposed generation that would be stranded within the Wahiawa region could be temporarily islanded with a very high generation-to-load ratio until the generation is disconnected. The possible overvoltage impacts of this N-1-1 contingency is a significant concern that must be evaluated with detailed PSCAD analyses that can precisely represent the behavior of multiple projects connected at the same time (the "Additional IRS"). The Additional IRS has not been completed as of the Execution Date.
- (B) The Additional IRS may identify certain mitigation measures necessary to alleviate overvoltage magnitude and duration, such as very fast trip inverter settings, load banks to dampen the overvoltage, or other solutions to be determined (the "Mitigating Measures"). Implementation of the Mitigating Measures may allow Seller's Facility and other renewable power facilities to operate when either the Waiau-to-Wahiawa 138 kV line or Kahe-to-Wahiawa 138 kV line is out of service, including during scheduled outages for maintenance (i.e., "the N-1-1 contingency"). If Mitigating Measures are not put in place, Company anticipates that, through the year 2020, it will need to substantially curtail, for durations longer than Company's regular maintenance outages, both Seller's Facility and other renewable power facilities connecting to the Wahiawa Substation for planned maintenance upgrades to the Waiau-to-Wahiawa 138 kV and Kahe-to-Wahiawa 138 kV transmission lines including, but not limited to, structure, conductor and shield wire replacements ("Wahiawa 138 kV Maintenance"). The Wahiawa 138 kV Maintenance is needed due to the age

of the Waiau-to-Wahiawa 138 kV and Kahe-to-Wahiawa 138 kV transmission lines. Company has initiated the Wahiawa 138 kV Maintenance, and expects to complete the Wahiawa 138 kV Maintenance by the end of the year 2020.

- (C) Once the Additional IRS is completed, Company shall (1) conclude if Mitigation Measures are necessary; and if so (2) determine if there are any viable Mitigating Measures for Company to pursue. Company shall retain sole discretion to determine if it will pursue such Mitigating Measures. If Company determines it will pursue a Mitigating Measure(s), Company shall, as appropriate, apply to the PUC for approval to commit capital funds and/or seek recovery of the costs for such Mitigating Measure(s) through Company's rates or other cost recovery mechanisms. If Company determines that Mitigation Measures are necessary and that a Mitigating Measure(s) exists, and further, if the PUC approves Company's commitment of funds and/or recovery for such Mitigating Measure(s), then Company shall implement such Mitigating Measure(s) at its expense.
- (D) Company agrees to provide Seller a yearly maintenance schedule by January 1 of each calendar year (the "Company's Maintenance Schedule") setting forth the anticipated Wahiawa 138 kV Maintenance for such calendar year as well as any other planned maintenance on the Company System which may affect Seller's Facility during such calendar year and which is known as of January 1 of such year (collectively, the "Planned Maintenance"). Only maintenance included on the Company's Maintenance Schedule will be considered Planned Maintenance for purposes of this Section 29.26 (N-1-1 Contingency). Company shall only be obligated to provide the Company's Maintenance Schedule to Seller for the period between the Commercial Operations Date and the completion of the Wahiawa 138 kV Maintenance and not for the entire Term of this Agreement.
- (E) Company shall place a cap of seventy (70) Days, not to exceed fourteen (14) Days in any one-calendar year period, on uncompensated Planned Maintenance and Wahiawa 138 kV Maintenance curtailment under the Agreement until the Wahiawa 138 kV Maintenance is complete ("Maintenance

Cap"), which shall apply to Planned Maintenance and Wahiawa 138 kV Maintenance that occurs during the hours of 7:00 a.m. and 7:00 p.m. HST for such period. Company shall endeavor to complete all other necessary maintenance during such time period coincidentally with the Wahiawa 138 kV Maintenance in order to limit maintenance curtailment for the Facility. All curtailment due to Planned Maintenance or Wahiawa 138 kV Maintenance between the hours of 7:00 a.m. and 7:00 p.m. HST above the Maintenance Cap will be treated as a Compensable Curtailment Event. There shall be no Maintenance Cap under the Agreement after the completion of the Wahiawa 138 kV Maintenance. The Maintenance Cap shall only apply to Planned Maintenance and Wahiawa 138 kV Maintenance and only Planned Maintenance and Wahiawa 138 kV Maintenance above such Maintenance Cap will be compensated. Any other maintenance shall be uncompensated. Further, the Maintenance Cap shall not apply to Planned Maintenance or Wahiawa 138 kV Maintenance that occurs between the hours of 7:01 p.m. and 6:59 a.m. HST and shall be uncompensated. If curtailment for Planned Maintenance or Wahiawa 138 kV Maintenance has a duration of four (4) hours or less, such curtailment shall be considered a half-Day curtailment for purposes of calculating curtailment for the Maintenance Cap. For the avoidance of doubt, the following are examples of curtailment that shall not be compensated and shall not be considered in calculating the maintenance cap: (1) due to switching to implement a holdoff (which may require the Facility to shut down for periods of 30 to 60 minutes in the morning and/or evening to facilitate switching of circuits) unless such work is associated with the Planned Maintenance or the Wahiawa 138 kV Maintenance, (2) maintenance needed due to conditions discovered during inspection or primary troublemen call-outs not identified on the Company's Maintenance Schedule and not associated with the Planned Maintenance or the Wahiawa 138 kV Maintenance, and (3) emergency maintenance. Company shall retain sole discretion for determining when the Wahiawa 138 kV Maintenance is complete.

- 29.27 Licensed Contractor Work. The Parties acknowledge and agree that Seller does not by itself or through others offer to

undertake, or hold itself out as being able to undertake, and does not undertake, to construct, alter, repair, add to, subtract from, improve, move, wreck, or demolish any building, highway, road, railroad, excavation, or other structure, project, development, or improvement, or do any part thereof, including the erection of scaffolding or other structures or works in connection therewith (collectively, "Licensed Contractor Work"). To the extent that this Agreement requires Seller to complete any Licensed Contractor Work, Seller shall cause such Licensed Contractor Work to be performed by a contractor with a license obtained under and in compliance with Chapter 444 of the Hawaii Revised Statutes.

[Signatures for PPA for Renewable As-Available Energy appear on the following page]

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

HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation

Dan. Giovanni 12/3/14

By _____
Name: Dan Giovanni
Its: Senior Vice President, Operations

By *Shelee Kimura*
Name: Shelee Kimura
Its: Vice President, Corporate Planning
& Business Development

("Company")

WAIAWA PV, LLC

By: WAIAWA PV HOLDINGS, LLC, a Delaware limited liability company, its Member

By _____
Name:
Its:

("Seller")

SIGNATURE PAGE

EXECUTION VERSION

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

HAWAIIAN ELECTRIC COMPANY, INC., a Hawaii corporation

By _____

Name: Dan Giovanni
Its: Senior Vice President, Operations

By _____

Name: Shelee Kimura
Its: Vice President, Corporate Planning
& Business Development

("Company")

WAIAWA PV, LLC

By: **WAIAWA PV HOLDINGS, LLC, a Delaware limited liability company, its Member**

By J. Lutens
Name: Jennifer Lutens
Its: Assistant Secretary

("Seller")

SIGNATURE PAGE

EXECUTION VERSION

ATTACHMENT A
DESCRIPTION OF GENERATION AND CONVERSION FACILITY

1. Name of Facility: Waiawa PV
 - (a) Location: Waipio, Oahu (TMK No. (1) 9-5-003-004)
 - (b) Telephone number (for system emergencies):
(808) 294-5613/5614
 - (c) Facsimile number: (808) 441-4604
 - (d) Contact Information for notices pursuant to Section 29.3 (Notices) of the Agreement:
Mailing Address:
c/o First Wind Energy, LLC
179 Lincoln Street, Suite 500
Boston, MA 02111
- Address for Delivery by Hand or Overnight Delivery:
c/o First Wind Energy
1099 Alakea Street, Suite 2440
Honolulu, HI 96813
- Facsimile number: (808) 441-4604
2. Owner (If different from Seller): N/A
If Seller is not the owner, Seller shall provide 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 which shall be attached hereto as Exhibit A-1 (Good Standing Certificates).
3. Operator: Waiawa PV, LLC
4. Name of person to whom payments are to be made:
Waiawa PV, LLC

(a) Mailing address:

c/o First Wind Energy, LLC
179 Lincoln Street, Suite 500
Boston, MA 02111

(b) Hawaii General Excise Tax License number: W86791979-01

5. Equipment:

(a) Type of facility and conversion equipment:

Small power production facility designated as a Qualifying Facility and/or exempt wholesale generator pursuant to the Public Utility Holding Company Act of 2005 and as defined in Section 366.1 of the regulations of the Federal Energy Regulatory Commission that produces electric energy using solar photovoltaic modules.

(b) Design and capacity

Total Facility Capacity ("Contract Capacity"):
45,900 kW

Total Number of Generators:

Thirty-three (33) ABB Ultra 1560 kVA inverters

Description of Equipment:

ABB model Ultra-1500-TL-OUTD high-efficiency, utility-scale solar power inverter rated at 1,560 kVA. The inverter shall be mounted on a skid and will convert the photovoltaic energy generated by solar panels from DC to AC at 690 V. The AC energy will be stepped up to 34.5 kV by an adjacent pad mount transformer, gathered and transmitted to the solar collector substation, stepped up to 138 kV and delivered to the Point of Interconnection with the Company-Owned Interconnection Facilities.

Individual unit:

| | kW | kVAR Consumed | kVAR Produced |
|------------------|------------------|--|------------------|
| <u>Full load</u> | 1,560 kW | 680.0 | 680.0 |
| <u>Startup</u> | 4.0 kW 0.3 kW | 4.1 (cooling pumps on) 0.2 (off-line standby) | |

Generator:

Type DC/AC Inverter
Rated Power 1,560 kW
Voltage 690 V, 3 phase
Frequency 60 HZ
Class of Protection NEMA 4X
Number of Poles N/A
Rated Speed N/A
Rated Current 2,880 A
Power Factor Controllable between
0.90 per unit leading to
0.90 per unit lagging

(c) Single or 3 phase: 3 phase

(d) Name of manufacturer:

Solar Modules: Yingli or equivalent

Inverters: ABB

(e) The "Allowed Capacity" of this Agreement shall be the lower of (i) Contract Capacity or (ii) the net nameplate capacity (net for export) of the Facility installed by the later of (x) the Commercial Operations Date or (y) In-Service Date.

(f) Seller may propose revisions to this Section 5 (Equipment) of Attachment A (Description of Generation and Conversion Facility) ("Section 5") for Company's approval prior to commencement of construction, provided, however, that (i) no such

revision to this Section 5 shall change the type of Facility or conversion equipment deployed at the Facility from a solar energy conversion facility using photovoltaic equipment; (ii) Seller shall be in compliance with all other terms and conditions of this Agreement; and (iii) such revision(s) shall not change the characteristics of the Facility equipment or the specifications used in the IRS. Any revision to this Section 5 complying with items (i) through (iii) above shall be subject to Company's prior approval, which approval shall not be unreasonably withheld. If Seller's proposed revision(s) to this Section 5 otherwise satisfies items (i) and (ii) above but not item (iii) such that Company, in its reasonable discretion, determines that a re-study or revision to all or any part of the IRS is required to accommodate Seller's proposed revision(s), Company may, in its sole and absolute discretion, conditionally approve such revision(s) subject to a satisfactory re-study or revision to the IRS and Seller's payment and continued obligation to be liable and responsible for all costs and expenses of re-studying or revising such portions of the IRS and for modifying and paying for all costs and expenses of modification to the Facility, the Company-Owned Interconnection Facilities based on the results of the re-studies or revisions to the IRS.

Seller understands and acknowledges that Company's review and approval of Seller's proposed revisions to this Section 5 and any necessary re-studies or revisions to the IRS shall be subject to Company's then-existing time and personnel constraints. Company agrees to use commercially reasonable efforts, under such time and personnel constraints, to complete any necessary reviews, approvals and/or re-studies or revisions to the IRS.

Any delay in completing, or failure by Seller to meet, any subsequent Seller Conditions Precedent under Section 13.8 (Company Milestones) and Attachment K-1 (Company Milestones and Seller's Conditions Precedent), or any delay or failure by Company to meet the Company Milestones under Section 13.8 (Company Milestones) and Attachment K-1 (Company Milestones and Seller's Conditions Precedent) as a result any revision pursuant to this

Section 5 by Seller (whether requiring a re-study or revision to the IRS or not) shall be borne entirely by Seller and Company shall not be responsible or liable for any delay or failure to meet any such Conditions Precedent by Seller or Company Milestones by Company.

6. Insurance carrier(s): William Gallagher Associates
7. If Seller is not the operator, Seller shall provide a copy of the agreement between Seller and the operator which requires the operator to operate the Facility and which establishes the scope of operations by the operator and the respective rights of Seller and the operator with respect to the sale of electric energy from Facility no later than the Initial In-Service Date. In addition, 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 no later than the Initial In-Service Date.
8. Seller shall provide a certified copy of a certificate warranting that Seller is a corporation, partnership or limited liability company in good standing with the Hawaii Department of Commerce and Consumer Affairs which shall be attached hereto as Exhibit A-1 (Good Standing Certificates).
9. Seller, owner and operator shall provide Company a certificate and/or description of their ownership structures which shall be attached hereto as Exhibit A-2 (Ownership Structure of Seller, Owner and/or Operator).
10. In the event of a change in ownership or identity of Seller, owner or operator, such entity shall provide within 30 Days thereof, a certified copy of a new certificate and a revised ownership structure.

EXHIBIT A-1
GOOD STANDING CERTIFICATES

Delaware

PAGE 1

The First State

I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY "WAIWA PV, 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-FIFTH DAY OF NOVEMBER, A.D. 2014.

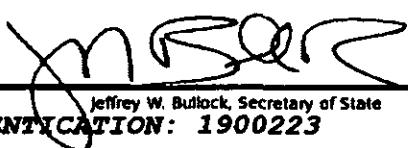
AND I DO HEREBY FURTHER CERTIFY THAT THE ANNUAL TAXES HAVE BEEN PAID TO DATE.

5297978 8300

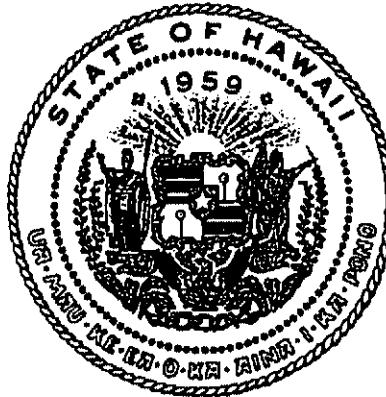
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You may verify this certificate online
at corp.delaware.gov/authver.shtml




Jeffrey W. Bullock, Secretary of State
AUTHENTICATION: 1900223

DATE: 11-25-14



Department of Commerce and Consumer Affairs

CERTIFICATE OF GOOD STANDING

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

WAIWA PV, LLC

organized under the laws of Delaware

was duly registered to do business in Hawaii as a foreign
limited liability company on 03/06/2013 , 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: November 25, 2014

A handwritten signature in black ink.

Director of Commerce and Consumer Affairs

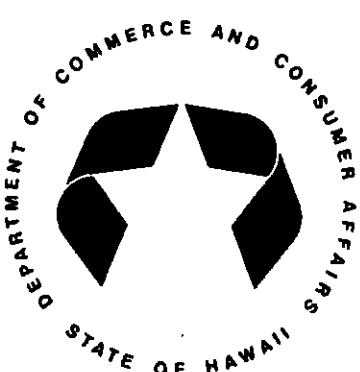
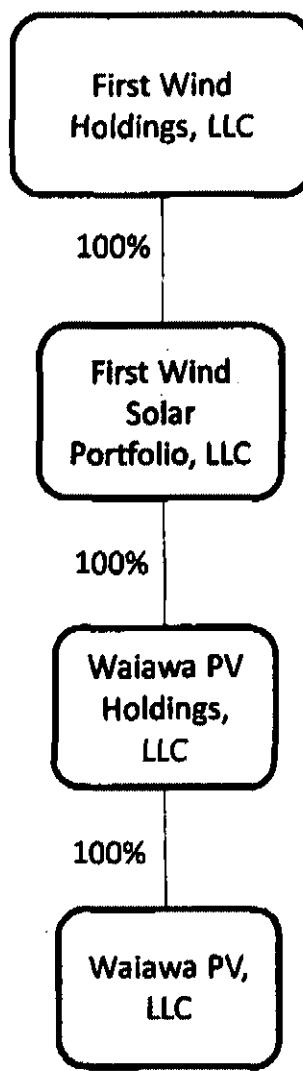


EXHIBIT A-2
OWNERSHIP STRUCTURE

Attachment A-2



Waiawa Solar Project

ATTACHMENT B
FACILITY OWNED BY SELLER

1. The Facility.

- (a) Single-Line Diagram, Relay List, Relay Settings and Trip Scheme. A preliminary single-line diagram (without the existing notes), relay list, relay settings, and trip scheme of the Facility shall, after Seller has obtained prior written consent from Company, be attached to this Agreement on the Execution Date as Attachment E (Single-Line Drawing) and Attachment F (Relay List and Trip Scheme). A final single-line drawing (with final notes), relay list and trip scheme of the Facility shall, after having obtained prior written consent from Company, be labeled "Final" Single-Line Drawing and "Final" Relay List and Trip Scheme and shall supersede Attachment E (Single-Line Drawing) and Attachment F (Relay List and Trip Scheme) to this Agreement and shall be made a part hereof within sixty (60) Days of the Commercial Operations Date. After this submission, no changes shall be made to the "Final" Single-Line Drawing and the "Final" Relay List and Trip Scheme without the prior written consent of Seller and Company. The single-line diagrams shall expressly identify the Point of Interconnection of Facility to the Company System. The Point of Interconnection (where Seller shall be responsible to maintain facilities on the Seller's side of the Point of Interconnection and Company shall be responsible to maintain the facilities on the Company-Owned side of the Point of Interconnection) shall be at the IPP interface cabinet. Seller agrees that no material changes or additions to the Facility as reflected in the final single-line diagram, relay list and trip scheme shall be made without Seller first having obtained prior written consent from Company. If any changes in or additions to the Facility, records and operating procedures are required by Company, Company shall specify such changes or additions to 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) Certain Specifications for the Facility.

- (i) Seller shall furnish, install, operate and maintain the Facility including breakers, relays, switches, synchronizing equipment, monitoring equipment and control and protective devices approved by Company as suitable for parallel operation of the Facility with the Company System, such approval not to be unreasonably withheld, conditioned, or delayed. The Facility shall be accessible at all times to authorized Company personnel.
- (ii) The Facility shall include:
- A. One (1) 128kbps Routed Network Service ("RNS") circuit to provide backup communications SCADA equipment. Seller is responsible for all installation and recurring charges that may be charged by the communications service provider to install, operate, and maintain the RNS circuit. Seller to pay for ancillary equipment necessary for installation of circuit.
 - B. High-voltage isolation equipment ("GPR Cabinet") at Seller's substation, if required by communications service provider. Communications circuits necessary for Company substation equipment to utilize GPR Cabinet, if such cabinet is required.
 - C. Fiber optic cabling outside of Company substation that is used to connect Seller substation to Company substation.
 - D. One (1) communications path between the Company Substation and the Seller substation to include:
 - (i) One (1) 3' x 5' demarcation handhole for communications cabling. Demarcation handhole to be installed directly outside of the fenceline enclosing Company's substation.

- (ii) Conduits containing communications cabling. Conduits shall terminate at demarcation handhole.
 - E. 138 kV 3" Al. common bus from companies switching station shall split into two (2) separate and independent feeds to Seller's substation. Each feed shall have a dedicated meter for Company's use and then to Seller's 138 kV breakers.
 - F. Control and monitoring facilities.
 - G. Transformers.
 - H. Generators (as described in Attachment A (Description of Generation and Conversion Facility) of this Agreement).
 - I. "Lockable" interface cabinets suitable for the installation of the Company-Owned Interconnection Facilities wiring located on the Site.
 - J. Relays and other protective devices.
- (iii) The Facility will comply with the following:
- A. Seller will install a 138 kV disconnect switch and all other items for its substation (relaying, control power transformers, high voltage circuit breaker). Downstream of the disconnect switch, a structure will be provided for metering transformers. Bus connection will be then made to 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. Two (2) sets of CT's on Seller's side shall be provided for Company use. Bushing CT's are to be 2000:5A ratio with C800 rating. From the high-voltage circuit breaker, another bus connection will be made to the power transformers with surge protection.

- B. Seller will provide within the Seller-Owned Interconnection Facilities a separate, fenced area with separate access for Company. Seller will provide all conduits, structures and accessories necessary for Company to install the Revenue Metering Packages. Seller will work with Company to determine an acceptable location and size of the fenced-in area. Seller shall provide an acceptable demarcation cabinet on its side of the fence where Seller and Company wiring will connect/interface.
- C. Seller shall ensure that the Seller-Owned Interconnection Facilities has a lockable control house for switching station relaying equipment. Seller shall select and install relaying equipment acceptable to Company, such acceptance not to be unreasonably withheld, conditioned, or delayed. At a minimum the relaying equipment will provide over and under frequency (81) negative phase sequence (46), under voltage (27), over voltage (59), ground over voltage (59G), over current functions (50/51) and direct transfer trip. Seller shall install protective relays that operate a lockout relay, which in turn will trip the main circuit breaker.
- D. The relay protection system will be configured to provide overpower protection to enable the Facility to comply with the Allowed Capacity limitation.
- E. Seller's equipment also shall provide at a minimum:
 - (i) Interface with Company's RTU and multimeters to provide telemetry of electrical quantities such as total Facility net MW, MVar, and power factor, voltages,

currents, and other quantities as identified by Company;

- (ii) Interface with Company's RTU to provide status for circuit breakers, reactive devices, switches (if monitored by SCADA), and other equipment as identified by the Company;
- (iii) [Reserved];
- (iv) Interface with Company's RTU to provide curtailment control to incrementally limit (curtail) Actual Output from the Facility and to incrementally remove the limit (curtail) of the Actual Output of the Facility. The incremental size will be determined as part of the Interconnection Requirements Study taking into account the size of the Facility; and
- (v) Interface with Company's RTU to provide telemetry of insulation measurements and calculated available power based on PV panel and/or inverter availability and status of PV panel and/or inverter availability.

F. If 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 the Facility and/or the Company-Owned Interconnection Facilities based on the revisions to the IRS.

- G. Seller shall submit cyber-security documentation describing the approach, methodology and design to protect data, controls and remote system access.
- (i) The design shall meet industry standards and best practices, including applicable NIST guidelines. Although the State of Hawaii is not currently under NERC jurisdiction and Company understands Seller cannot acknowledge the Facility to be CIP compliant, the system shall be designed with the criteria to meet applicable NERC CIP compliance requirements and identify areas that are not NERC CIP compliant. The cyber-security documentation shall include a block diagram of the control system with all external connections clearly described.
 - (ii) Seller shall meet all current cyber and physical security compliance requirements in order to identify potential security risks associated with Seller's implementation of cyber and physical security system, Seller shall provide such additional information as Company may reasonably request as part of a security assessment.
 - (iii) Seller shall provide a mitigation plan which describes how Seller's equipment will be protected from an internal or external AURORA event as described in the NERC Alert dated October 13, 2010. Furthermore, Seller shall be responsible for maintaining compliance with all future

Federal or State regulations and industry standards.

- (iv) Company shall be notified in advance when changes are required that will impact security.
- (c) Design Drawings, Bill of Materials, Relay Settings and Fuse Selection. Seller shall provide to Company for its review the design drawings, Bill of Material, relay settings and fuse selection for the Facility which interfaces with the Company-Owned Interconnection Facilities. 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 Company's and Seller's interconnected system. Seller shall provide the relay settings, fuse selection, and AC/DC Schematic Trip Scheme (part of design drawings) for the Facility to Company at least sixty (60) Days prior to the Acceptance Test. Company, at its option, may, with reasonable frequency, witness Seller's operation of control, synchronizing, and protection schemes and shall have the right to periodically re-specify the settings. Seller shall utilize relay settings prescribed by Company, which may be changed over time as Company System requirements change.
- (d) Disconnect Device. Seller shall provide a manually operated disconnect device which provides a visible break to separate the Facility from the Company System. Such disconnect device shall be lockable in the OPEN position and be readily accessible to Company personnel at all times.
- (e) Other Equipment. Seller shall install, own and maintain the infrastructure associated with the Revenue Metering Package, including but not limited to all enclosures (meter cabinets, meter pedestals, meter sockets, pull boxes, and junction boxes, along with their grounding/bonding connections), CT/PT mounting structures, conduits and ductlines, enclosure support structures, ground buses, pads, test switches, terminal blocks, isolation relays,

telephone surge suppressors, and analog phone lines (one per meter), subject to Company's review and approval.

- (f) Maintenance Plan. Seller shall develop a maintenance plan to maintain Seller-Owned Interconnection Facilities. The plan shall be submitted to Company for review and comment, and shall be finalized prior to energizing any of the Seller-Owned Interconnection Facilities. The plan shall include, at a minimum, the 138 kV Substation, the 138 kV distribution system, the control system and the protective relay system. Seller shall furnish to Company a copy of the maintenance records upon request.
- (g) Curtailment Control Interface.
- (i) Seller shall provide and maintain in good working order all equipment, computers and software associated with the control system (the "Curtailment Control Interface") necessary to interface the Facility curtailment controls with the Company System Operations Control Center for real power control of the Facility by the Company System Operator. The Curtailment Control Interface will be used to control the maximum level of the Actual Output from the Facility when required under this Attachment B (Facility Owned by Seller). The implementation of the Curtailment Control Interface will allow Company System Operator to initiate the curtailment, vary the level of curtailment, and remove the curtailment remotely from Company System Operations Control Center through control signals from Company's SCADA and EMS systems.
- (ii) Company shall review and provide prior written approval of the design for the Curtailment Control Interface to ensure compatibility with 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.

- (iii) The Curtailment Control Interface shall include, but not be limited to, a demarcation cabinet, ancillary equipment and software necessary for Seller to connect to Company's RTU, which is located in Company's control building within the Company-Owned Interconnection Facilities. This Company RTU shall provide the control signals to the Facility and send feedback status to the Company System Operations Control Center. The types of controls presently supported by Company's SCADA and EMS systems include fixed-length digital output controls, variable length digital output (pulse-width output) controls, and analog output (set point) controls.
- (iv) The Curtailment Control Interface shall also include provision for a feedback point from the Facility indicating when curtailment is in effect and the analog value of the curtailment MW limit.
- (v) Seller shall provide an analog input to the RTU for the MW output of the individual inverters, and an analog signal for the total MW output at the high side of Seller's substation.
- (vi) The Curtailment Control Interface shall provide for remote control of the real-power output of the Facility by Company at all times. If the Curtailment Control Interface is unavailable or disabled, the Facility shall not export electric energy to Company, unless Company, in its sole discretion, agrees to accept electric energy and Seller and Company agree on an alternate means of curtailment. Notwithstanding the foregoing, if Seller fails to provide such remote control features (whether temporary or throughout the Term) and fails to discontinue exporting electric energy to Company as required by this Section 1(g)(vi), then, notwithstanding any other provision of this Attachment B (Facility Owned by Seller), Company shall have the right to curtail the

entire Facility during those periods that such control features are not provided.

- (vii) The rate at which the Facility reduces Actual Output shall not exceed the ramp rate specified in Section 3(c) of Attachment B (Facility Owned by Seller). The Facility's Curtailment Control Interface will control the rate at which electric energy is reduced to achieve the curtailment limit. The Facility will respond to the curtailment request upon receipt, without intentional delay, and at a minimum rate of 0.5 MW/min.
 - (viii) The Curtailment Control Interface shall include both a set point for curtailments implemented under Attachment T (Block Curtailment Procedures) of this Agreement (which set point is referred to in both this Section 1(g) (viii) and in Attachment T (Block Curtailed Procedures) as the "block curtailment set point" or "Pnsetpoint") and a set point for curtailments not implemented under Attachment T (Block Curtailment Procedures) (the "curtailment set point"). When the Facility is not being curtailed, the curtailment set point will be set to the Allowed Capacity. The Pnsetpoint will be set as provided in Attachment T (Block Curtailment Procedures) of this Agreement. Autoscheduling functionality, as described in Section 10 (Option for Autoscheduling Functionality), will be implemented through the Pnsetpoint. At all times, Pnsetpoint shall not exceed the curtailment set point.
 - (ix) 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 the centralized control system of the Facility as each generator is designated by Seller to be ready to generate and deliver electric energy to Company, before that generator is included in Facility. No later than thirty (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. Attachment O (Control System Acceptance Test Criteria) provides general criteria to be included in the written protocol for the Control System Acceptance Test. Within fifteen (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; provided, however, such notification itself shall not constitute a condition to the Facility achieving Commercial Operations, if in fact the Control System Acceptance Test(s) has been passed.

2. Operating Procedures.

- (a) Reviews of the Facility. Company may require periodic reviews of the Facility, maintenance records, available operating procedures and policies, and relay settings, and Seller shall implement changes if shown to be necessary for parallel operation or to protect the Company System from damages resulting from the parallel operation of the Facility with the Company System.
- (b) Separation. Seller must separate from the Company System whenever requested to do so by the Company System Operator pursuant to Article 8 (Continuity of Service) and Article 9 (Personnel and System Safety) of the Agreement.
- (c) Seller Logs. Logs shall be kept by 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. 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) Reclosing. Under no circumstances shall Seller, when separated from the Company System for any reason, reclose into the Company System without first

obtaining specific approval to do so from the Company System Operator.

(e) Curtailment Methodology.

- (i) Pursuant to Article 8 (Continuity of Service), and Article 9 (Personnel and System Safety), of the Agreement, Company may at times have limited ability to integrate energy produced by Seller into the Company System for engineering and/or operating reasons and may be required to curtail energy deliveries by Seller. When a curtailment control signal is received by the Facility through the Curtailment Control Interface, the corresponding action (e.g., decrease in the Facility's output) shall be initiated without delay. Further curtailment may be implemented if conditions warrant and the Company System Operator deems it necessary. As conditions warrant, Company shall end or reduce the curtailment when Company reasonably determines that the reason for the curtailment is no longer in existence. The Company System Operator shall end or reduce the curtailment through the Curtailment Control Interface. Seller may request that the Facility be restored no sooner than one hour after Company has curtailed the Facility.
- (ii) When Company determines that curtailment of energy becomes necessary for reasons other than those directly attributable to the Facility, curtailments shall be made to the extent possible in reverse chronological order of the chronological seniority dates determined by Company for the power purchase agreements, with deliveries under the power purchase agreements with the most recent chronological seniority date being the first curtailed, and deliveries under the power purchase agreement with the earliest chronological seniority date being the last curtailed. Since the Kahe Utility-Scale PV Project that is the subject of Docket No. 2013-0360 is owned by Company and will not have a power purchase agreement, its

chronological seniority date for purposes of implementing curtailment in reverse chronological order shall be determined as provided in Section 2(e)(iii) of this Attachment B (Facility Owned by Seller). Small generation projects (such as photovoltaic net energy metering projects, feed-in tariff projects, etc.) that are allowed to be installed without curtailment controls will not be curtailed before the Facility. When Company 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.

- (iii) The chronological seniority date of the Facility shall depend upon whether or not the Facility is included in Curtailment Block A, as set forth below.

A. Curtailment Block A: Eligibility and Inclusion Criteria. The Facility is eligible for inclusion in a group of renewable as-available energy projects that Company will, to the extent possible, treat as a single "block" (designated for convenience of reference as "Curtailment Block A") for purposes of implementing curtailment in reverse chronological order. The following projects ("Block Eligible Projects") are eligible for inclusion in Curtailment Block A: (i) the solar PV project totaling approximately 15 MWs that is the subject of the PUC's Decision and Order No. 31913 filed on February 13, 2014 in Docket No. 2013-0156; (ii) the six solar PV projects totaling approximately 210 MWs that are the subject of the Company's Application for Approval of Application for Additional Waivers from the Framework for Competitive Bidding, filed on November 4, 2013, in Docket No. 2013-0381; and (iii) the Kahe Utility-Scale PV Project. In order to be included in

Curtailment Block A, a Block Eligible Project must satisfy the conditions for inclusion (the "Block Inclusion Conditions") set forth in either Section 2(e)(iii)(B) (Block Inclusion Conditions for Block Eligible Projects Other than the Kahe Utility-Scale PV Project) of this Attachment B (Facility Owned by Seller) or Section 2(e)(iii)(C) (Block Inclusion Conditions for the Kahe Utility-Scale PV Project) of this Attachment B (Facility Owned by Seller), as applicable.

- B. Block Inclusion Conditions for Block Eligible Projects Other than the Kahe Utility-Scale PV Project. As used in this Section 2(e)(iii) of this Attachment B (Facility Owned by Seller), the term "Qualifying Deadline" means, for each of the Block Eligible Projects other than the Kahe Utility-Scale PV Project, the date that is the later of (i) 18 months following the "effective date" under the power purchase agreement for such Block Eligible Project and or (ii) December 31, 2016. In order to be included in Curtailment Block A, a Block Eligible Project other than the Kahe Utility-Scale PV Project must satisfy one of the following two conditions: (aa) such Block Eligible Project must qualify as the Lead Project (as defined in Section 2(e)(iii)(D) (Lead Project and Determination of Curtailment Block A Chronological Seniority Date) of this Attachment B (Facility Owned by Seller)); or (bb) such Block Eligible Project must both (yyy) have a "guaranteed commercial operations date" under the power purchase agreement for such Block Eligible Project that is on or before the Qualifying Deadline for such Block Eligible Project and (zzz) achieve its "commercial operations date" under the power purchase agreement for such Block Eligible Project on or before the Qualifying Deadline for

such Block Eligible Project. The Parties acknowledge that the possibility exists that (i) Curtailment Block A may consist of only the Lead Project or (ii) if no Block Eligible Projects qualify as the Lead Project, Curtailment Block A will be a null set.

- C. Block Inclusion Conditions for Kahe Utility-Scale PV Project. Since the Kahe Utility-Scale PV Project is owned by the Company and will not have a power purchase agreement, (i) the equivalent to the "effective date" for that project (the "Kahe Equivalent Date") shall be the date of issuance by the PUC of a decision and order in Docket 2013-0360 granting the relief requested in the Hawaiian Electric Application filed in said Docket on October 22, 2013 and (ii) the equivalent to the "commercial operations date" for that project (the "Kahe Equivalent of Commercial Operations Date") shall be the date on which the Company notifies the PUC that the Kahe Utility-Scale PV Project has become "used and useful" as a generating facility. In order to be included in Curtailment Block A, the Kahe Utility-Scale PV Project must satisfy the following condition: achieve the Kahe Equivalent of Commercial Operations Date on or before the later of 18 months following the Kahe Equivalent Date or December 31, 2016.

- D. Lead Project and Determination of Curtailment Block A Chronological Seniority Date. The Lead Project shall be the first of the aforementioned Block Eligible Projects that both (i) has a "guaranteed commercial operations date" under the power purchase agreement for such project (the "Lead Project Power Purchase Agreement" or "LPPPA") that is on or before the Qualifying Deadline for such project and (ii) achieves its "commercial operations date" under the

LPPPAA. Under no circumstances will the Kahe Utility-Scale PV Project qualify as the Lead Project. The chronological seniority date for the Lead Project shall be the "effective date" (the "Lead Project Effective Date" or "LPED") under the LPPPAA except that: (aa) if the Lead Project does not achieve its "commercial operations date" under the LPPPAA on or before 18 months following the LPED, the chronological seniority date for curtailment for the Lead Project will change by adding one Day for each Day the "commercial operations date" of the Lead Project under the LPPPAA is later than 18 months after the LPED; and (bb) the relationship between the chronological seniority date of the Lead Project (and hence Curtailment Block A) and the chronological seniority date of certain "Pending Projects" shall be determined as set forth in Section 2(e)(iv) of this Attachment B (Facility Owned by Seller). The chronological seniority date under the power purchase agreement for the projects included in Curtailment Block A shall be the chronological seniority date for curtailment for the Lead Project, as determined as provided in the preceding sentence. If the Facility is the Lead Project, the terms "commercial operations date" and "effective date" when used in this Section 2(e)(iii)(D) (Lead Project and Determination of Curtailment Block A Chronological Seniority Date) of this Attachment B (Facility Owned by Seller) shall mean respectively, the Commercial Operations Date and the Effective Date as defined in this Agreement.

- E. Chronological Seniority Date for the Facility if it is not Included in Curtailment Block A. If Curtailment Block A is not a null set but the Facility does not satisfy the Block Inclusion Conditions applicable to it, the Facility's chronological seniority

date for purposes of implementing curtailment in reverse chronological order shall be the later of (i) the date that is one Day after the chronological seniority date for Curtailment Block A or (ii) the date that shall be determined by adding to the Effective Date one Day for each Day the Commercial Operations Date is later than 18 months after the Effective Date. If Curtailment Block A is a null set, then the Facility's chronological seniority date shall be the Effective Date, unless Seller does not achieve a Commercial Operations Date on or before 18 months following the Effective Date, in which case the chronological seniority date for curtailment of the Facility will be adjusted by adding one Day for each Day the Commercial Operations Date is later than 18 months after the Effective Date.

- F. Chronological Seniority Date for Kahe Utility-Scale PV Project if it is not Included in Curtailment Block A. If Curtailment Block A is not a null set but the Kahe Utility-Scale PV Project is not included in Curtailment Block A, the Kahe Utility-Scale PV Project's chronological seniority date for purposes of implementing curtailment in reverse chronological order shall be the later of (i) the date that is one Day after the chronological seniority date for Curtailment Block A or (ii) the date that shall be determined by adding to the Kahe Equivalent Date one Day for each Day that the Kahe Equivalent of Commercial Operations Date is later than 18 months following the Kahe Equivalent Date. If Curtailment Block A is a null set, then the Kahe Utility-Scale PV Project's chronological seniority date shall be the Kahe Equivalent Date, unless the Kahe Utility-Scale PV Project does not achieve the Kahe Equivalent of Commercial Operations Date before 18 months

following the Kahe Equivalent Date, in which case the chronological seniority date for curtailment of the Kahe Utility-Scale PV Project will be adjusted by adding to the Kahe Equivalent Date one Day for each Day that the Kahe Equivalent of Commercial Operations Date is later than 18 months following the Kahe Equivalent Date.

- (iv) The relationship between the chronological seniority date of Curtailment Block A and the chronological seniority date of certain Pending Projects (as defined below) shall be determined in light of the Block Eligible Projects actually included in Curtailment Block A, as set forth below.

A. Pending As-Available Renewable Energy Projects With Possible Chronological Seniority Dates Earlier Than That of Curtailment Block A. The following pending projects ("Pending Projects") will have chronological seniority dates earlier than the chronological seniority date of Curtailment Block A as and to the extent provided in this Section 2(e)(iv) of this Attachment B (Facility Owned by Seller): (i) the executed power purchase agreement for the 24 MW wind project known as "Na Pua Makani" (the "NPM PPA") the application for approval of which has been filed with but not yet approved by the PUC in Docket No. 2013-0423; (ii) the executed power purchase agreement for the 20 MW photo voltaic project known as "Mililani South Solar Park One" (the "MSSP PPA") negotiated under a waiver arising out of Docket No. 2010-0079, the application for approval of which has been filed but not yet approved by the PUC in Docket No. 2014-0077; and (iii) the five power purchase agreements for Feed-In-Tariff Tier 3 photovoltaic projects (totaling approximately 20 MW) that are not executed as of the Execution Date, which power purchase agreements

will be in the form approved by the PUC for FIT Tier 3 projects (each a "FIT Tier 3 PPA").

B. Chronological Seniority Dates for Pending Projects in Relation to Curtailment Block

A. A Pending Project shall have a chronological seniority date that is earlier than the chronological seniority date of the Lead Project (and hence Curtailment Block A) if the chronological seniority date of such Pending Project as determined under the power purchase agreement for such Pending Project is no later than the date the last of the Block Eligible Projects to satisfy the Block Inclusion Conditions actually satisfies the Block Inclusion Conditions applicable to such Block Eligible Project, in which case the chronological seniority date of such Pending Project shall be the earlier of the chronological seniority date under the power purchase agreement for such Pending Project or the Day before the chronological seniority date of the Lead Project (and hence curtailment Block A). A Pending Project shall have a chronological seniority date that is later than the chronological seniority date of the Lead Project (and hence Curtailment Block A) if and only if the chronological seniority date as determined under the power purchase agreement for such Pending Project is subsequent to the date the last of the Block Eligible Projects to satisfy the Block Inclusion Conditions actually satisfies the Block Inclusion Conditions applicable to such Block Eligible Project. The intent of the preceding two sentences is that (i) since the Pending Projects are not Block Eligible Projects, their respective chronological seniority dates must be either earlier or later than the chronological seniority date of Curtailment Block A and (ii) a Pending Project's chronological seniority date

shall be earlier than that of Curtailment Block A unless all the projects actually included in Curtailment Block A would, in the absence of the provisions of Section 2 (e) (iii) (D) (Lead Project and Determination of Curtailment Block A Chronological Seniority Date) of this Attachment B (Facility Owned by Seller), have achieved a chronological seniority date earlier than that of the Pending Project in question.

- (v) When curtailments are being implemented in reverse chronological order, the Company System Operator shall, to the extent possible, allocate curtailment to the projects included in Curtailment Block A as provided in Attachment T (Block Curtailment Procedures) to this Agreement.
 - (vi) If the Curtailment Control Interface is unavailable, due to loss of communication link, RTU failure, or other event resulting in the loss of the remote control by Company, provision must be made for Seller to be able to institute via local controls, within 30 minutes (or such other period as Company accepts in writing) of the verbal directive by the Company System Operator, such raising and lowering of curtailment limits as directed by the Company System Operator.
 - (vii) If all local and remote curtailment controls become unavailable or fail, the Facility shall, without intentional delay, disconnect from the Company's System.
 - (viii) If the direct transfer trip 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 for the Seller to trip the main circuit breaker.
- (f) Curtailment Responsibilities. In the event that Company initiates a Curtailment Event pursuant to this Agreement, Company shall not be obligated to accept any electric energy from Seller except for

such electric energy that Company notifies Seller that it is able to take during the duration of a Curtailment Event. Company shall not be liable to Seller for any curtailments unless such curtailment was in violation of the Agreement. Seller shall not override Company's curtailment. Company shall pay for Compensable Curtailed Energy as provided in Section 2.8 (Invoices for Compensable Curtailed Energy).

- (g) Cyber-Security. Seller shall comply with the cyber security requirements set forth in Section 1.(b)(iii)G of this Attachment B (Facility Owned by Seller).
- (h) Allowed Operations. Facility shall be allowed to export energy to the Company System only when all sections of 138 kV lines from Kahe Power Plant to Akau Switching Station and from Wahiawa Substation to Waiau Power Plant are energized, with exceptions to allow for export of energy if some sections of the 138 kV lines form Kahe Power Plant to Wahiawa Substation and Wahiawa Substation to Waiau Power Plant are not energized if effective Mitigation Measures have been put in place as described in Section 29.26 (N-1-1 Contingency) of the Agreement.

3. Performance Standards.

(a) Reactive Power Control.

- (i) Seller shall control its reactive power by automatic voltage regulation control. Seller shall automatically regulate voltage at a point, the point of regulation, between Seller's generator terminal and the Point of Interconnection to be specified by Company, to within 0.5% of a voltage specified by the Company System Operator. Voltage will be regulated based on a droop curve agreed to between Company and Seller and only up to the reactive power capabilities of the Facility as outlined in Section 3(b) (Reactive Amount) of this Attachment B (Facility Owned by Seller).
- (ii) Seller's voltage regulator shall have the ability to automatically regulate voltage using a schedule of setpoint values to be specified by

Company. The schedule shall cover a 24-hour period and shall be capable of automatically implementing a pre-determined setpoint change.

- (iii) The reactive power range will be determined by the Interconnection Requirements Study.

(b) Reactive Amount.

- (i) Each 1560 kVA inverter online at the Facility shall have the ability to deliver or receive, at its inverter terminal, reactive power to or from Company as illustrated in the reactive power curve attached to this Agreement as Exhibit B-2 (Reactive Power Curve). If Company elects, at its sole discretion, and not later than five (5) Business Days after the Execution Date, to require additional evaluation of the reactive amount Performance Standards required for the interconnection of the Facility with Company's System, then such evaluation shall be conducted at Seller's expense. If such evaluation determines that modifications to such reactive amount Performance Standards are required that alter the required reactive power curve or that require the installation of an alternative reactive power device external to the inverters, Seller shall decide, as soon as possible, whether it agrees to accept an alternate power curve or installation of an alternative reactive power device at Seller's expense and, if Seller is not agreeable to one of the proposed solutions, Seller shall have the option, by written notice delivered to Company within thirty (30) Days of the completion of such evaluation, to declare this Agreement null and void. If Seller does not declare this Agreement null and void as provided in the previous sentence, then Seller shall deliver to Company, no later than the date set forth in the previous sentence, a revised reactive power curve or propose an alternative reactive power device external to the inverters consistent with the results of such evaluation. If a revised reactive power curve is provided, such revised reactive power curve shall supersede Exhibit B-2 (Reactive Power Curve). If Seller proposes an alternative reactive power

device, this Agreement shall be amended to include the description of such device.

- (ii) Company will not be obligated to purchase reactive power from Seller.
- (iii) The Facility shall contain equipment able to continuously and actively control the output of reactive power under automatic voltage regulation control reacting to system voltage fluctuations. The automatic voltage regulation response speed at the point of regulation shall be such that at least 90% of the initial voltage correction needed to reach the control target will be achieved within 1 second following voltage step change. Company and Seller shall agree to a droop curve for voltage support.
- (iv) If the Facility does not operate in accordance with Section 3(b)(i) of this Attachment B (Facility Owned by Seller), Company may curtail or disconnect all or a part of Facility from Company System until Seller corrects its operation (such as by installing capacitors at Seller's expense).

(c) Ramp Rates.

Seller shall ensure that the ramp rate of the Facility is less than the following limits for all conditions including start up, normal operations, and shut down for the following periods as calculated in accordance with Attachment C (Methods and Formulas For Measuring Performance Standards).

- Maximum Ramp Rate Upward of 2 MW/minute for all periods.
- Maximum Ramp Rate Downward of 2 MW/minute for all periods other than periods of rapid loss of solar resource, or the tripping of inverters.

The Facility is allowed to exceed the maximum ramp rate limits in Section 3(c) (Ramp Rates) of this Attachment B (Facility Owned by Seller) when Facility output is changed by the frequency droop response described in Section 3(m) (Frequency Regulation) of

this Attachment B (Facility Owned by Seller) or by Autoscheduling.

(d) Power Fluctuation Rate.

Seller shall ensure that the power fluctuation rate of the Facility is less than the following limits for all conditions including start up, normal operations, and shut down as calculated in accordance with Attachment C (Methods And Formulas For Measuring Performance Standards):

Instantaneous: 1 megawatt/2-second scan

Subminute Average: an average of 0.3 megawatt/2-second scan for any 60-second period¹

- The above limits upwards, Seller increasing delivery of real power to Company, apply for all periods.
- The above limits downwards, Seller decreasing delivery of real power to Company, apply for all periods other than periods of rapid loss of solar resource, or the tripping of inverters.

The Facility is allowed to exceed the power fluctuation rate limits in Section 3(d) (Power Fluctuation Rate) of this Attachment B (Facility Owned by Seller) when Facility output is changed by the frequency droop response described in Section 3(m) (Frequency Regulation) of this Attachment B (Facility Owned by Seller) or by Autoscheduling.

(e) Undervoltage Ride-Through.

The Facility, as a whole, will meet the following undervoltage ride-through requirements during low voltage affecting one or more of the three voltage phases ("V" is the voltage of any three voltage phases at the Point of Interconnection):

$0.88 \text{ pu} \leq V \leq 1.10 \text{ pu}$ The Facility remains connected to the Company System.

¹ When calculating subminute average, all downward (negative) values will be treated as zeroes.

| | |
|-----------------------|--|
| 0.80 pu ≤ V < 0.88 pu | The Facility may initiate disconnection from the Company System if the voltage remains in this range for more than 5 seconds. |
| 0.75 pu ≤ V < 0.80 pu | The Facility may initiate disconnection from the Company System if the voltage remains in this range for more than 2 seconds. |
| 0.00 pu ≤ V < 0.75 pu | The Facility may initiate disconnection from the Company System if voltage remains in this range for more than 600 milliseconds. |

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 7 cycles with one reclose attempt, cleared in 7 cycles, 23 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 Facility shall be set so that the Facility will meet the following overvoltage ride-through requirements during high voltage affecting one or more of the three voltage phases (as described below) ("V" is the voltage of any

of the three voltage phases at the Point of Interconnection):

| | |
|------------------------|--|
| 0.88 pu ≤ V ≤ 1.10 pu | The Facility remains connected to the Company System. |
| 1.10 pu < V ≤ 1.15 pu | The Facility may initiate disconnection from the Company System if voltage remains in this range for more than 1 second. |
| 1.15 pu < V ≤ 1.175 pu | The Facility may initiate disconnection from the Company System if voltage remains in this range for more than 500 milliseconds. |
| 1.175 pu < V ≤ 1.2 pu | The Facility may initiate disconnection from the Company System if voltage remains in this range for more than 200 milliseconds. |
| V > 1.2 pu | The Facility may initiate disconnection from the Company System immediately. |

(g) [Reserved]

(h) Fault Ride Through.

For fault-related voltage dips at the Point of Interconnection that stay within the limits of the under voltage ride-through requirements in Section 3(e) (Undervoltage Ride Through) of this Attachment B (Facility Owned by Seller), upon clearing of the fault, Seller shall within 1 second of restoration, provide at least 90% of the real power output at the Point of Interconnection immediately before the fault without regard to the ramp rate requirements of Section 3(c) (Ramp Rates) of this Attachment B (Facility Owned by Seller). The fault ride through requirement does not apply if the Facility is operating at less than five percent (5%) of the Facility's nameplate capacity.

(i) Underfrequency ride-through.

The Facility shall meet the following underfrequency ride-through requirements during an underfrequency disturbance ("f" is the Company System frequency at the Point of Interconnection) :

$f \geq 57.0$ Hz The Facility remains connected to the Company System.

$50.0 \text{ Hz} \leq f < 57.0$ Hz The Facility may initiate disconnection from the Company System if frequency remains in this range for more than 20 seconds.

$f \leq 50.0$ Hz The Facility may initiate disconnection from the Company System immediately.

(j) Overfrequency ride-through.

The Facility will behave as specified below for overfrequency conditions ("f" is the Company System frequency at the Point of Interconnection) :

$f \leq 63.0$ Hz The Facility remains connected to the Company System.

$f > 63.0$ Hz The Facility will initiate disconnection from the Company System immediately.

(k) Voltage Flicker.

Any voltage flicker on the Company System caused by the 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 Facility shall not exceed the limits stated in IEEE Standard 519-1992, or latest version "Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems". Seller shall be

responsible for the installation of any necessary controls or hardware to limit the voltage and current harmonics generated from the Facility to defined levels.

(m) Frequency Regulation.

The Facility shall provide a frequency droop response reacting to system frequency fluctuations at the Point of Interconnection in both the overfrequency and underfrequency directions to the extent allowed by the availability of the solar resource.

- (i) The design of the Facility frequency droop controls shall be approved by Company.
- (ii) The Facility frequency droop setting (droop %) and frequency control dead band shall be set by Seller as specified by Company.
- (iii) The Facility frequency droop controls shall be in continuous operation when the Facility is exporting energy to the Company unless directed otherwise by Company.
- (iv) The Facility frequency droop controls shall not allow the Facility's real power output to exceed the curtailment set point.

(n) [Reserved]

4. Maintenance of Seller-Owned Interconnection Facilities.

- (a) Seller must address any Disconnection (as defined below) according to the requirements of this Section 4 (Maintenance of Seller-Owned Interconnection Facilities) of Attachment B (Facility Owned by Seller). For this purpose, a Disconnection is a disconnection from Company System of at least 10 MW from the Facility over a "rolling 120-second period", if such disconnection is due to a defect in or a failure of 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 System of at least 10 MW from Facility over a rolling 120-second period ("Disconnection Event"), Seller shall investigate the cause of the Disconnection Event, and determine if it is a Disconnection as defined in Section 4(a) of this Attachment B (Facility Owned by Seller). Within three (3) Business Days of the Disconnection Event, Seller shall provide, in writing to 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, Seller shall provide, in writing to Company, Seller's findings, data relied upon for such findings, and proposed actions to prevent reoccurrence of a Disconnection ("Proposed Actions"). Company may assist Seller in determining the causes of and recommendations to remedy or prevent a Disconnection ("Company's Recommendations"). Seller shall implement such Proposed Actions (as modified to incorporate the Company's Recommendations, if any) and Company's Recommendations (if any) in accordance with the time period agreed to by the Parties.
- (d) In the event Seller and Company disagree as to (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) Company's Recommendations, and/or (vi) the time period to implement the Proposed Actions and/or Company's Recommendations, then the Parties shall follow the procedure set forth in Section 5 (Expedited Dispute Resolution) of this Attachment B (Facility Owned by Seller).
- (e) Upon the fourth (4th) Disconnection (and each subsequent Disconnection) within any Contract Year, the Parties shall follow the procedures set forth in Section 4(a) and Section 4(d) of Attachment B (Facility Owned by Seller), to the extent applicable. If after following the procedures set forth in this Section 4 (Maintenance of Seller-Owned Interconnection Facilities) of Attachment B (Facility Owned by Seller), Seller and 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 Third-Party consultant ("Qualified Consultant") chosen from the Qualified Independent Third-Party Consultants List ("Consultants List") attached to the Agreement as Attachment D (Consultants List). 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 Seller-Owned Interconnection Facilities ("Study"). Seller and Company shall each pay for one-half of the total cost of the Study. The Study shall be completed within ninety (90) Days from such fourth Disconnection (and each subsequent Disconnection) within any Contract Year, unless otherwise agreed to in writing by Seller and Company. The Qualified Consultant shall send the Study to Company and Seller. Seller (and/or its Third-Party consultants and contractors), at 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 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) Days from the Day the completed Study is issued by the Qualified Consultant, unless otherwise agreed to in writing by Company. In the event the time requirement for the (i) commissioning of the Study, (ii) 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, Company may limit the total Allowed Capacity to a level that maintains reliable operations in accordance with Good Engineering and Operating Practices for the period that such requirement has not been achieved. Nothing in this provision shall affect Company's right to curtail the Facility as provided for in this Agreement.

- (f) The Consultants List attached hereto as Attachment D (Consultants List) 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 Company and Seller regarding (i) Seller's compliance with the standards set forth in Section 3 (Performance Standards) of this Attachment B (Facility Owned by Seller), and/or (ii) Section 4 (Maintenance of Seller-Owned Interconnection Facilities) of this Attachment B (Facility Owned by Seller) such as (aa) whether a Disconnection Event occurred, (bb) the sequence of events and/or probable cause of the Disconnection Event, (cc) whether the Disconnection Event is a Disconnection, (dd) the Proposed Actions, (ee) the Company's Recommendations, and (ff) the time period to implement the Proposed Actions and/or the Company's Recommendations, then authorized representatives from Company and 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 Article 28 (Dispute Resolution) of this Agreement.

6 Modeling.

(a) Seller's Obligation to Provide Models. No later than the Commercial Operations Date, Seller shall provide detailed data regarding the design and location of the Facility, in a form reasonably satisfactory to Company, to

allow the modeling of the equipment within the Facility listed on Exhibit B-1 (Required Models) (each a "Required Model" and collectively, the "Required Models"). Thereafter, during the Term, Seller shall provide working updates of any Required Model within 30 Days of the Source Code Owner making generally available to its customers (including Seller) any modification or update to a Required Model.

(b) Escrow Establishment. If, pursuant to Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned by Seller), the Required Models are provided to the Company in a form other than Source Code, Seller shall arrange for and cause the Source Code for the relevant Required Model is deposited into the Source Code Escrow as set forth below in Section 6(b)(i) (Source Code Escrow) no later than the time periods set forth in Section 6(a) (Seller's Obligation to Provide Models) for delivery of the Required Models. If, however, Seller is unable to deposit the required Source Code into the Source Code Escrow within the time periods set forth in Section 6(a) (Seller's Obligation to Provide Models), Seller shall, no later than such time periods, instead establish a monetary escrow as set forth below in Section 6(b)(ii) (Monetary Escrow) of this Attachment B (Facility Owned by Seller).

(i) Source Code Escrow.

(A) Establishment of Source Code Escrow. If the Required Models are not provided to the Company in the form of Source Code pursuant to Section 6(a) of this Attachment B (Facility Owned by Seller), Seller shall: (a) arrange for and cause the deposit of a copy of the current version of the Source Code and relevant documentation for all Required Models with the Source Code Escrow Agent under the terms and conditions of the Source Code Escrow Agreement, and (b) arrange for and cause the update of the deposited Source Code and relevant documentation for any Firmware Updates and Model Updates as soon as reasonably possible after they are made generally available to the Source Code Owner's customers (including available to Seller).

(B) Release Conditions. Company shall have the right to obtain from the Source Code Escrow Agent one copy of the escrowed Source Code for the Required Models, under the following conditions upon Company's request:

(i) A receiver, trustee, or similar officer is appointed, pursuant to federal, state or applicable foreign law, for the Source Code Owner;

(ii) Any voluntary or involuntary petition or proceeding is instituted, under (x) U.S. bankruptcy laws or (y) any other bankruptcy, insolvency or similar proceeding outside of the United States, by or against the Source Code Owner; or

(iii) Failure of the Source Code Owner to function as a going concern or operate in the ordinary course; or

(iv) Seller and the Source Code Owner fail to provide to Company the Required Models or updated Required Models within the time periods set forth in Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned by Seller), Company gives written notice of such failure to Seller and the Source Code Owner, and Seller and Source Code Owner fail to remedy such breach within five (5) Days following receipt of such notice.

(C) Remedies. If Company has the right to obtain from the Source Code Escrow Agent one copy of the escrowed Source Code for the Required Models pursuant to Section 6(b)(i)(B) (Release Conditions) of Attachment B (Facility Owned by Seller), and upon release from the Source Code Escrow, Company finds that Seller failed to arrange for and cause the update of the Source Code Escrow with the modified and/or updated Source Code and relevant documentation for a Firmware Update of the Required Models as provided in Section 6(b)(i) (Source Code Escrow) of Attachment B (Facility Owned by Seller), Seller shall be liable to Company for liquidated damages in the amount of \$500 per day for each day Seller failed to provide such Source Code to Company or the Source Code Escrow or such update to the Source Code to Company or the Source Code Escrow from the date such Firmware Update was first made available by the Source Code Owner to Seller. In no event shall the liquidated damages payable pursuant to this Section 6(b)(i)(C) (Remedies) of this Attachment B (Facility Owned by Seller) exceed Five Hundred Thousand Dollars (\$500,000) during the Term.

Each Party agrees and acknowledges that (i) the damages that Company would incur upon Seller's breach of its obligations pursuant to Section 6(b)(i) (Source Code

Escrow) of this Attachment B (Facility Owned by Seller) would be difficult or impossible to calculate with certainty; (ii) the aforesaid liquidated damages are an appropriate approximation of such damages; and (iii) the liquidated damages shall be Company's sole and exclusive remedy for Seller's breach of its obligations pursuant to Section 6(b)(i) (Source Code Escrow) of this Attachment B (Facility Owned by Seller).

(D) Certification. The Source Code Escrow Agent shall release the Source Code of the Required Models to Company upon receipt of a signed statement by a representative of Company that reads substantially as follows:

The undersigned hereby certifies that (i) I am duly authorized to execute this document on behalf of Hawaiian Electric Company, Inc. ("Hawaiian Electric"), and (ii) Hawaiian Electric is entitled to a copy of the Source Code of the Required Models Pursuant to Section 6(b)(i)(B) (Release Conditions) of Attachment B (Facility Owned by Seller) of the Power Purchase Agreement dated as of _____, between _____, and Hawaiian Electric.

(E) Authorized Use. If Company becomes entitled to a release of the Source Code of the Required Models from escrow, Company may thereafter correct, modify, update and enhance the Required Models for the sole purpose of providing itself the support and maintenance it otherwise would have been entitled to if it had been provided the Required Models by Seller under Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned By Seller) (the "Source Code Authorized Use").

(F) Confidentiality Obligations. Company shall keep the Source Code of the Required Models confidential pursuant to the confidentiality obligations of the Source Code Escrow Agreement. Company shall restrict access to the Source Code of the Required Models to those employees, independent contractors and consultants of Company who have agreed in writing to be bound by confidentiality and use obligations consistent with those specified in the Escrow Agreement, and who have a need to access the Source Code of the Required Models on behalf of Company to carry out their duties for the Authorized Use. Promptly upon Seller's

request, Company shall provide Seller with the names and contact information of all individuals who have accessed the Source Code of the Required Models, and shall take all reasonable actions required to recover any such Source Code in the event of loss or misappropriation, or to otherwise prevent their unauthorized disclosure or use.

(ii) Monetary Escrow.

(A) Establishment of Monetary Escrow. If any Required Model and its relevant Source Code is not provided to the Company in the form of Source Code pursuant to Section 6(a) of this Attachment B (Facility Owned by Seller) and if the Seller is unable to arrange for and ensure the deposit of the Source Code into the Source Code Escrow established for the benefit of the Company pursuant to Section 6(b)(i) (Source Code Escrow) of this Attachment B (Facility Owned by Seller) then, no later than the time periods set forth in Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned by Seller) for delivery of the Required Models and Source Code, Seller shall make a one-time deposit equal to the amount of Two Hundred Fifty Thousand Dollars (\$250,000) in the form of cash or an irrevocable standby letter of credit with no documentation requirement substantially in the form attached to this Agreement as Attachment M (Form of Letter of Credit) per Required Model (and its relevant Source Code) into an escrow account with the Monetary Escrow Agent under the Monetary Escrow Agreement (the "Monetary Escrow").

Notwithstanding anything herein to the contrary, in the event Company enters into one or more power purchase agreements with Seller's Affiliates that contain provisions for deposits into a monetary escrow for Required Models (any such Seller Affiliate, an "Escrow Affiliate"), Company agrees that Seller shall be deemed to have fulfilled its obligations pursuant to Section 6(b) (Escrow Establishment) for a specific Required Model to the extent (1) any Escrow Affiliate has made a deposit into any "Monetary Escrow" for a Required Model that is the same or substantially similar to such Required Model of Seller's and (2) Seller has been made a party to any "Monetary Escrow Agreement" executed by an Escrow Affiliate in satisfaction of its obligations to fund any "Monetary Escrow" for a "Required Model". The Monetary Escrow shall be fully established (including but not limited to the full execution and delivery of the Monetary Escrow Agreement by Seller and each Escrow Affiliate) and

funded prior to the time the first project intended to be covered by such Monetary Escrow (whether such project is Seller's Facility or the Facility of an Escrow Affiliate) achieves Commercial Operations.

(B) Release Conditions. Company shall have the right to obtain from the Monetary Escrow Agent the funds necessary to develop and recreate the Required Model or Required Models upon Company's request (or draw upon the letter of credit, as applicable) if Seller fails to provide the Company the Required Models or updated Required Models within the time periods set forth in Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned by Seller), Company gives written notice of such failure to Seller, and Seller fails to remedy such breach within five (5) days following receipt of such notice.

(C) Seller's Obligation. If the funds in the Monetary Escrow are not sufficient to cover Company's associated consultant fees, costs and expenses to develop and recreate the Required Models, Seller shall pay to Company the difference within ten (10) Days of Company's written notice to Seller. The maximum liability to Seller under this Section 6(b)(ii)(C) (Seller's Obligation) of this Attachment B (Facility Owned by Seller) shall be limited to Seven Hundred Fifty Thousand Dollars (\$750,000) for the Term of this Agreement.

(D) Model Verification. Seller shall work with the Company to validate the new Required Models developed by or on behalf of Company within sixty (60) Days of receiving such new Required Models. Seller shall also arrange for and ensure that Company may obtain new Required Models, if and when such Required Models are produced, directly from the Source Code Owner in the event that Seller ceases to operate as a going concern or is subject to voluntary or involuntary bankruptcy and is unable or unwilling to obtain the new Required Models from the Source Code Owner.

(E) Certification. The Monetary Escrow Agent shall release the necessary funds to Company upon receipt of a signed statement by a representative of Company that reads substantially as follows:

The undersigned hereby certifies that (i)
I am duly authorized to execute this

document on behalf of Hawaiian Electric Company, Inc. ("Hawaiian Electric"), and (ii) Hawaiian Electric is entitled to \$ _____, pursuant to Section 6(b)(ii)(B) (Release Conditions) of Attachment B (Facility Owned by Seller) of the Power Purchase Agreement dated as of _____, between _____, and Hawaiian Electric.

(F) Authorized Use. If Company becomes entitled to a release of funds from escrow (or to draw upon the letter of credit, as applicable), Company may thereafter use such funds to develop, recreate, correct, modify, update and enhance the Required Models for the sole purpose of providing itself the support and maintenance it otherwise would have been entitled to if it had been provided the Required Models by Seller under Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned by Seller) (the "Monetary Authorized Use").

(iii) Supplementary Agreement. The parties stipulate and agree that the escrow provisions in this Attachment B (Facility Owned By Seller), Section 6(b) (Escrow Establishment) and the Source Code Escrow Agreement and Monetary Escrow Agreement are "supplementary agreements" as contemplated in Section 365(n)(1)(B) of the Code. In any voluntary or involuntary bankruptcy proceeding involving Seller, failure by Company to assert its rights to "retain its rights" to the intellectual property encompassed by the Source Code or the funds in the monetary escrow, pursuant to Section 365(n)(1)(B) of the Code, under an executory contract rejected in a bankruptcy proceeding, shall not be construed as an election to terminate the contract by Company under Section 365(n)(1)(A) of the Code.

7. [RESERVED]

8. Data and Forecasting.

Seller shall provide forecasting information in accordance with the terms of Article 6 (Forecasting) of this Agreement and the following requirements:

(b) Solar Generation Facility.

(i) Physical Site Data: Seller must provide Company with an accurate description of the physical site of the Facility including but not limited to:

- A. Facility Map showing the layout of the Facility, coordinates (latitude and longitude) of the Facility, coverage area (footprint), elevation (above ground) and orientation angle and direction (north-east-south-west plane) of arrays/concentrators.
- B. Location (latitude and longitude) and elevation (above ground) of each MMS and shown on the Facility map.
- C. Generation capacity of the Facility at standard test conditions (STC) including inverter type, power rating and array configuration to inverters.
- D. Solar generation technology employed at the Facility with temperature dependence, mounting and module type.

(ii) MMS Information:

- A. Placement of MMS should account for the microclimate of the area and Facility coverage area.
- B. Seller shall install and maintain no less than one MMS for facilities with a Contract Capacity of less than 5 MW.
- C. For facilities with a Contract Capacity of 5MW or greater, Seller shall install and maintain a minimum of two MMS oriented with respect to the primary wind direction are required. MMS should have an independent, backup power source from within the footprint of the Facility.
- D. Notwithstanding the foregoing, for facilities that span greater than a five mile radius, Seller shall install and maintain a minimum of two MMS.

E. If more than one facility is located in the same geographic area as the Facility, sharing of MMS information is permitted provided (i) Seller demonstrates to the Company that relevant meteorological conditions are similar and (ii) written agreement between the Facility and the other facility to share monitoring (in form and substance acceptable to Company) is provided to Company. If the agreement to share monitoring expires or terminates, Seller shall make any or all necessary arrangements to independently provide monitoring that meets the requirements specified in this Section 8(a) (Solar Generation Facility) of Attachment B (Facility Owned by Seller) prior to such expiration or termination of such sharing agreement.

(iii) Measured Meteorological Data and Accuracy:

A. All MMS data should be provided to Company via SCADA communication and protocol acceptable to Company to support operations and forecasting needs at a continuous scan rate (4 second intervals for SCADA enabled sites). The Table below shows minimum required solar irradiance measurement for various types of solar generation technology. This value may not be derived.

| Solar Technology | Direct Normal Irradiance | Global Irradiance (GHI or Plane of Array) |
|---|--------------------------|---|
| Flat Plate (fixed horizontal, fixed angle, tracking, roof mounted) | | X |
| Flat Panel Solar Thermal (fixed angle, roof mounted, tracking) | | X |
| Concentrated PV (flat, trough, tracking) | X | X |

B. Units and accuracy of measured parameters to be provided to Company in real time shall be as shown in the Table below. These represent the minimum required accuracies.

| Parameter | Measurement Device (typical) | Unit | Range | Resolution |
|---|---|---------------------------|----------------------------------|---|
| Global Irradiance | Pyranometer or equivalent | W/m ² | 0 to 1300 W/m ² | +/-25 W/m ² |
| Back of Panel temperature at array height | Temperature probe | °C | -20 to +50 °C | +/-1 °C |
| Ambient temperature at site | Temperature probe | °C | -20 to +50 °C | +/-1 °C |
| Pressure | Piezoresistive transducer or equivalent | mbar | 150 to 1150 mbar (0 to +50°C) | +/-60 mbar |
| Wind speed | Anemometer, sonic device or equivalent | mph | 0 to 134 mph | +/-1 mph |
| Wind direction | Vane, sonic device or equivalent | Degrees (from True North) | 360° | +/-5° |
| Actual MW output | MW from facility | MW-s | Up to name plate | +/-0.1 MW |
| Facility availability | Ratio of actual MW/name plate MW | % | 0 to 100% | +/-0.1 MW |
| Real-time Generation | Meter, transducers | MW-s | | Per communication / telemetry requirements or 2% of measurement |

(iv) Data Collection Backup Power:

For facilities with a Contract Capacity greater than 1 MW, an independent, backup power source must be provided from station power, battery, solar panel, etc. to temporarily store and record data. Backup power source must be capable of providing power for the MMS for a reasonable period of time until primary power is restored. The same backup power source can serve multiple MMS as needed by the Facility.

- (c) Among the purposes for which Company requires Seller to provide the real-time data required under Section 8 (Data and Forecasting) of this Attachment B (Facility Owned by Seller) is to enable Company to monitor Seller's compliance with the Performance Standards set forth in Section 3 (Performance Standards) of this Attachment B (Facility Owned by Seller).

9. Technology Specific Requirements.

(a) [RESERVED]

(b) [RESERVED]

(c) Inverter Systems.

- (i) Direct current generators and non-power (i.e. other than 60 Hertz) alternating current generators can only be installed in parallel with the Company System using a non-islanding synchronous inverter. The design shall comply with the requirements of IEEE Std 1547-2003 (or latest version), except as described in Section 3 (Performance Standards) of this Attachment B (Facility Owned by Seller).

- (ii) Self-commutated inverters of the Company-interactive type shall synchronize to the Company 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).

10. Option for Autoscheduling Functionality.

Company has the option to implement an autoscheduling functionality to allow the Facility to quickly increase output (by raising the Facility's block curtailment set point) when Company loses a large generator on the Company System ("Autoscheduling"). If Company decides to implement Autoscheduling, it shall be implemented for all projects in Curtailment Block A. Raising the Facility's block curtailment set point by Autoscheduling would be permitted only when the Seller is curtailed through block curtailment. Under the Autoscheduling functionality, very fast direct transfer connections would be added from several, up to four (4), of Company's large generators to Seller's Facility. On a periodic basis, the Company EMS would provide a schedule to Seller's control system specifying the level of upward adjustment to the block curtailment set point for the loss of each of these large generators. When one of these large generators trip, a signal would be sent to Seller via the direct transfer connection to notify Seller's control system that a certain large generator had tripped. Upon receiving the direct transfer signal, Seller shall raise its block curtailment set point by the value for the particular large generator loss according to the most current schedule provided by the Company Energy Management System ("EMS") and the Facility real-power output shall reach that level, solar resource permitting, within five (5) cycles of receiving such signal. The upward adjustment to the block curtailment set point from Autoscheduling shall be limited by the curtailment setpoint.

Space shall be reserved for up to two (2) additional racks within the Hawaiian Electric control house to accommodate Autoscheduling in the event Company decides to implement Autoscheduling functionality in the future. Also, Seller's control system shall be upgradeable to provide for the Autoscheduling functionality as specified above in this Section 10 (Option for Autoscheduling Functionality) of this Attachment B (Facility Owned by Seller). If Company decides to implement Autoscheduling functionality, Company shall pay for the needed equipment, software upgrades, and installation of such equipment and software necessary for such implementation. Company and Seller agree to use commercially reasonable efforts to facilitate installation and minimize outages as reasonably possible for the needed equipment, software, testing and development of operating procedures to implement Autoscheduling when such Autoscheduling

functionality is requested by Company. If Seller does not provide such commercially reasonable efforts to facilitate installation and testing, Company is under no obligation to implement Autoscheduling at Seller's facility even if Autoscheduling functionality is implemented for other projects in Curtailment Block A, in which case the share of curtailment allocated to the Facility during an Autoscheduling event may be greater than calculated under Attachment T (Block Curtailment Procedures) prior to the Autoscheduling event in Question.

EXHIBIT B-1
REQUIRED MODELS

- ABB Ultra 1560 kVA inverter PSS/E model
- ABB Ultra 1560 kVA inverter PSCAD model
- ABB Ultra 1560 kVA inverter ASPEN model

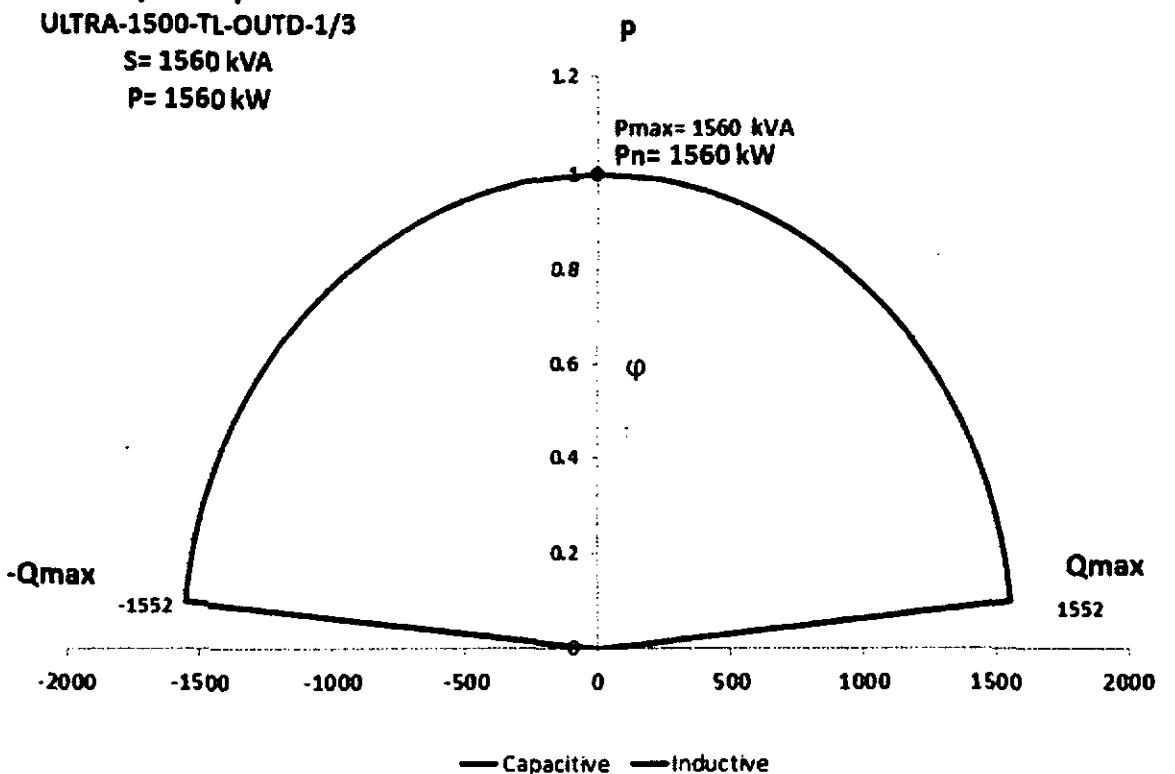
EXHIBIT B-2
REACTIVE POWER CURVE

P-Q Capability Curve:

ULTRA-1500-TL-OUTD-1/3

S= 1560 kVA

P= 1560 kW



The Reactive Power Curve above describes the technical capability of the ULTRA 1500 inverter in terms of apparent, active and reactive power. The inverter is able to operate from unity to 0.1 per unit power factor, thus showcasing complete semicircular capability. Adjusting of the inverters to operate at any power factor outside 0.9 per unit power factor needs field adjustment due to compliance with UL 1741 certification. Seller and Company agree to the field adjustment needed for such operation.

ATTACHMENT C
METHODS AND FORMULAS FOR MEASURING PERFORMANCE STANDARDS

1. Performance Standards as defined below shall be used, in part, to govern actions by Company to curtail the Actual Output of the Facility for purposes of maintaining power quality on Company System. Specific standards are defined for:
 - Ramp Rate (RR)
 - Instantaneous Power Fluctuation Rate
 - Sub-minute Power Fluctuation Rate
2. 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". 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 shall be 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.
3. Ramp Rate Calculation:

$$RR = MW_i - MW_{i-30}$$

Where:

RR = Ramp Rate, may be calculated once every scan

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

MW_i = The instantaneous MW analog value for the present scan

4. Power Fluctuation Rate Calculations:
 - a. Instantaneous

$$I = MW_i - MW_{i-1}$$

Where:

I = Instantaneous Power Change, calculated once every scan

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

MW_t = The instantaneous MW analog value for the present scan

b. Subminute Average:

$$A_t = \frac{\sum_{i=1}^{30} |MW_i - MW_{-1}|}{30}$$

Where:

A_t = Subminute Average, calculated once every 30 scans

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

MW_t = The instantaneous MW analog value for the present scan

ATTACHMENT D
CONSULTANTS LIST

- AWS Truepower
- Leidos, Inc.
- DNV GL
- Meterologica
- Electric Power Systems, Inc.
- Electranix Corporation

ATTACHMENT E
SINGLE-LINE DRAWING

(To be attached as per Section 1(a) of Attachment B)

OL1

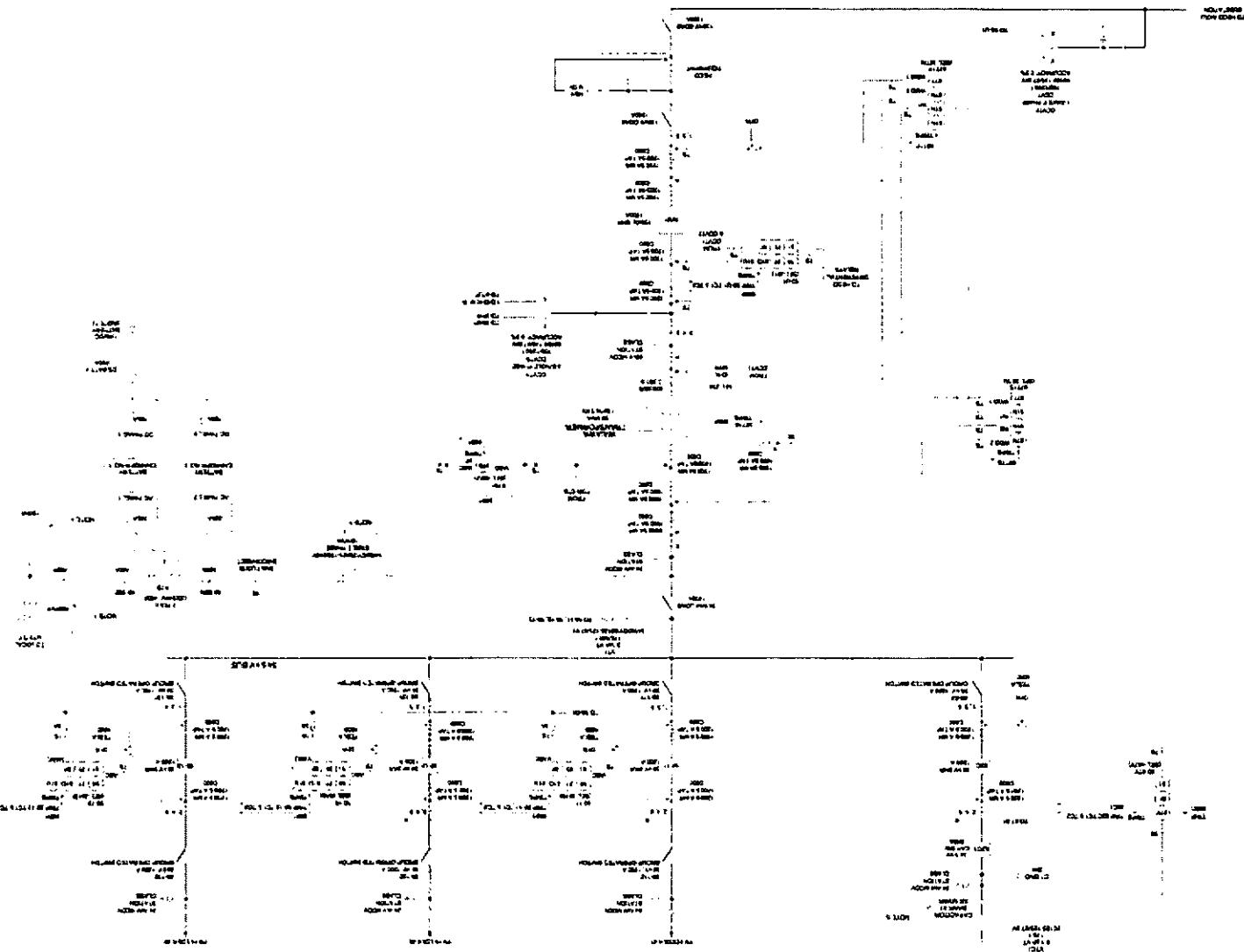
ONLINE



first

PRELIMINARY

Welding
Boiler
Plant
Schematic
Diagram
Version 1
Date: 10/10/2008
Page: 182
Total Pages: 282



ATTACHMENT F
RELAY LIST AND TRIP SCHEME

(To be attached as per Section 1(a) of Attachment B.)

Whiawa Solar

| EQUIPMENT PROTECTED | ANSI NO. | DESCRIPTION | TYPE | UNIT NUMBER | NAME | DT | 32.01 | 32.11 | 32.12 | 32.13 | 32C | BREAKERS TRIPPED | | NOTES | Kw/Hr | |
|----------------------|----------|----------------------------------|---------|-------------|------|----|-------|-------|-------|-------|-----|------------------|-----|-------|-------|--|
| | | | | | | | | | | | | DT1 | DT2 | | | |
| TRANSFORMER #1 | 471 | CURRENT DIFFERENTIAL | SEL-187 | 740 | | | | | | | | | | | | |
| | 472 | RESTRICTED FAULT | | | | | | | | | | | | | | |
| | 425 | NEUTRAL FAULT OVERCURRENT | | | | | | | | | | | | | | |
| | 43 | TIME OVERCURRENT | | | | | | | | | | | | | | |
| | 50 | INSTANTANEOUS OVERCURRENT | | | | | | | | | | | | | | |
| | 480 | SUDDEN PRESSURE | 780 | | | | | | | | | | | | | |
| HIGH SIDE BUS 1 | 53 | FAST OVERCURRENT | SEL-182 | | | | | | | | | | | | | |
| | 50 | INSTANTANEOUS OVERCURRENT | | | | | | | | | | | | | | |
| | 50P/50P | FAULT RELAY | | | | | | | | | | | | | | |
| | 810 | OVER FREQUENCY | | | | | | | | | | | | | | |
| | 815 | UNDER FREQUENCY | | | | | | | | | | | | | | |
| | 22 | UNDER VOLTAGE | | | | | | | | | | | | | | |
| | 23 | OVER VOLTAGE | | | | | | | | | | | | | | |
| | 25 | VOLTAGE CHECK | | | | | | | | | | | | | | |
| LOW SIDE BUS 1 | 470 | CURRENT DIFFERENTIAL | SEL-187 | | | | | | | | | | | | | |
| FEEDER 1 (THROUGH 3) | 52 | FARE OVERCURRENT | SEL-182 | | | | | | | | | | | | | |
| (REGULATORS DOWN) | 50 | INSTANTANEOUS OVERCURRENT | SEL-182 | | | | | | | | | | | | | |
| | 50P/50P | BREAKER FAULT | | | | | | | | | | | | | | |
| | 810 | OVER FREQUENCY | | | | | | | | | | | | | | |
| | 815 | UNDER FREQUENCY | | | | | | | | | | | | | | |
| | 22 | UNDER VOLTAGE | | | | | | | | | | | | | | |
| | 23 | OVER VOLTAGE | | | | | | | | | | | | | | |
| | 47 | DIRECTIONAL OVERCURRENT | | | | | | | | | | | | | | |
| | 470 | DIRECTIONAL BOUNDARY OVERCURRENT | | | | | | | | | | | | | | |
| CAPACITOR BANK 1 | 51 | TIME OVERCURRENT | SEL-182 | | | | | | | | | | | | | |
| | 472 | VOLTAGE DIFFERENTIAL | | | | | | | | | | | | | | |
| | 50P/50P | BREAKER FAULT | | | | | | | | | | | | | | |

PRELIMINARY
NOT FOR CONSTRUCTION

first



Bureau of Land Management
2000 Main Avenue, Suite 200
Albuquerque, NM 87102
(505) 248-7200
Fax: (505) 248-7201
http://www.blm.gov/nm

U.S.
General Land Office
U.S. Department of the Interior
U.S. Fish and Wildlife Service
U.S. Forest Service
U.S. National Park Service

U.S. Bureau of Reclamation
U.S. Army Corps of Engineers

U.S. Environmental Protection Agency

U.S. Geological Survey

U.S. National Oceanic and Atmospheric Administration

U.S. National Science Foundation

U.S. Nuclear Regulatory Commission

U.S. Postal Service

U.S. Small Business Administration

U.S. Space Agency

U.S. State Department

U.S. Transportation Department

U.S. Treasury Department

U.S. Veterans Affairs Department

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ATTACHMENT G
COMPANY-OWNED INTERCONNECTION FACILITIES

1. **Description of Company-Owned Interconnection Facilities.**

- (a) **General.** Company shall furnish or construct (or may have Seller furnish or construct, in whole or in part), own, operate and maintain all Interconnection Facilities required to interconnect Company System with Facility at 138,000 volts, up to the Point of Interconnection (collectively, the "Company-Owned Interconnection Facilities"). For the avoidance of doubt, Seller will not design, furnish or construct any of the Company-Owned Interconnection Facilities.
- (b) **Site.** Where any Company-Owned Interconnection Facilities are to be located on the Site, Seller shall provide, at no expense to Company, a location and access acceptable to Company for all such Company-Owned Interconnection Facilities, as well as an easement, license or right of entry to access such Company-Owned Interconnection Facilities. Seller shall provide backup 208VAC 3 phase station service power, at no expense to Company.
- (c) **IRS.** An IRS addressing Facility requirements was completed for the Project in accordance with the IRS Letter Agreement, and the results have been incorporated in Attachment B (Facility Owned by Seller) and this Attachment G (Company-Owned Interconnection Facilities) as appropriate.
- (d) **Seller's Payment Obligations.** Company-Owned Interconnection Facilities, for which Seller has agreed to pay, whether designed, engineered and constructed by Seller or Company, include:
 - (i) 138 kV Line Extension;
 - A. 138 kV poles and related materials (138 kV framing, conductor, etc.) to extend Kahe-Wahiawa line into Akau Substation;
 - B. 138 kV overhead line extension of the existing Kahe - Wahiawa 138 kV line from a connection point at structure P.75A to the Point of Interconnection at the Akau Substation;

- C. The Akau 138 kV overhead line extension of the existing Kahe-Wahiawa 138 kV line from a connection point at structure P.75B to the Point of Interconnection at the Akau Substation;
 - D. 138 kV pole on Kahe-Wahiawa to mitigate excessive insulator swing and clearance to structure violation; and
 - E. Overhead Fiber Optic Ground Wire (OPGW), Shield wire and related materials into Akau Substation;
 - (1) Overhead OPGW and Shield Wire into Akau Substation from structure P.75A and from structure P.75B; and
 - (2) Reroute existing overhead OPGW on Company's existing transmission line to facilitate new OPGW to be routed on two (2) diverse routes into Akau Substation.
- (ii) A manually operated, lockable, group operated switch prior to the Facility substation. Company will install a 138 kV drop into Company-provided deadend structure.
- (iii) Relaying/Protection System upgrades at Wahiawa;
- (iv) The Akau Substation including:
- A. Open air 138 kV bus in a ring bus arrangement (including disconnect switches for line to collector substation);
 - B. Four (4) 138 kV circuit breakers (2000A, 40kA interrupt with brushing CT's) and associated disconnect switches;
 - C. Then (10) 138 kV class, 80500-115/69 volt (240/400:1) two (2) winding voltage transformers with steel support structures;
 - D. One (1) normal 150kVA 12.5kV distribution feed station 3 phase power source to a 12.5kV-208V 3 phase 150kVA pad mount transformer and one (1) emergency 150kVA 208V sources 3 Phase from the customers substation. Both 208V source feed an

automatic transfer switch which feeds AC distribution panels.

E. Control House including:

- (i) Control and relaying and setting changes;
- (ii) One (1) TESLA 4000 DFR;

(v) Supervisory control and communications equipment including but not limited to:

- A. Two (2) 125 VDC Battery systems (including batteries/chargers/DC panel and monitoring equipment);
- B. SCADA/RTU, dedicated phone line(s) acceptable at Company Substation;
- C. One (1) RNS circuit for backup communications for Company SCADA;
- D. Direct Transfer Trip ("DTT") equipment at Company substation(s);
- E. Underground fiber optic cable termination in Seller provided 3' x 5' handholes: fiber optics within Company substation;
- F. Company communications multiplexer and router at Company substation;
- G. Communications battery system within Company Substation;
- H. Communications power distribution system within Company substation;
- I. Communication circuit additions and upgrades; and
- J. Outdoor fencing and yard lighting (LED).

(vi) Revenue Metering Package as provided in Section 10.1 (Metering of the Agreement);

(vii) Any additional Interconnection Facilities needed to be installed as a result of final determination of Facility switching station site, final design of Facility to enable Company to

complete the Interconnection Facilities and be compatible with Good Engineering and Operating Practices.

- (e) Revisions to Costs. 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 this Attachment G (Company-Owned Interconnection Facilities), are subject to revision if (i) before approving this Agreement, the PUC approves a power purchase agreement for another non-Company owned electric generating facility ("Second NUG Contract") to supply electric energy to Company using the same line to which Facility is to be connected or (ii) the line to which 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.
- (f) Review of the Listing and Costs. If the Commercial Operations Date is not by December 31, 2016, the listing of the Company-Owned Interconnection Facilities required in this Agreement and the cost-estimates for such Company-Owned Interconnection Facilities are subject to review and revision. 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. In addition, such review and revision may require that the Company re-perform or update the IRS at the Seller's expense.
- (g) Responsibility of Seller and Company. The general responsibilities of Seller and Company for the design, procurement, installation, programming/testing, and maintenance/ownership of equipment at the Facility and the Company-Owned Interconnection Facilities is specified in Matrix G-1 (Responsibilities Matrix).

2. Construction and Support Services By Seller.

(a) Construction and Support Services By Seller.

- (i) Seller (and/or its third Party consultants or contractors (collectively, "Contractors")) will

design, engineer, construct, test and place in service, at Seller's expense:

- A. The items identified in Matrix G-1 (Responsibilities Matrix) as being the responsibility of Seller to construct.

(ii) Seller shall provide the necessary support for the Company's 138 kV overheadline extension work, which may include, but not limited to:

- A. Furnish surveyed topographical drawing including contour lines of project areas and beyond as needed in State Plane coordinates with overlay of the Facility and Company pole line route(s) indicating pole locations and anchors in CADD format acceptable to Company, if such information is available.
- B. Graded access roads including gravel if required by Company to provide sufficient vehicle access to Company poles and anchors by Company trucks and cranes.
- D. Graded level pads to provide vehicle working areas around all Company poles and anchors.
- E. Grading of the areas beneath the Company's overhead lines as needed to provide required ground clearance.
- F. Grubbing and clearing of vegetation within Company's easement area or as required.
- G. Acquire all necessary permits, easements, and right of entry to access such Company-Owned Interconnection Facilities.

(b) [RESERVED]

(c) [RESERVED]

(d) [RESERVED]

(e) Inspection of Company Constructed Company-Owned Interconnection Facilities. Company inspectors will be allowed access to the construction sites for inspections and to monitor construction work. The inspector shall have the authority to work with the appropriate

construction supervisor to stop any work that does not meet the Standards.

(f) Acceptance Test Procedures.

(i) Seller shall provide Company with at least fourteen (14) Days advance written notice of the Acceptance Test, which shall be scheduled during normal business hours on a Business Day. No electric energy will be delivered from Seller to Company during this Acceptance Test. No later than thirty (30) Days prior to conducting the Acceptance Test, Company and Seller shall agree on a written protocol setting out the detailed procedure and criteria for passing the Acceptance Test. Attachment N (Acceptance Test General Criteria) provides general criteria to be included in the written protocol for the Acceptance Test. Within fifteen (15) Business Days of successful completion of the Acceptance Test and Company's receipt of the final report setting forth the results of the Acceptance Test, Company shall notify Seller in writing whether the Acceptance Test has been passed and, if so, the date upon which the Acceptance Test was passed. Energization of the Facility shall occur after the Acceptance Test is passed. For the avoidance of doubt, and given Company is constructing the Company-Owned Interconnection Facilities, the Acceptance Test will be written to test the key substation protection interfaces between the Seller's Facility and the Company-Owned Interconnection Facilities. The Acceptance Test will not include testing that is reserved for the Control System Acceptance Test.

(ii) Company will be present when the Acceptance Test is conducted, and Seller shall timely correct any deficiencies identified during the Acceptance Test. Seller will be responsible for the cost of Company personnel (and/or Company contractors) performing the duties associated with the Acceptance Test.

(g) [RESERVED]

3. Seller Payment To Company for Company-Owned Interconnection Facilities and Review Of Facility.

(a) Seller Payment to Company.

- (i) Seller shall pay the Total Estimated Interconnection Cost which is comprised of the estimated costs of (aa) acquiring, constructing and installing the Company-Owned Interconnection Facilities to be designed, engineered and constructed by Company, (bb) the engineering and design work (including but not limited to Company, affiliated Company and contracted engineering and design work) associated with (i) the application process for the PUC Approval Order, (ii) developing such Company-Owned Interconnection Facilities and (iii) reviewing and specifying those portions of Facility which allow interconnected operations as such are described in Attachment B (Facility Owned by Seller) (collectively, the "Engineering and Design Work"), and (cc) conducting the Acceptance Test and Control System Acceptance Test. The Total Actual Interconnection Cost (the actual cost of items (aa) through (cc)) are the "Total Interconnection Cost".
- (ii) Summary List of Company-Owned Interconnection Facilities and Related Services to be designed, engineered and constructed by Company is provided in Section 1(d) (Seller's Payment Obligations) of this Attachment G (Company-Owned Interconnection Facilities).
- (iii) The following summarizes the Total Estimated Interconnection Cost of the Company-Owned Interconnection Facilities to be designed, engineered and constructed by Company:

EXHIBIT 1
PAGE 192 OF 282

| | | |
|---|--|-------------|
| 1 | Remote substation work at Wahiawa | \$306,810 |
| 2 | Remote telecom work at Wahiawa | \$2,720,042 |
| 3 | Company design, procure and install the Akau Substation including but not limited to: --138kV ring bus --138kV circuit breakers and disconnect switches --voltage transformers and support structures --misc, transformers, distribution panels --Control House including; (i) Control and relaying for 138kV facilities; (ii) One (1) TESLA 4000 DFR; (iii) Supervisory control and communications equipment (including but not limited to, SCADA/RTU) (iv) Two 125VDC battery systems (including batteries/chargers/DC panel and monitoring equipment) (v) 48VDC battery system (including batteries/charger/DC panel and monitoring equipment) --dedicated phone line --RNS circuits --DTTs --steel support structures --fencing and yard lighting | \$7,031,649 |
| 4 | Company design, procure and install the following telecom work including but not limited to: (Matrix G-2) --multiplexer and router --battery system --power distribution system --circuit additions and upgrades | \$1,015,686 |
| 5 | Company design, procure and install the following T&D work: --Extend Kahe-Wahiawa 138kV from P75A to POI at Akau Substation --Extend Kahe - Wahiawa 138kV from P75B to POI at Akau Substation. --138kV pole on Kahe - Wahiawa to mitigate excessive insulator swing and clearance to structure violation --OPGW and shield wire into Akau Substation from P75A-P75B --Reroute OPGW on two diverse routes to Akau Substation | \$1,942,250 |
| 6 | Company project management, construction management, outside engineering, meter procurement and installation | \$469,988 |

The Total Estimated Interconnection Cost is \$13,486,425.

- (b) Total Estimated Interconnection Costs. The Total Estimated Interconnection Cost, which, except as otherwise provided herein, is non-refundable, shall be paid in accordance with the following schedule:

- (i) Initial Payment: Prior to the Execution Date, Seller has paid \$260,000.00 to Company;
- (ii) Company-Owned Interconnection Facilities
Prepayment: No later than December 20, 2014 ("Company-Owned Interconnection Facilities Prepayment Date"), FOUR MILLION SIXTEEN THOUSAND THREE HUNDRED FORTY-SEVEN DOLLARS (\$4,016,347), a portion of the Company-Owned Interconnection Facilities Prepayment Amount shall be due and payable by Seller to Company;
 - A. Company shall not be obligated to perform any Engineering and Design Work or procure and construct Company-Owned Interconnection Facilities until Seller pays the amounts in Section 3(b)(i) and Section 3(b)(ii) of this Attachment G (Company-Owned Interconnection Facilities), and receipt of such payment shall constitute Seller's irrevocable authorization to Company to perform such work.
- (iii) Remote Substation Construction Portion of Company-Owned Interconnection Facilities
Prepayment: A second payment of the Company-Owned Interconnection Facilities Prepayment Amount to cover the costs of the remote substation construction work in the amount of NINE HUNDRED FORTY-FIVE THOUSAND SIXTY-ONE DOLLARS (\$945,061) shall be due and payable by Seller to Company no later than 15 Days following Company's written notice requesting such payment.
 - A. Company shall not be obligated to perform any work, including Engineering and Design Work or procure and construct Company-Owned Interconnection Facilities once it has expended the monies received pursuant to Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities) until Seller pays the amount in this Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment) of this Attachment G

(Company-Owned Interconnection Facilities), and receipt of such payment shall constitute Seller's irrevocable authorization to Company to perform such procurement and construction work.

- B. Seller shall not be obligated to make the payment required under this Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment) of Attachment G (Company-Owned Interconnection Facilities) prior to July 1, 2015. However, Company shall issue its written notice requesting such payment when Company reasonably determines that the unexpended balance of the monies received pursuant to Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities) is insufficient to allow Company to prosecute the work without interruption for more than 30 Days. If Company issues such notice prior to June 16, 2015 (i.e., more than 15 Days prior to July 1, 2015), and if Seller chooses not to make payment until July 1, 2015, then (i) Company shall stop work when the monies received pursuant to Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities) have been expended (taking into account a reserve for any demobilization costs that Company reasonably anticipates incurring as a result of such work stoppage), (ii) Company shall resume work only after it has received the payment required under this Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment), (iii) Seller shall be responsible for all demobilization and remobilization costs incurred by Company as a result of such work

stoppage and (iv) the Company Milestones shall be extended for the period of time by which such work stoppage and the resulting demobilization and remobilization delays Company in achieving such Company Milestones.

- (iii) Balance of Company-Owned Interconnection Facilities Prepayment: The balance of the Company-Owned Interconnection Facilities Prepayment Amount of EIGHT MILLION TWO HUNDRED SIXTY-FIVE THOUSAND SEVENTEEN DOLLARS (\$8,265,017) shall be due and payable by Seller to Company no later than 15 Days following Company's written notice requesting such payment.
- A. Company shall not be obligated to perform any work, including Engineering and Design Work or procure and construct Company-Owned Interconnection Facilities once it has expended the monies received pursuant to Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities) until Seller pays the amount in this Section 3(b)(iv) (Balance of Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities), and receipt of such payment shall constitute Seller's irrevocable authorization to Company to perform such procurement and construction work.
- B. Seller shall not be obligated to make the payment required under this Section 3(b)(iv) (Balance of Company-Owned Interconnection Facilities Prepayment) of Attachment G (Company-Owned Interconnection Facilities) prior to September 1, 2015. However, Company shall issue its written notice requesting such payment when Company reasonably determines that the unexpended balance of the monies received pursuant to Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment) of

this Attachment G (Company-Owned Interconnection Facilities) is insufficient to allow Company to prosecute the work without interruption for more than 30 Days. If Company issues such notice prior to August 17, 2015 (i.e., more than 15 Days prior to September 1, 2015), and if Seller chooses not to make payment until September 1, 2015, then (i) Company shall stop work when the monies received pursuant to Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities) have been expended (taking into account a reserve for any demobilization costs that Company reasonably anticipates incurring as a result of such work stoppage), (ii) Company shall resume work only after it has received the payment required under this Section 3(b)(iv) (Balance of Company-Owned Interconnection Facilities Prepayment), (iii) Seller shall be responsible for all demobilization and remobilization costs incurred by Company as a result of such work stoppage and (iv) the Company Milestones shall be extended for the period of time by which such work stoppage and the resulting demobilization and remobilization delays Company in achieving such Company Milestones.

- (c) True-Up. The final accounting shall take place within one hundred twenty (120) Days of the first to occur of (i) the Commercial Operations Date, (ii) the date this Agreement is declared null and void under either Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval Date), or Section 13.8 (Company Milestones), or (iii) the date this Agreement is terminated, whichever occurs first. Upon completion of the final accounting, Company shall deliver to Seller an invoice for payment of the amount, if any, of 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. Payment of such invoice shall be made within thirty (30) Days of receipt of such invoice from Company. If the Total Actual Interconnection Cost is less than the payments received by Company as the Total Estimated Interconnection Cost, Company shall repay the difference to Seller within thirty (30) Days of the final accounting.

- (d) Audit Rights. Seller shall have the right for a period of one (1) year following receipt of the invoice: (i) upon reasonable prior notice, to audit the books and records of Company to the limited extent reasonably necessary to verify the basis of the Total Actual Interconnection Cost, and (ii) to dispute the portion of the Total Actual Interconnection Cost which (if any) exceeds the Total Estimated Interconnection Cost. Seller shall not have the right to audit any other financial records of Company. Company shall make such information available during normal business hours at its offices in Hawaii. Seller shall pay Company's reasonable actual, verifiable costs for such audits, including allocated overhead.
- (e) Ownership. All Company-Owned Interconnection Facilities including those portions, if any, provided, or provided and constructed, by Seller shall be the property of Company.

4. Ongoing Operation and Maintenance Charges.

- (a) Prior to the Transfer Date. Seller shall operate and maintain, at its sole cost and expense, Company-Owned Interconnection Facilities that it or its Contractors constructed, if any, prior to the Transfer Date.
- (b) On or After the Transfer Date. On and after the Transfer Date, Company shall own, operate and maintain Company-Owned Interconnection Facilities.
- (c) Monthly Bill. Company shall bill Seller monthly for any costs incurred in operating, maintaining and replacing (to the extent not covered by insurance) Company-Owned Interconnection Facilities. Company's costs will be determined on the basis of, but not limited to, direct payroll, material costs, applicable overhead at the time incurred, consulting fees and applicable taxes. Seller shall, within thirty (30) Days after the billing date,

reimburse Company for such monthly billed operation and maintenance charges.

5. Relocation of Company-Owned Interconnection Facilities.

- (a) In the event that the Land Rights include a relocation clause and such clause is exercised or if Company-Owned Interconnection Facilities must be relocated for any other reason not caused by Company, Seller shall bear the cost of such relocation. Prior to the relocation of the Company-Owned Interconnection Facilities Company shall invoice Seller for the total estimated cost of relocating the Company-Owned Interconnection Facilities (the "Total Estimated Relocation Cost"). Seller shall, within thirty (30) Days after the invoice date, pay to Company the Total Estimated Relocation Cost.
- (b) Once the relocation of the Company-Owned Interconnection Facilities is complete, Company shall conduct a final accounting of all costs related thereto. Within thirty (30) Days of the final accounting, which shall take place within one hundred and twenty (120) Days of completion of the relocation of Company-Owned Interconnection Facilities, Seller shall remit to Company the difference between the Estimated Relocation Cost paid to date and the total actual relocation cost incurred by Company (the "Total Actual Relocation Cost"). If the Total Actual Relocation Cost is less than the payments received by Company as the Total Estimated Relocation Cost, Company shall repay the difference to Seller within thirty (30) Days of the final accounting.

6. Guarantee for Interconnection Costs.

- (a) Standby Letter of Credit. To ensure payment by Seller of all costs and expenses incurred by Company (i) 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 3 (Seller Payment to Company for Company-Owned Interconnection Facilities and Review of Facility) of this Attachment G (Company-Owned Interconnection Facilities), and (ii) if applicable, in excess of the Total Estimated Relocation Costs paid in connection with the relocation of the Company-Owned Interconnection Facilities as provided in Section 5 (Relocation of Company-Owned Interconnection

Facilities), Seller shall obtain an Irrevocable Standby Letter of Credit with no Documentary Requirement ("Standby Letter of Credit") in accordance with the requirements of Section 6(b) (Requirements of the Standby Letter of Credit) of this Attachment G (Company-Owned Interconnection Facilities), wherein Company shall receive payment from the bank upon request by Company.

- (b) Requirements of the Standby Letter of Credit. The Standby Letter of Credit shall be (i) in an amount not less than twenty-five percent (25%) of the Total Estimated Interconnection Cost or Total Estimated Relocation Cost, as applicable, and (ii) in substantially in the form attached to this Agreement as Attachment M (Form of Letter of Credit) from a bank or other financial institution located in the United States with a credit rating of "A-" or better. If the rating (as measured by Standard & Poor's) of the bank or financial institution issuing the Standby Letter of Credit falls below A-, Company may require Seller to replace the Standby Letter of Credit with a Standby Letter of Credit from another bank or financial institution located in the United States with a credit rating of "A-" or better. In connection with the construction of the Company-Owned Interconnection Facilities, the Standby Letter of Credit shall be effective from the earlier of (aa) thirty (30) Days following the Effective Date, or (bb) the date that Seller requests Company to order equipment or commence construction on Company-Owned Interconnection Facilities. In connection with the relocation of the Company-Owned Interconnection Facilities, if applicable, the Standby Letter of Credit shall be effective within thirty (30) Days after Seller receives the invoice from Company for the Total Estimated Relocation Cost as set forth in Section 5 (Relocation of Company-Owned Interconnection Facilities) of this Attachment G (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. Seller shall provide to Company within fourteen (14) Days of the date the Standby Letter of Credit is to be effective as aforesaid, a document from the bank which indicates that such a Standby Letter of Credit has been established.

(c) Other Form of Security. Notwithstanding the foregoing, in lieu of a Standby Letter of Credit, Company may, at its sole discretion, agree in writing to accept such other form of security as Company deems to provide Company with protection equivalent to a Standby Letter of Credit.

7. Land Restoration.

- (a) Definition of "Land". For the purposes of this Attachment G (Company-Owned Interconnection Facilities), "Land" means any portion of the Site and any other real property where any Company-Owned Interconnection Facilities are located.
- (b) Removal of Interconnection Facilities. After termination of this Agreement or in the event this Agreement is declared null and void under either Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller), if requested by Company, Seller shall, at its sole cost and expense, remove (i) the Company-Owned Interconnection Facilities from the Land and (ii) to the extent required by the Land owner, the Seller-Owned Interconnection Facilities from the Land; provided, however, that Company may elect to remove all or part of the Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities from the Land because of operational concerns over the removal of such Interconnection Facilities, in which case Seller shall reimburse Company for its reasonable costs to remove such Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities. To the extent Seller is obligated to remove Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities, Seller shall complete such removal within one hundred eighty (180) Days of termination of this Agreement (or declaration that the Agreement is null and void under Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller)), or as otherwise agreed to by both Parties in writing.

- (c) Restoration of the Land. After the termination of this Agreement (or declaration that the Agreement is null and void under either Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller)) and removal of the Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities, as the case may be, Seller shall, at its sole cost and expense, (i) to the extent required by the Land owner, restore the Land formerly occupied by the Company-Owned Interconnection Facilities to its condition prior to construction of such Company-Owned Interconnection Facilities and (ii) to the extent required by the Land owner, restore the Land formerly occupied by the Seller-Owned Interconnection Facilities to its condition prior to construction of such Seller-Owned Interconnection Facilities. Land restoration shall be completed within one hundred eighty (180) Days of termination of this Agreement (or declaration that the Agreement is null and void under either Section 12.5 (Prior to Effective Date), Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval), Section 13.8 (Company Milestones), or Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller)), or as otherwise agreed to by both Parties in writing.

8. Transfer of Ownership/Title.

- (a) Transfer of Ownership and Title. On the Transfer Date, Seller shall transfer to Company all right, title and interest in and to Company-Owned Interconnection Facilities to the extent such facilities were designed and constructed by Seller and/or its Contractors together with (i) all applicable manufacturers' or Contractors' warranties which are assignable, if any, and (ii) all Land Rights necessary to operate and maintain Company-Owned Interconnection Facilities on and after the Transfer Date. 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. For the avoidance of doubt, Seller will not design, furnish or construct any of the Company-Owned Interconnection Facilities.
- (b) No Liens or Encumbrances. Company's title to and ownership of 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) Form of Documents. The transfers to be made to Company pursuant to this Section 8 (Transfer of Ownership/Title) of Attachment G (Company-Owned Interconnection Facilities) shall not require any further payment by Company. The form of the document to be used to convey title to the Company-Owned Interconnection Facilities that were designed and constructed by or on behalf of Seller shall be substantially in the form set forth in Attachment H (Form of Bill of Sale and Assignment). The form of the document(s) to be used to assign leases shall be substantially in the form set forth in Attachment I (Form of Assignment of Lease and Assumption). To the extent Land Rights other than leases are transferred to Company, appropriate modifications will be made to Attachment I (Form of Assignment of Lease and Assumption) to effectuate the transfer of such Land Rights.

9. Governmental Approvals for Any Company-Owned Interconnection Facilities Constructed by Seller.

Seller shall obtain at its sole cost and expense all Governmental Approvals necessary for the construction, ownership, operation and maintenance of the Company-Owned Interconnection Facilities. Company shall provide Seller a detailed design submission package in order to allow Seller to submit the Government Approvals. For Company-Owned Interconnection Facilities to be constructed by Company, Seller shall provide all Governmental Approvals necessary for the construction of such Company-Owned Interconnection Facilities prior to the commencement of construction by Company. For all other Governmental Approvals for Company-Owned Interconnection Facilities, Seller shall provide these prior to the Transfer Date. On or before the Transfer Date, Seller shall provide Company with (i) copies of all such Governmental Approvals obtained by Seller regarding the construction, ownership, operation and maintenance of Company-Owned Interconnection Facilities that Seller and/or its Contractors constructed and (ii) documentation regarding the satisfaction of any condition or requirement set forth in any Governmental Approvals for Company-Owned Interconnection Facilities or that such Governmental Approvals have otherwise have been closed with the issuing Governmental Authority.

10. Land Rights.

Seller shall obtain at its sole cost and expense all Land Rights that are required to construct, own, operate and maintain the Company-Owned Interconnection Facilities. Without limitation to the preceding sentence, Seller shall pay all surveying and mapping costs, appraisal fees, document preparation fees, recording fees or other costs. Seller shall use commercially reasonable efforts to obtain on behalf of the Company perpetual Land Rights for the Company-Owned Interconnection Facilities. Such Land Rights shall contain terms and conditions which are acceptable to Company and the documents setting forth the Land Rights shall be provided in advance of execution to Company for its review and approval and shall be recorded if required by Company. Following the Execution Date, Seller shall provide as part of the Monthly Progress Report the status of negotiations with landowner(s) regarding the Land Rights, if applicable. Notwithstanding the foregoing, Company shall have the right in its sole discretion, at any time upon notice to Seller, to communicate directly with the landowner(s) and/or participate in the negotiations with landowner(s) for the Land Rights. For so long as Seller has the right under this Agreement to sell electric 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.

| MATRIX G-1 | | | | | | |
|---|--|-----------------------|------------------|----------|---------|-------------------------------------|
| 138kV Waivered Interconnection Projects | | Responsibility Matrix | | | | |
| 11/6/2014 rev4 | | | | | | |
| Item | Equipment | Data | Engineer/ Design | Purchase | Install | Program & Test Individual Equipment |
| 138kV Company SUBSTATION | | | Seller | n/a | n/a | n/a |
| 1 Survey of facility | Boundaries, topo, existing underground facilities, property lines, easements. | Seller | n/a | n/a | n/a | n/a |
| 2 Recognition of ecological and environmental conditions on site and preventive measures to avoid interference. | Religious, burial, and cultural sites, historical trails, biological concerns, etc. | Seller | n/a | n/a | n/a | n/a |
| 3 Survey drawings of facility | Boundaries, topo, existing underground facilities, property lines, easements. | Seller | n/a | n/a | n/a | n/a |
| 4 Geotechnical Study of work area (Borings and Ground Grid Soils Test) | Research, sampling, analysis, report | Company | Company | n/a | n/a | n/a |
| 5 Evaluation of geotechnical report | include considerations for drainage, RHO, soil resistivity, ground grid (include area outside of chain link fence), structures, etc. | Company | n/a | n/a | n/a | n/a |
| 6 Site excavation and grading | Seller | Seller | Seller | n/a | n/a | n/a |
| 7 Station Service (208VAC, 150kVA - emergency feed from IPP) | Seller | Seller | Seller | n/a | n/a | Seller |
| 8 Retaining Wall (if Required) | Seller | Seller | Seller | n/a | n/a | Seller |
| 9 Access road, incl. permits as required | Seller | Seller | Seller | n/a | n/a | Seller |
| 10 Access roadway to Company Substation | Seller | Seller | Seller | n/a | n/a | Seller |
| 11 Temporary construction fence (if applicable) | Seller | Seller | Seller | n/a | n/a | Seller |
| 12 Provide area for temporary parking, lay-down, material storage and construction trailer | including grounding | Seller | Seller | n/a | n/a | Seller |
| 13 Temporary parking | Seller | Seller | Seller | n/a | n/a | Seller |
| 14 Temporary lay-down areas, areas for material storage | Seller | Seller | Seller | n/a | n/a | Seller |
| 15 Finished roadway & parking within substation | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 16 Yard Lighting | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 17 Substation Chain Link Fence including gates and security top wires | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 18 Substation Grounding Study | Company EPC | Company EPC | Company EPC | n/a | n/a | n/a |
| 19 Substation grounding including for fence, structures, equipment, etc. | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 20 Gravel backfill | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 21 Handholes | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 22 Raceways (UG, exposed runs, flex) | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 23 138kV terminal structures in Company substation | Foundation | Company EPC | Company EPC | n/a | n/a | Company |
| 24 138kV terminal structures in Company substation | Structure, electrical work | Company EPC | Company EPC | n/a | n/a | Company |
| 25 Bus, equipment structures in Company substation | Foundation | Company EPC | Company EPC | n/a | n/a | Company |
| 26 Bus, equipment structures in Company substation | Structure, electrical work | Company EPC | Company EPC | n/a | n/a | Company |
| 27 Concrete Equipment Pads (FOR CBs, Transf., etc.) | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 28 Insulators | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 29 Bussing (does not include bussing from fence to within 138kV IPP Substation) | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |
| 30 138kV Circuit Breakers | Company EPC | Company EPC | Company EPC | n/a | n/a | Company |

| 138kV Waivered Interconnection Projects | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|
| Responsibility Matrix | | | | | |
| 11/6/2014 rev4 | | | | | |
| Hawaiian Electric Company | Company | Company | Company | Company | Company |
| Hawaiian Electric Company's EPC Engineer (Prime Contractor) | Company | Company | Company | Company | Company |
| Developer | Seller | Seller | Seller | Seller | Seller |
| 31 138kV disconnect switches | Company EPC |
| 32 Lightning Arresters | Company EPC |
| 33 Potential Transformers | Company EPC |
| 34 Fused Disconnects | Company EPC |
| 35 Station Service (208VAC, 150KVA - normal feed - 12.5kV Dist) | Company EPC |
| 36 120/208VAC station power system (Tsf Sec Ckt Bkrs, ATS, panels) | Company EPC | Company EPC | Company EPC | Company EPC | n/a |
| 37 LV Pullboxes, Junctions boxes | Company EPC |
| Control Cables from yard to control building including to panels, relay panels, etc. | Company EPC |
| 38 Concrete Pad for Control Building | Company EPC | Company EPC | Company EPC | Company EPC | n/a |
| Premanufactured Control Building(HVAC system to maintain control room @ 25° C) with separate Battery room. | Company EPC |
| 40 Cable trench/conduits/tray system for equipment wiring | Company EPC |
| 42 120/240Vac panel (Station Power source) | Company EPC |
| 43 Lighting and general use 120Vac receptacles. | Company EPC |
| 44 120Vac branch circuit from 120/240Vac Panel to RTU | Company EPC |
| 45 125Vdc Battery and Battery Charger (capable to maintain 125Vdc for a minimum of 12 hours after loss of ac power) | Company EPC | Company EPC | Company EPC | Company EPC | n/a |
| 46 AC Ckt Bkr for 125Vdc Battery Charger | Company EPC |
| 47 DC Ckt Bkr for 125Vdc | Company EPC |
| 48 125Vdc Panel | Company EPC |
| 49 48Vdc Battery and Battery Charger (capable to maintain 48Vdc for a minimum of 12 hours after loss of ac power) | Company EPC |
| 50 AC Ckt Bkr for 48Vdc Battery Charger | Company EPC |
| 51 DC Ckt Bkr for 48Vdc | Company EPC |
| 52 48Vdc Panel | Company EPC |
| 53 Remote Terminal Unit (RTU) a.k.a SCADA (per Company Specification No. CS-SUBST-001) | Company EPC |
| 54 DFR Panel to hold Company owned relay and monitoring equipment | Company EPC |
| 55 Tesla 4000 digital fault recorder | Company EPC |
| 56 Split core CT modules | Company EPC |
| 57 Voltage module | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 58 GPS clock | Company EPC |
| 59 Test switches (not Including Revenue Metering Test Switches) | Company EPC |
| 60 Communication Equipment Racks | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 61 IPP/IFC Cabinet | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 62 IPP/IFC Internal equipment | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 63 RTU Junction Box | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 64 RTU Junction Box internal equipment | Company EPC | Company EPC | Company EPC | n/a | n/a |
| 65 Wiring from/to IPP/IFC Cabinet | Company EPC |
| 66 Router | Company | Company | Company | Company | Company |
| 67 Multiplexing equipment | Company EPC |
| 68 Direct Transfer Trip equipment | Company EPC |
| 69 Fiber optic cabling, terminations/testing, connector/splice panels | Company EPC |
| 70 Hawaiian Telcom communication needs as outlined in the PPA attachments, including GPR Cabinet if required (notes 1, 2) | Seller | Seller | Seller | Seller | Seller |

| 138kV Waivered Interconnection Projects | | | | | | |
|---|--|----------------|----------------|----------------|----------------|----------------|
| Responsibility Matrix | | | | | | |
| (11/6/2014 rev4) | | | | | | |
| Hawaiian Electric Company | | | Company | | | |
| Hawaiian Electric Company's EPC Engineer (Prime Contractor) | | Company EPC | | | | |
| Developer | | Seller | | | | Owner & Tres |
| Overhead interconnection via loop in/out of new switchyard | | | | | | |
| 71 Easements, ROW, Permitting for OH Line | Seller | n/a | n/a | n/a | n/a | n/a |
| 72 Geotechnical reports/studies | Company Seller | n/a | n/a | n/a | n/a | n/a |
| 73 Survey - Topographic, property lines | Company EPC | n/a | n/a | n/a | n/a | n/a |
| 74 Survey - Structure staking | Company EPC | n/a | n/a | n/a | n/a | n/a |
| 75 Design of lines (loading calcs, structures, pulling tensions, NESC requirements) | Company EPC | n/a | n/a | n/a | n/a | n/a |
| 76 Access roads - Design, permit, and construction | Seller | Seller | Seller | n/a | | Seller Company |
| 77 Vegetation Management - Trimming, cutting, clearing (if applicable) | Seller | Seller | Seller | n/a | | |
| 78 Drilled pier foundations | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 79 Steel Poles | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 80 Dress Poles (insulators, hardware, signage, etc) | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 81 Wire installation - Conductor, OPGW, shield wire | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 82 Wire installation - Transfer existing wires to new structures | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 83 OPGW installation, splicing, tinning, | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 84 Deadend assemblies on switchyard dead-end structure for connection of OH lines | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 85 Grounding | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 86 Removal of existing line components, as necessary. | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | n/a |
| 87 Cleanup, restoration | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | n/a |
| 88 Fiber optic backhaul cable | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 138kV IPP SUBSTATION (Seller) | | | | | | |
| 89 Bussing (Interconnect bussing from 138kV IPP Substation to 138kV Company Substation) | Seller | Seller | Seller | n/a | | Seller |
| 90 Revenue Metering Instrument Transformer structure (for Company Metering) | Foundation | Seller | Seller | n/a | | Seller |
| Revenue Metering Instrument Transformer structure (for Company Metering) | Structure with mounting plates pre-drilled to mount Company supplied Revenue Meter PTs and CTs. Provide provisions for attaching raceway mounting channels or clamps to structure. | Seller | Seller | n/a | | Seller |
| 91 | Terminate Seller supplied bussing or conductors to Instrument Transformer pads. | Company | Company | Company EPC | Company EPC | Company |
| 92 Revenue Metering Instrument Transformers (for Company Metering) high voltage and grounding terminations. | include bussing (if bussing used for CTs) or conductors connected to Seller substation bussing. Provide "pigtail" for conductors or bussing (if used for CTs) of sufficient length to be terminated on instrument transformer. | Seller | Seller | n/a | n/a | Seller |
| 93 Taps from buss to Instrument Transformers (for Company metering) | Company EPC | Company EPC | Company EPC | Company EPC | Company EPC | Company |
| 94 Revenue Meter Socket and Cabinet | Company Seller | Company Seller | Company Seller | Company Seller | Company Seller | Company |
| 95 Revenue Meter | Company Seller | Company Seller | Company Seller | Company Seller | Company Seller | Company |
| 96 Security for Company owned equipment in Substation Yard | | | | | | Seller |

| 138kV Waivered Interconnection Projects | | | | | | |
|---|---|-------------|-------------|-------------|-------------|--------|
| Responsibility Matrix | | | | | | |
| 11/6/2014 rev4 | | | | | | |
| Hawaiian Electric Company | | | Company | | | |
| Hawaiian Electric Company's EPC Engineer (Prime Contractor) | | Company EPC | | | | |
| Developer | | Seller | | | | |
| 97 Metering wiring and above ground raceways (instrument secondary included) | | Company EPC | Company EPC | Company EPC | Company EPC | Seller |
| 98 Fiber optic cabling, terminations/testing, connector/splice panels | | Seller | Seller | Seller | Seller | Seller |
| 99 Communications conduits/demarcation handhole(s) between Company and Seller | | Seller | Seller | Seller | Seller | Seller |
| Testing (note 3) | Responsibility | | | | | |
| Local Testing | Company, EPC, Seller | | | | | |
| End-End Testing | Company, EPC, Seller | | | | | |
| Commission - Acceptance Test | Company, EPC, Seller | | | | | |
| Commission Perf Testing/Control Systems Acceptance Test | Company-SysOp, EPC, Seller | | | | | |
| Commission - Witness Testing | Company-Comm, EPC, Seller | | | | | |
| Notes | | | | | | |
| (1) Hawaiian Telcom to determine if GPR Cabinet is necessary | | | | | | |
| (2) Special construction and monthly recurring fees for Hawaiian Telcom services to be paid for by Seller | | | | | | |
| (3) Testing | | | | | | |
| Company-only testing - Local testing | Verification of wiring | | | | | |
| Company-only testing - End-to-end testing | Verification of remote signal receipt at Company equipment | | | | | |
| Walk thru inspection of Company's EPC Contractor work | Inspection of Company Equipment installed by Company's EPC Contractor | | | | | |
| Commission testing - Acceptance Test | Confirmation of Seller disconnect; verification of conformance to Company approved SLD Control power to be provided by Seller during testing in Seller Substation, by Company in Company switchyard. | | | | | |
| Commission testing - Performance testing/Control Systems Acceptance Test | Company - Substation support at remote station Confirmation of Seller adherence to PPA terms including ramp rate | | | | | |
| Commission testing - Witness testing | Company System Operation labor Performing test work including verification of tabbing, freq/volt imp Company Test & Substation labor | | | | | |

ATTACHMENT H
BILL OF SALE AND ASSIGNMENT

THIS BILL OF SALE AND ASSIGNMENT ("Bill of Sale"), made as of the _____ day of _____, 20____, by _____ ("Transferor") and _____ ("Transferee").

W I T N E S S E T H:

1. Bill of Sale. In consideration of TEN DOLLARS (\$10.00) and other good and valuable consideration paid to Transferor by Transferee, the receipt and sufficiency of which are hereby acknowledged, Transferor does hereby sell, assign and transfer over to Transferee all of Transferor's right, title and interest, in and to (i) all the tangible personal property and fixtures (including but not limited to the items set forth in Schedule H-1 (Description of Tangible Personal Property and Fixtures) attached hereto and incorporated herein), that constitutes what is referred to as the "Company-Owned Interconnection Facilities to be installed by or on behalf of Seller" (or words to similar effect) as set forth in Attachment G (Company-Owned Interconnection Facilities) to the Power Purchase Agreement for As-Available Renewable Energy dated _____, 20____ between [Transferor and Transferee] and (ii) the intangible personal property (including but not limited to the intangible personal property set forth in Schedule H-2 (Description of Intangible Personal Property) attached hereto and incorporated herein) owned by Transferor and used or to be used in the ownership, operation and maintenance of the aforesaid tangible personal property, to the extent assignable by Transferor, including without limitation, certificates of occupancy, permits, licenses, transferable warranties and guaranties, instruments, documents of title, and general intangibles pertaining to the aforesaid intangible personal property.

2. Warranty of Title. Transferor hereby warrants to Transferee that Transferor is the legal owner of the aforesaid tangible personal property and the aforesaid intangible personal property (including but not limited to the property set forth in Schedule H-1 (Description of Tangible Personal Property and Fixtures) and Schedule H-2 (Description of Intangible Personal Property)), and that said property is being sold, assigned and transferred to Transferee free and clear of all liens and encumbrances.

3. Governing Law. This Bill of Sale shall be governed by, and construed and interpreted in accordance with, the laws of the State of Hawaii.

EXHIBIT 1
PAGE 209 OF 282

[Signatures for Bill of Sale and Assignment
Appear on the Following Page]

IN WITNESS WHEREOF, Transferor and Transferee have executed this instrument on the day and year first above written.

a _____,

a Hawaii corporation

By _____
Its _____

By _____
Its

"Transferor"

By _____
Its

"Transferee"

SCHEDULE H-1

DESCRIPTION OF
TANGIBLE PERSONAL PROPERTY AND FIXTURES

SCHEDULE H-2

DESCRIPTION OF INTANGIBLE PERSONAL PROPERTY

LAND COURT SYSTEM **REGULAR SYSTEM**
Return by Mail () Pickup () To:

Tax Map Key Nos.: _____ Total pages: _____

ATTACHMENT I
ASSIGNMENT OF LEASE AND ASSUMPTION

THIS ASSIGNMENT is made as of this _____ day of
_____, 20_____, by _____, a _____,
whose principal place of business and post office address is
_____, hereinafter called
the "Assignor," and _____, a Hawaii
corporation, whose principal place of business and post office
address is _____, Honolulu, HI 968_____,
hereinafter called the "Assignee".

W I T N E S S E T H:

THAT the Assignor, for and in consideration of the sum
of TEN DOLLARS (\$10.00) and other good and valuable
consideration to it paid by the Assignee, the receipt and
sufficiency of which are hereby acknowledged, and of the
covenants and agreements of the Assignee hereinafter contained
and on the part of the Assignee to be faithfully kept and
performed, does hereby sell, assign, delegate, transfer, set
over and deliver unto the Assignee, and its successors and
assigns, all of Assignor's right, title and interest in and to
the lease described in Schedule 1 (the "Lease"); together with

all interests thereto appertaining, and together with the personal property located on the land thereby demised.

And all of the estate, right, title and interest of the Assignor in and to the land thereby demised, and all buildings, improvements, rights, easements, privileges and appurtenances thereunto belonging or appertaining or used, occupied and enjoyed in connection with said Lease and the land thereby demised.

TO HAVE AND TO HOLD the same unto Assignee and its successors and assigns, for and during the respective unexpired term of said Lease, and as to said personal property (if any) absolutely and forever.

AND, in consideration of the premises, the Assignor does hereby covenant with the Assignee that the Assignor is the lawful owner of the herein described real property; that said Lease is in full force and effect and is not in default; that said real property is free and clear of and from all liens and encumbrances, except for the lien of real property taxes not yet by law required to be paid; that the Assignor is the lawful owner of said personal property (if any) and that Assignor's title thereto is free and clear of and from all liens and encumbrances, that the Assignor has good right to sell and assign said real property and personal property (if any) as aforesaid; and, that the Assignor will WARRANT AND DEFEND the same unto the Assignee against the lawful claims and demands of all persons, except as aforesaid.

AND, in consideration of the foregoing, the Assignee does hereby promise, covenant and agree to and with the Assignor and to and with said Lessor, that the Assignee will, effective as of and from the date of the execution and delivery of this instrument and during the residue of the term of said Lease, pay the rents thereby reserved as and when the same become due and payable pursuant to the provisions of said Lease, and will also faithfully observe and perform all of the covenants and conditions contained in said Lease which from and after the date hereof are or ought to be observed and performed by the lessee therein named, and will at all times hereafter indemnify and save harmless the Assignor from and against the nonpayment of said rent and the nonobservance or nonperformance of said covenants and conditions and each of them.

The terms "Assignor" and "Assignee", as and when used herein, or any pronouns used in place thereof, shall mean and

include the masculine, feminine or neuter, the singular or plural number, individuals, partnerships, trustees or corporations and their and each of their respective successors, heirs, personal representatives, successors in trust and assigns, according to the context hereof. All covenants and obligations undertaken by two or more persons shall be deemed to be joint and several unless a contrary intention is clearly expressed elsewhere herein. The term "Lease", as and when used herein, means the lease or sublease demising the leasehold estate described in Schedule 1, together with all recorded amendments thereof, if any, whether or not listed in Schedule 1. The term "rent", as and when used herein, means and includes all rents, taxes, assessments and any other sums charged pursuant to the Lease.

This instrument may be executed in any number of counterparts, each of which shall be deemed an original, but all of which shall constitute one instrument binding on all the Parties hereto, notwithstanding that all the Parties are not signatory to the original or the same counterpart.

[Signatures for Assignment of Lease and Assumption are on following page.]

IN WITNESS WHEREOF, Company and Assignor have executed
this instrument as of the date first above written.

By _____
Name:
Title:

By _____
Name:
Title:
"Assignor"

By _____
Name:
Title:

By _____
Name:
Title:
"Assignee"

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

On this _____ day of _____, 200_____, before
me personally appeared _____ and
_____, to me known to be the persons
described in and who executed the foregoing instrument, and
acknowledged that such persons executed such instrument as the
free act and deed of such persons and if applicable in the
capacity shown, having been duly authorized to execute such
instrument in such capacity.

(Official Stamp or Seal)

Signature: _____

Print Name: _____

Notary Public, State of Hawaii

My commission expires: _____

NOTARY CERTIFICATION STATEMENT

Document Identification or

Description: _____

Doc. Date _____ No. of Pages: _____

Jurisdiction: _____ Circuit
(in which notarial act is performed)

(Official Stamp or Seal)

Signature of Notary Date of Notarization and
 Certification Statement

Printed Name of Notary

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

On this _____ day of _____, 200_____, before me personally appeared _____ and _____, to me known to be the persons described in and who executed the foregoing instrument, and acknowledged that such persons executed such instrument as the free act and deed of such persons and if applicable in the capacity shown, having been duly authorized to execute such instrument in such capacity.

(Official Stamp or Seal)

Signature: _____

Print Name: _____

Notary Public, State of Hawaii

My commission expires: _____

NOTARY CERTIFICATION STATEMENT

Document Identification or

Description: _____

Doc. Date _____ No. of Pages: _____

Jurisdiction: _____ Circuit
(in which notarial act is performed)

(Official Stamp or Seal)

Signature of Notary Date of Notarization and
 Certification Statement

Printed Name of Notary _____

SCHEDULE 1

- Description of Lease
- To Be Attached

ATTACHMENT J
ENERGY PURCHASES BY COMPANY

1. Contract Price.

(a) Initial Term.

Commencing on the Commercial Operations Date and thereafter for the balance of the Initial Term, the rates set forth in Table J-1 (Contract Rate for Each Contract Year) below are the rates at which Company shall, subject to the provisions of this Agreement, (i) accept and pay for electric energy and (ii) pay for Compensable Curtailed Energy; provided, however, that in any Contract Year, if the sum of the Actual Output plus the Compensable Curtailed Energy exceeds 110% (the "Threshold") of the Annual Contract Energy for such Contract Year (as determined pursuant to Section 2.2 (Payment for Electric Energy) of the Agreement), the price paid for the sum of the electric energy and Compensable Curtailed Energy in excess of such Threshold shall be equal to 50% of the otherwise applicable rate set forth in Table J-1 (Contract Rate for Each Contract Year).

(b) Banked Curtailed Energy Term.

During the Banked Curtailed Energy Term (if any), Company shall, subject to the provisions of this Agreement, accept and pay for electric energy at the rate of \$42.50/MWh. During the Banked Curtailed Energy Term (if any), Company shall not pay for Compensable Curtailed Energy.

(c) Extended Term.

During the Extended Term (if any), Company shall, subject to the provisions of this Agreement, accept and pay for electric energy at the rate set forth in Table J-1 (Contract Rate for Each Contract Year) for the last Contract Year of the Initial Term; provided, however, that in any Contract Year during the Extended Term, if the Actual Output for such Contract Year is in excess of 120% of the Annual Contract Energy for such Contract Year (as determined pursuant to Section 2.2 (Payment for Electric Energy) of the Agreement), the price paid for electric energy in excess of 120% of such Annual

Contract Energy shall be 75% of the otherwise applicable Contract Price for such electric energy. During the Extended Term (if any), Company shall not pay for Compensable Curtailed Energy.

2. Test Energy. Company shall use reasonable efforts to accept test energy that is delivered as part of the normal testing for generators (such as energy delivered to Company during the Control System Acceptance Test but not during the Acceptance Test), provided Seller shall use reasonable efforts to coordinate such normal testing with Company so as to minimize adverse impacts on the Company System and operations. Company shall compensate Seller for test energy as provided in Section 2.5 (Payments Prior to Commercial Operations Date) of the Agreement.
3. Tax Credit Pass Through.
 - (a) Because the Hawaii tax treatment that will apply to renewable energy technologies on the Commercial Operations Date is uncertain, the rates set forth in Table J-1 (Contract Rate for Each Contract Year) have been negotiated on the assumption that Seller will not be eligible for any favorable Hawaii tax treatment for either its investment in the renewable energy technologies incorporated into the Facility or for the energy produced by the Facility (each a form of "Hawaii Renewable Energy Tax Credit"). The intent of this Section 3 (Tax Credit Pass-Through) is to entitle Company to an Energy Price Credit, against amounts due by Company to Seller for energy purchases under this Agreement, equal to 90% of the maximum of the Hawaii Renewable Energy Tax Credits for which Seller is eligible during the Term and receives through implementation of an Agreed upon Recommendation, as more fully set forth in this Section 3 (Tax Credit Pass Through).

- (b) No later than thirty (30) Days after the Execution Date, Seller shall deliver to Company a written notice (the "Nomination Notice") of: (i) the names of three persons qualified and willing to accept appointment as an Independent Tax Expert; (ii) a description provided by each nominee of his or her qualifications to serve as an Independent Tax Expert; (iii) a written undertaking by each nominee to provide the requisite Independent Recommendation and Independent Tax Report within the applicable time period if appointed to serve as an

Independent Tax Expert; and (iv) each nominee's fee proposal. Within ten Business Days of Company's receipt of the Nomination Notice, Company shall deliver to Seller a written notice either accepting as the Independent Tax Expert one of the persons nominated by Seller or providing Seller with the name of an alternative nominee (the "Alternative Nominee") who is qualified and willing to serve as an Independent Tax Expert together with the Alternative Nominee's description of his or her qualifications, the Alternative Nominee's undertaking to provide the requisite Independent Recommendation and Independent Expert Report within the applicable time period and the Alternative Nominee's fee proposal. Company's failure to provide the written notice described in the preceding sentence within the aforesaid ten Business Day period shall be deemed an acceptance of all three nominees named by Seller in the Nomination Notice, in which case Seller shall promptly designate in writing which of its three nominees is to serve as the Independent Tax Expert. Within ten Business Days of Seller's receipt of Company's notice nominating an Alternative Nominee, Seller shall notify Company in writing of Seller's acceptance or rejection of such Alternative Nominee. Seller's failure to provide the aforesaid written notice within said ten Business Day period shall be deemed an acceptance of such Alternative Nominee. If Seller rejects such Alternative Nominee, Seller and Company shall agree on a mutually acceptable person to serve as the Independent Tax Expert within ten Business Days of Company's receipt of Seller's written notice rejecting the Alternative Nominee. If the Parties fail to agree upon a mutually acceptable Independent Tax Expert within the aforesaid ten Business Day period, such disagreement shall be resolved pursuant to Section 3(j) of this Attachment J (Energy Purchases by Company). Company and Seller shall each pay one-half of the fees and expenses of the Independent Tax Expert.

- (c) No later than thirty (30) Days after the Commercial Operations Date, the Independent Tax Expert shall provide a recommendation (the "Independent Recommendation") indicating which of the following four alternatives the Independent Tax Expert anticipates will maximize the Energy Price Credit to which Company will be entitled pursuant to Section 3(h) of this Attachment J (Energy Purchases by Company): (i) Seller claims or

cause to be claimed on a State of Hawaii tax return(s) filed by or on behalf of Seller or the Claiming Entities the full amount of a Non-Refundable Tax Credit; (ii) Seller Monetizes a Non-Refundable Tax Credit; (iii) Seller claims or causes to be claimed a Refundable Tax Credit to the extent a Refundable Tax Credit is available; or (iv) Seller claims or causes to be claimed by one or more Claiming Entities a Non-Refundable Tax Credit to the extent that such Non-Refundable Tax Credit can be used to offset tax otherwise due to the State of Hawaii by Seller or any Claiming Entity.

- (d) Concurrently with the Independent Recommendation provided pursuant to Section 3(c) of this Attachment J (Energy Purchases by Company), the Independent Tax Expert shall provide an Independent Tax Report setting out an estimate of the amount of Hawaii Renewable Energy Credit the Independent Tax Expert anticipates Seller shall claim or cause to be claimed by following the Independent Recommendation. In the event that the Independent Recommendation recommends Monetization, the Independent Tax Report shall also provide estimates of: (i) the proceeds Seller will realize from such Monetization; (ii) the Monetization Costs associated with such Monetization; (iii) the schedule for Seller's receipt of the Monetization proceeds; (iv) the Energy Price Credit Company will receive pursuant to Section 3(h) of this Attachment J (Energy Purchases by Company) as a result of such Monetization; (v) the Energy Price Credit Company would receive pursuant to Section 3(h) of this Attachment J (Energy Purchases by Company) if the Independent Recommendation did not recommend Monetization; and (vi) the Tax Credit Floor.
- (e) Each Party shall have 30 Days following Company's receipt of the Independent Recommendation and Independent Tax Report to provide the other Party with a written notice of objection to the Independent Recommendation. If either Party provides notice of objection, such objection shall be resolved pursuant to Section 3(j) of this Attachment J (Energy Purchases by Company). If neither Party provides notice of objection within the applicable notice period, both Parties shall have been deemed to have accepted the recommendation in the Independent Recommendation, in which case such recommendation shall be deemed the Agreed Upon Recommendation.

- (f) Seller shall exert commercially reasonable efforts to successfully implement the Agreed Upon Recommendation. In the event that prior to the completion of implementation of an Agreed Upon Recommendation Seller becomes aware that such Agreed Upon Recommendation would likely result in less of an Energy Price Credit than would be the case if an alternative course of action were pursued, Seller shall provide written notice to Company together with calculations and/or documentation of the likelihood of such lessening of the Energy Price Credit. Within ten (10) Days of Seller's provision of such notice, Seller and Company shall meet to negotiate an alternative to the Agreed Upon Recommendation. In the event that Seller and Company agree upon such an alternative, such alternative shall become the Agreed Upon Recommendation and Seller shall exert commercially reasonable efforts to successfully implement same. Notwithstanding any other provision of this Section 3 (Tax Credit Pass Through) of this Attachment J (Energy Purchases by Company) to the contrary, in order to ensure that the Energy Price Credit will never be less than the Tax Credit Floor, Seller shall, before entering into any binding agreements for a Monetization, provide Company with written notice of the Energy Price Credit that would result from such Monetization and Seller shall not proceed with such Monetization if Company provides written objection to such Monetization within three (3) Business Days of receipt of Seller's notice. If Company provides written objection to such Monetization as aforesaid, the Tax Credit Floor shall be deemed to become the Agreed Upon Recommendation.
- (g) No later than the 30th Day following the consummation of a Monetization transaction, Seller shall provide Company with a certification signed by the officer of the Seller responsible for overseeing such Monetization of the Monetization proceeds, the Monetization Costs, and the schedule for receipt by Seller of such Monetization proceeds. No later than the 30th Day following the filing by or on behalf of Seller during any year of the Term of a State of Hawaii tax return claiming a Hawaii Renewable Energy Tax Credit that has not been Monetized, Seller shall provide Company with a certification signed by the officer of the Seller responsible for overseeing preparation of such tax return of the type of Hawaii Renewable Energy Tax Credit claimed in such year by Seller or any Claiming Entity and the sum, in dollars,

of the Hawaii Renewable Energy Tax Credit claimed and used to offset tax otherwise due in such year by Seller or any Claiming Entity.

- (h) Company shall be entitled to an Energy Price Credit against any amounts due by Company to Seller for energy purchases under this Agreement as follows:

- (i) For Hawaii Renewable Energy Tax Credits that have not been Monetized, Company shall be entitled to an Energy Price Credit equal to 90% of the value to Seller (net of federal tax and any documented and reasonable financial, legal, administrative, and other costs required to claim and transfer such value to Seller, as supported by an officer's certificate as to the amount of such costs and the reasonableness thereof) of any Hawaii Renewable Energy Tax Credit received by Seller as a result of Seller's implementation of the Agreed Upon Recommendation pursuant to Section 3(f) of this Attachment J (Energy Purchases by Company). The Energy Price Credit shall be applied against the first invoice delivered to Company after the Tax Credit Offset Date for such Hawaii Renewable Energy Credit.
- (ii) For Hawaii Renewable Energy Tax Credits that have been Monetized, Company shall be entitled to an Energy Price Credit equal to 90% of the proceeds of such Monetization (less Monetization Costs) received by Seller as a result of Seller's implementation of the Agreed Upon Recommendation pursuant to Section 3(f) of this Attachment J (Energy Purchases by Company). If Monetization proceeds are received by Seller as a lump sum, the Energy Price Credit shall be applied against the first invoice delivered to Company after the Tax Credit Offset Date for such Monetization proceeds. If Monetization proceeds are received by Seller in payments made from time to time rather than as a lump sum, the Energy Price Credit for each such payment of such proceeds shall be determined based on the amount of such payment less a pro rata portion of the Monetization Costs and shall be applied against the first invoice delivered to Company after each Tax Credit Offset Date for such Monetization proceeds.

The invoices delivered by Seller to Company pursuant to Section 2.8(B) (Seller's Preparation of the Monthly Invoice for Electric Energy) of this Agreement shall reflect any Energy Price Credit to which Company is entitled pursuant to this Section 3(h).

- (i) If Seller fails to implement the Agreed Upon Recommendation pursuant to Section 3(f) of this Attachment J (Energy Purchases by Company), and such failure is not the result of any action or inaction by Company, then Company shall be entitled to liquidated damages in an amount equal to Six Million Eight Hundred Eighty-Five Thousand Dollars (\$6,885,000). Seller and Company agree and acknowledge that (i) the failure to implement the Agreed Upon Recommendation as provided in the preceding sentence would result in damages to Company in the form of reduction or loss of Energy Price Credit that would be difficult or impossible to calculate with certainty and (ii) Six Million Eight Hundred Eighty-Five Thousand Dollars (\$6,885,000) is an appropriate approximation of such damages. Company's right to collect liquidated damages as described in this Section 3(i) shall constitute Company's exclusive remedy and fulfillment of all Seller's liability with respect to its obligations to maximize the amount of Hawaii Renewable Energy Credit and to implement an Agreed Upon Recommendation as provided in Section 3(f) of this Attachment J (Energy Purchases by Company). Such liquidated damages shall be provided to Company in the form of an Energy Price Credit against any amounts due by Company to Seller for energy purchases under this Agreement.
- (j) If written notice of an objection is provided by either Party pursuant to Section 3(e) of this Attachment J (Energy Purchase by Company), within the time period provided for such written notice, or if the Parties are unable to agree upon the appointment of an Independent Tax Expert pursuant to Section 3(b) of this Attachment J (Energy Purchases by Company), Seller and Company shall attempt to resolve such objection or disagreement by written agreement within 30 Days. If the Seller and Company are unable to resolve such objection or disagreement by written agreement within the aforesaid 30-Day period, such unresolved objection shall constitute a "Dispute" within the meaning of Article 28 (Dispute Resolution) of this Agreement and shall be

resolved as provided in said Article 28 (Dispute Resolution) except that, in lieu of the "experience, knowledge or expertise" specified in Section 28.2(D)(1) (Single Arbitrator), the Parties shall attempt to agree on a single arbitrator who holds at least a bachelor's degree in accounting with apparent and substantial experience, knowledge or expertise with respect to project finance for utility-scale electric generating facilities and with respect to Hawaii Renewable Energy Tax Credits. In any such mediation or arbitration involving issues addressed in the Independent Recommendation and Independent Tax Report, the Independent Recommendation and Independent Tax Report addressing the issues in "Dispute" shall be provided to the mediator and arbitrator(s) and the mediator and arbitrator(s) may afford the evidentiary findings and expert opinions expressed in such Recommendation and Report such weight as such mediator or arbitrator(s) consider to be appropriate but such evidentiary findings and expert opinions shall not be considered to be dispositive of any issues in "Dispute."

Table J-1
CONTRACT RATE FOR EACH CONTRACT YEAR

| CONTRACT YEAR | CONTRACT PRICE (\$/MWh) |
|------------------|----------------------------|
| 1 | \$134.75 |
| 2 | \$134.75 |
| 3 | \$134.75 |
| 4 | \$134.75 |
| 5 | \$134.75 |
| 6 | \$134.75 |
| 7 | \$134.75 |
| 8 | \$134.75 |
| 9 | \$134.75 |
| 10 | \$134.75 |
| 11 | \$134.75 |
| 12 | \$134.75 |
| 13 | \$134.75 |
| 14 | \$134.75 |
| 15 | \$134.75 |
| 16 | \$134.75 |
| 17 | \$134.75 |
| 18 | \$134.75 |
| 19 | \$134.75 |
| 20 | \$134.75 |
| 21 | \$134.75 |
| 22 | \$134.75 |

ATTACHMENT K
GUARANTEED PROJECT MILESTONES

| Guaranteed Project Milestone Date | Description of Each Guaranteed Project Milestone |
|--|---|
| January 1, 2016 | Provide Company with a redacted copy of the executed Facility equipment, engineering, procurement and construction, or other general contractor, agreements. |
| January 1, 2016 | Provide Company with redacted copies of executed purchase orders/contracts for the delivery and installation of Facility generator(s), unless included in EPC agreement). |
| January 1, 2016 | Provide Company with documentation reasonably satisfactory to Company evidencing (i) the closing on financing for the Facility or (ii) the financial capability to construct the Facility (<u>"Construction Financing Closing Milestone"</u>). |
| December 15, 2014 | Provide Company with documentation reasonably satisfactory to Company evidencing the filing by or on behalf of Seller of the following applications for Governmental Approvals required for the ownership, construction, operation and maintenance of the Facility: Special Use Permit. |
| December 31, 2016 | <u>Guaranteed Commercial Operations Date</u> |

ATTACHMENT K-1
COMPANY MILESTONES AND SELLER'S CONDITIONS PRECEDENT

SELLER'S CONDITIONS PRECEDENT

| Seller's Conditions Precedent Date | Description of Each of Seller's Conditions Precedent |
|--|--|
| Company-Owned Interconnection Facilities Prepayment Date | Seller shall make payment to Company of the Amount required under <u>Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment)</u> of <u>Attachment G (Company-Owned Interconnection Facilities)</u> |
| November 15, 2014 | Seller shall provide Company a right of entry for the Company-Owned Interconnection Facilities site(s) to complete the substation ground grid test. |
| March 1, 2015 | Seller shall complete interface cabinet schematics. See Seller's Single Line Diagram Notes for details. |
| No later than 15 days following Company's notice requesting such payment, however, Seller shall not be obligated to make the payment prior to July 1, 2015 | Seller shall make payment to Company of the amount required under <u>Section 3(b)(iii) (Remote Substation Construction Portion of Company-Owned Interconnection Facilities Prepayment)</u> of <u>Attachment G (Company-Owned Interconnection Facilities)</u> . |
| No later than 15 Days following Company's written notice requesting such payment, however, Seller shall not be obligated to make the payment prior to September 1, | Payment of the balance of the Company-Owned Interconnection Facilities Prepayment Amount |

| 2015 | |
|------------------|---|
| October 15, 2015 | Seller shall obtain and provide Company all permits, licenses, easements and approvals to construct the Company-Owned Interconnection Facilities at the Akau Substation |
| October 15, 2015 | Seller shall complete preparation of the site(s) of the Company-Owned Interconnection Facilities for start of construction by Company |
| March 15, 2016 | Seller shall have Hawaiian Telcom Backup installed which shall consist of a 128kbps Routed Network Services circuit for backup SCADA communications from Seller's Facility to Company's EMS located at 820 Ward Avenue, Honolulu, Hawaii. |
| April 30, 2016 | Seller shall complete installation of physical bus and structures within Seller's substation. |
| June 15, 2016 | Seller shall complete construction of the Seller-Owned Interconnection Facilities and be ready to conduct the Acceptance Test |

If Seller satisfies the foregoing Seller's Conditions Precedent, the following Company Milestones shall apply:

COMPANY MILESTONES

| Company Milestone Date | Description of Each Company Milestone |
|------------------------|--|
| July 1, 2016 | Company shall commence Acceptance Testing. |
| August 1, 2016 | Energization of Company-Owned Interconnection Facilities, provision of back-feed power to support commissioning. |

ATTACHMENT L
REPORTING MILESTONES

| Reporting Milestone Date | Description of Each Reporting Milestone |
|---------------------------------|---|
| February 1, 2016 | Construction Start Date (as defined in the Definitions section of the Agreement). |
| May 1, 2016 | The 34.5 - 138 kV main power transformer shall have been installed at Seller's substation. |
| May 15, 2016 | Seller shall have constructed Seller's substation and such facilities are capable of being energized. |

ATTACHMENT M
FORM OF LETTER OF CREDIT

Page 1 of 2

[Bank Letterhead]

[Date]

Beneficiary: [Hawaiian Electric Company, HELCO or MECO, as appropriate]

[Address]

[Bank's Name]

[Bank's Address]

Re: [Standby Letter of Credit Number]

Ladies and Gentlemen:

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

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

This Letter of Credit is issued with respect to the following obligations: _____.

This Letter of Credit may be drawn upon under the terms and conditions set forth herein, including any documentation that must be delivered with any drawing request.

Partial draws of this Letter of Credit are permitted. This Letter of Credit is not transferable. Drafts on us at sight shall 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 [HELCO or MECO, as appropriate], and (ii) the amount of the draft accompanying this

certification is due and owing to Hawaiian Electric Company [or HELCO or MECO, as appropriate] under the terms of the Power Purchase Agreement dated as of _____, between _____, and Hawaiian Electric Company [or HELCO or MECO, as appropriate]] [(ii) the Letter of Credit will expire in less than thirty (30) days, it has not been replaced or extended and collateral is still required under Section ____ of the Power Purchase Agreement¹].

Such drafts must bear the clause "Drawn under [Bank's Name and Letter of Credit Number] _____ and date of Letter of Credit.]"

All demands for payment shall be made by presentation of originals or copies of documents, or by facsimile transmission of documents to [Bank Fax Number] or other such number as specified from time to time by the bank, with originals or copies of documents to follow by overnight mail. If presentation is made by facsimile transmission, you may contact us at [Bank Phone Number] to confirm our receipt of the transmission. Your failure to seek such a telephone confirmation does not affect our obligation to honor such a presentation.

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 [revise for HELCO or MECO, as appropriate]:

Rodney Chong
Manager, Renewable Acquisition
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.

¹ For draw relating to lapse of Letter of Credit while credit support is still required pursuant to the Power Purchase Agreement.

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. As used in this Letter of Credit, the term "Business Day" shall mean any day other than a Saturday or Sunday or any other day on which banks in the State of Hawaii are authorized or required by law to be closed.

Unless otherwise expressly stated herein, this irrevocable standby letter of credit is issued subject to the rules of the International Standby Practices, International Chamber of Commerce publication no. 590 ("ISP98").

[Bank's Name]:

By:

[Authorized Signature]

ATTACHMENT N
ACCEPTANCE TEST GENERAL CRITERIA

Upon final completion of Company review of the Facility's drawings, final test criteria and procedures shall be agreed upon by Company and Seller no later than thirty (30) Days prior to conducting the Acceptance Test in accordance with the Agreement. The Acceptance Test may include the following:

1. Interconnection:

- (a) Based on manufacturer's specification, test the local operation of the Facility's 138 kV breakers, which connect the Facility to Company System - must open and close locally using the local controls. Test and ensure that the status shown on the Energy Management System (EMS) is the same as the actual physical status in the field.
- (b) Remotely test the operation of the Facility's 138 kV breakers which connect the Facility to Company System - must open and close remotely from Company's EMS. Test and ensure that the status shown on the EMS is the same as the actual physical status in the field.
- (c) Relay test engineers to connect equipment and simulate certain inputs to test and ensure that the protection schemes such as any under/over frequency and under/over voltage protection or the Direct Transfer Trip operate as designed. (For example, a fault condition may be simulated to confirm that the breaker opens to sufficiently clear the fault. Additional scenarios may be tested and would be outlined in the final test criteria and procedures.) Seller to also test the synchronizing mechanisms to which the Facility would be synchronizing and closing into the Company System to ensure correct operation. Other relaying also to be tested as specified in the protection review of the IRS and on the single line diagram, Attachment E (Single-Line Diagram) for the Facility.
- (d) All 138 kV breaker disconnects and other high voltage switches will be inspected to ensure they are properly aligned and operated manually or automatically (if designed).

- (e) Switching Station inspections - The Switching Station may be inspected to test and ensure that the equipment that Seller has installed is installed and operating correctly based upon agreed-to design. Wiring may be field verified on a sample basis against the wiring diagrams to ensure that the installed equipment is wired properly. The grounding mat at the Switching Station may be tested to make sure there is adequate grounding of equipment.
 - (f) Communication testing - Communication System testing to occur to ensure correct operation. Detailed scope of testing will be agreed by Company and Seller to reflect installed systems and communication paths to tie the Facility to Company's communications system.
 - (g) Various contingency scenarios to be tested to ensure adequate operation, including testing contingencies such as loss of communications, and fault simulations to ensure that the Facility's 138 kV breakers open as they are designed to open. (Back up relay testing)
2. Witness of Facility protection scheme testing:
- (a) Company may have someone on-site when Seller performs any testing dealing with Seller's protection schemes such as any under/over voltage or under/over frequency protection schemes to ensure they meet the performance requirements of this Agreement and the IRS.
3. Telephone Communication:
- (a) Test to confirm Company has a direct line to the Facility control room at all times and that it is programmed correctly.
 - (b) Test to confirm that the Facility operators can sufficiently reach Company System Operator.

ATTACHMENT O
CONTROL SYSTEM ACCEPTANCE TEST CRITERIA

Final test criteria and procedures shall be agreed upon by Company and Seller no later than thirty (30) Days prior to conducting the Control System Acceptance Test in accordance with Good Engineering and Operating Practices and with the terms of this Agreement.

The Control System Acceptance Test is comprised of two parts, a set of onsite (at Facility) specific tests and a monitoring performance test. These tests may include the following:

On-site Tests:

1. SCADA Test to verify the status and analog telemetry, and if the remote controls between the Company's EMS and the Facility are working properly end-to-end.
2. Curtailment Test to verify if the Facility curtailment controls and the Curtailment Control Interface with the Company's EMS are working properly. The CSAT is generally conducted by setting different curtailment setpoints and observing the proper curtailment and uncurtailment of the Facility's real power output.
3. Voltage Regulation Control Test to verify the Facility can properly perform automatic voltage regulation as defined in this Agreement. Test is generally conducted by making small adjustments of the voltage setpoint and verifying by observation that the Facility regulates the voltage at the point of regulation to the setpoint.
4. Frequency Regulation Control Test to verify the Facility provides a frequency droop response as defined in this Agreement. [Test procedures will be based on frequency control design.]
5. Loss-of-Communication Test to verify the Facility will properly shutdown upon the failure of the direct-transfer-trip communication system. Test is generally conducted by simulating a communications failure and observing the proper shutdown of the Facility.

Monitoring Test:

- a) The monitoring test requires the Facility to operate as it would in normal operations.
- b) To ensure useful and valid test data is collected, the monitoring test shall end when one of the following criteria is met:
 - A. The Facility's power production is greater than 85% of its Allowed Capacity, 39.0 MW for at least four (4) hours in any continuous 24-hour CSAT period.
 - B. The recorded solar energy resource at the Facility is above 600 W/m² for at least eight (8) hours in any continuous 48-hour CSAT period.
 - C. 14 Continuous days from the start of the CSAT.
- c) At the end of the test, an evaluation period is selected based on the criteria that triggered the end of the test.
- d) The performance of the Facility is evaluated for this evaluation period, e.g. examining voltage regulation, frequency regulation, and ramp rate performance to verify the performance meets the requirements of this Agreement. The Facility is considered to have complied with a requirement if the Facility was compliant with the requirement at least 99.0% of the time during the evaluation period and the Facility does not grossly violate the requirement when the Facility was in violation. The Parties understand and agree that these compliance conditions are limited only to determining whether the Facility successfully completes the CSAT monitoring test and are not for use in determining compliance during Commercial Operations, shall not be considered a waiver of any of the performance standards of Seller, all of which are hereby reserved, and shall not alleviate Seller from any of its obligations under the Agreement.

ATTACHMENT P
SALE OF FACILITY BY SELLER

1. Company's Rights as to Proposed Sale of Facility.

- (a) Right of First Negotiation. Commencing as of the Commercial Operations Date, should Seller desire to sell, transfer or dispose of its right, title, or interest in the Facility, in whole or in part, other than through an "Exempt Sale" (as defined below) (such sale, transfer or disposal is sometimes called a "Sale"):
- (i) Seller shall first offer to sell such interest to Company by providing Company with written notice of the same (the "Offer Notice"), which notice shall identify the proposed minimum purchase price for the Facility (including a description of any consideration other than cash that will be accepted) (the "Minimum Price") and any other material terms of the intended transaction, and Company may, but shall not be obligated to, purchase such interest at a price equal or greater than the Minimum Price and upon the other material terms and conditions specified in the Offer Notice, and in accordance with the terms and conditions of this Attachment P ("Right of First Negotiation"). The date on which Seller sends the Offer Notice is referred to hereinafter as the "Notice Date."
- (ii) If Company desires to purchase such interest, Company shall indicate so by delivering to Seller a binding, irrevocable written offer to purchase the Facility at a price equal to or greater than the Minimum Price set forth in the Offer Notice and on the terms and conditions specified in the Offer Notice within fourteen (14) Days of the Notice Date (an "Acceptance Notice"). In the event Company timely delivers an Acceptance Notice, Seller shall sell and transfer to Company the Facility substantially on the terms and conditions contained in the Offer Notice and in accordance with the definitive documentation to be entered into between Seller and Company.
- (iii) In the event that (A) Company fails to timely deliver an Acceptance Notice, or (B) the Parties are not able to execute a binding written

commitment for the purchase and sale of the interest within forty-five (45) Days of the Company's notice, then unless otherwise agreed to in writing by the Parties, Seller may for a period of two hundred seventy (270) days following the Notice Date commence solicitation of offers and negotiations from and with other parties for the Sale of such interest on terms and conditions that in the aggregate are not less favorable to Seller in all material respects than those specified in the Offer Notice. If the Facility is not transferred to a purchaser or purchasers for any reason within the two hundred seventy (270) day period following the Notice Date, the Facility may only be transferred by again complying with the procedures set forth in this Section 1(a) of Attachment P; provided, however, if Seller and purchaser have entered into definitive agreements for the sale of the Facility that was reasonably expected to close within such two hundred seventy (270) day period and such agreement(s) remain in full force and effect between Seller and such purchaser and are subject to conditions precedent that are expected to be satisfied within a reasonable period, the two hundred seventy (270) day period shall be extended as to such agreement(s) and such purchaser for up to ninety (90) additional days or, if sooner, until such date that such agreement(s) have been terminated, cancelled or otherwise become no longer in full force and effect.

- (iv) After expiration of the Right of First Negotiation, Company will not be precluded from providing offers or proposals to Seller along with other prospective purchasers in accordance with any offer or bid procedures established by Seller in its discretion.
- (b) Purchase and Sale Agreement and PUC Approval. In the event that Company exercises its Right of First Negotiation and, Seller and Company conclude a purchase and sale agreement, such agreement shall contain commercially reasonable terms and conditions, and shall be subject to PUC approval as provided in Section 2 of this Attachment P.

- (c) Exempt Sales. Exempt Sales shall not trigger a Right of First Negotiation and shall not require the consent of Company. As used herein, "Exempt Sales" means: (i) a change in ownership of the Facility or equity interests in Seller resulting from the direct or indirect transfer by or of Seller in connection with financing or refinancing of the Facility ("Financing Purposes"), including, without limitation, any exercise of rights or remedies (including foreclosure) with respect to Seller's right, title, or interest in the Facility or equity interests in Seller undertaken by any financing party in accordance with applicable financing documents, and including, without limitation, (x) a sale and leaseback of the Facility, (y) an inverted lease, (z) a sale or transfer of equity in Seller to facilitate a tax credit financing (including any partnership "flip" transaction), (ii) a disposition of equipment in the ordinary course of operating and maintaining the Facility, and/or (iii) a sale or transfer of any interest in Seller or the Facility to one or more companies directly or indirectly controlling, controlled by or under common control with Seller ("Affiliates").
- (d) Change in Ownership of Seller. The Right of First Negotiation shall be triggered by a transfer or sale of an ownership interest in Seller (whether in a single transaction or a series of related or unrelated transactions) following which Waiawa PV Holdings, LLC or an entity controlled by Waiawa PV Holdings, LLC is no longer a direct or indirect owner of at least fifty-one percent (51%) of the equity interest or voting control of Seller, other than for Financing Purposes.
- (e) Seller's Transfer of Facility. The provisions of this Section 1(e) (Seller's Transfer of Facility) shall apply (i) from the Execution Date through the Commercial Operations Date and (ii) from the Commercial Operations Date in the event that Company, at any time from and after the Commercial Operations Date, does not consummate a purchase pursuant to its exercise of the Right of First Negotiation in accordance with the terms and conditions of this Attachment P. In such circumstances, Seller shall, subject to the prior written consent of Company, which consent shall not be unreasonably withheld, conditioned or delayed, have the right to transfer or sell the Facility to any person or entity which proposes to acquire the Facility with the

intent to continue the operation of the Facility in accordance with the provisions of this Agreement pursuant to an assignment of this Agreement; provided, however, Company consent shall not be required for any sale or transfer of the Facility or any interest in the Facility to any entity that (x) has a tangible net worth of \$100,000,000 or a credit rating of "BBB-" or better; (y) has experience in the ownership of power generation facilities; and (z) has at least five (5) years of experience in the operation of power generation facilities similar to the Facility; or such person or entity has contracted with an entity having such qualifications. Notwithstanding the foregoing, Company consent shall not be required for any Exempt Sale.

2. PUC Approval. Any purchase and sale agreement related to the Facility entered into by the Parties for a sale to Company is subject to approval by the PUC and the Parties' respective obligations thereunder are conditioned upon receipt of such approval, except as specifically provided otherwise therein.

- (a) Company shall prepare an application for (at its sole cost) and submit the purchase and sale agreement to the PUC for approval no later than ten (10) Days after execution by both Parties. Seller will provide reasonable cooperation to expedite obtaining an Approval Order (as such term is defined below) from the PUC, including providing information requested by the PUC and parties to the PUC proceeding in which approval is being sought. In order to constitute an "Approval Order" from the PUC under this Section 2 of this Attachment P, the order must approve the purchase and sale agreement, Company's funding arrangements and Company's acquisition of the Facility, shall not contain any terms and conditions deemed to be unacceptable by Company, and be in a form deemed reasonable by Company in its sole, but non-arbitrary, discretion.
- (b) The Final Non-Appealable Order from the PUC must be obtained within ninety (90) Days of the submission of the purchase and sale agreement to the PUC, or any extension of such period as agreed by the Parties in writing. The term "Final Non-appealable Order from the PUC" means an Approval Order from the PUC (i) that is considered to be final by Company, in its sole discretion, because Company is satisfied that no party to the subject PUC proceeding intends to seek a change in such PUC Approval Order through motion or appeal, or

- (ii) that is not subject to appeal to any Circuit Court of the State of Hawaii, Intermediate Court of Appeals of the State of Hawaii, or the Supreme Court of the State of Hawaii, because the period permitted for such an appeal has passed without the filing of notice of such an appeal, or (iii) that was affirmed on appeal to any Circuit Court of the State of Hawaii, Intermediate Court of Appeals of the State of Hawaii, or 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.
- (c) If a Final Non-Appealable Order from the PUC has not been obtained prior to the deadline provided in Section 2(b) of this Attachment P, then Seller may give written notice to Company that it does not wish to proceed further with a sale of the Facility to Company, in which case (i) Seller shall be permitted to sell the Facility to any person or entity notwithstanding any other provision herein to the contrary, and (ii) Company shall have been deemed to have waived its Right of First Negotiation for the four (4) year period following the date on which Seller gives written notice to Company that it does not wish to proceed further with a sale of the Facility to Company.
- (d) If the Final Non-appealable Order from the PUC does not satisfy the conditions for an Approval Order set forth in Section 2(a) of this Attachment P (Sale of Facility by Seller), Seller may (i) opt to renegotiate and cooperate with Company to submit a revised purchase and sale agreement to the PUC, or (ii) give written notice to Company that it does not wish to proceed further with a sale of the Facility to Company, in which case (x) Seller shall be permitted to sell the Facility to any person or entity notwithstanding any other provision herein to the contrary, and (y) Company shall have been deemed to have waived its Right of First Negotiation for the four (4) year period following the date on which Seller gives written notice to Company that it does not wish to proceed further with a sale of the Facility to Company.

(e) Unless otherwise agreed by the Parties, the purchase of the Facility by Company shall close within thirty (30) Days of the date the Approval Order becomes a Final Non-appealable Order from the PUC as provided in Section 2(b) of this Attachment P (Sale of Facility by Seller).

3. [RESERVED]

4. Company's Option to Purchase Pursuant to Section 12.10(D). Once Company has given Seller notice of Company's preliminary interest in purchasing the Facility pursuant to Section 12.10(D) (Company's Purchase Option During Banked Curtailed Energy Term), Seller and Company shall, for a period not to exceed three months, negotiate in good faith the terms of a purchase and sale agreement pursuant to which Company may purchase the Facility, which purchase and sale agreement shall include, without limitation, the terms set forth in Section 4 (Purchase and Sale Agreement) of this Attachment P (Sale of Facility by Seller). The Parties may agree in writing to extend this period for negotiations. Any such agreement shall be subject to PUC approval as provided in Section 5 (PUC Approval) of this Attachment P (Sale of Facility by Seller). If, at the conclusion of the aforesaid three month period (as the same may be extended as aforesaid), the Parties have not reached an agreement on the sale of the Facility to Company because the Parties cannot agree on the fair market value of the Facility, the fair market value of the Facility shall be determined in accordance with Section 3 (Procedure to Determine Fair Market Value of the Facility) of this Attachment P (Sale of Facility by Seller). The price paid by Company for the Facility at closing shall be equal to the fair market value of the Facility less the value of the then remaining Banked Curtailed Energy, the value of which shall be determined using the price set forth in Section 1(b) (Banked Curtailed Energy Term) of Attachment J (Energy Purchase by Company) to the Agreement.

5. Procedure to Determine Fair Market Value of the Facility.

(a) If, at the conclusion of the three month period provided in Section 4 (Company's Option to Purchase Pursuant to Section 12.10(D)), the Parties have not reached an agreement on the sale of the Facility to Company because the Parties cannot agree on the fair market value of the Facility, or if the Parties have agreed to effectuate a sale of the Facility pursuant to Sections 24.5(A)

(Consolidation) or Section 24.5(B) (Capital Lease) and are unable to agree on the terms the fair market value of the Facility, each of Company and Seller shall engage the services of an independent appraiser experienced in appraising power generation assets similar to the Facility to determine separately the fair market value of the Facility. Subject to the appraisers' execution and delivery to Seller of a suitable confidentiality agreement in form reasonably acceptable to Seller, Seller shall provide both appraisers full access to the books, records and other information related to the Facility required to conduct such appraisal. Company shall pay all reasonable fees and costs of both appraisers, subject to Section 5(c) of this Attachment P (Sale of Facility by Seller). Each of Company and Seller shall use reasonable efforts to cause its appraisal to be completed within two (2) months following the engagement of the independent appraisers. If for any reason (other than failure by Seller to provide full access to Company's appraiser) one of the appraisals is not completed within such two (2) month period, the results of the other, completed appraisal shall be deemed to be the Appraised Fair Market Value of the Facility. Each Party may provide to both appraisers (with copies to each other) a list of factors which the Parties suggest be taken into consideration when the appraisers generate their appraisals.

- (b) Company and Seller shall exchange the results of their respective appraisals when completed and, in connection therewith, the Parties and their appraisers shall confer in an attempt to agree upon the fair market value of the Facility.
- (c) If, within thirty (30) Days after completion of both appraisals, the Parties cannot agree on a fair market value for the Facility, within ten (10) Days thereafter the first two appraisers shall by mutual consent choose a third independent appraiser. If the first two appraisers fail to agree upon a third appraiser, such appointment shall be made by DPR upon application of either Party. The Parties shall direct the third appraiser (i) to select one of the appraisals generated by the first two appraisers as the Appraised Fair Market Value of the Facility (without compromise, aka "baseball" arbitration), and (ii) to complete his or her work within one month following his or her retention.

If the third appraiser selects the appraisal originally generated by Seller's appraiser, Company shall pay the fees and costs of the third appraiser. If the third appraiser selects the appraisal originally generated by Company's appraiser, Seller shall pay the fees and costs of the third appraiser and shall pay or reimburse Company for the costs of Seller's original appraiser.

6. Purchase and Sale Agreement. The purchase and sale agreement concluded by the Parties pursuant to Section 4 (Company's Option to Purchase Pursuant to Section 12.10(D)) Section 24.5(A) (Consolidation), or Section 24.5(B) (Capital Lease) shall contain, among other provisions, the following:

- (a) Seller shall, as of the closing of the sale, convey title to the Facility consistent with the state of title assumed by the appraiser in arriving at the Appraised Fair Market Value, including all rights of Seller in the Facility or relating thereto, free and clear of all liens, claims, encumbrances, or rights of others, except any Permitted Lien;
- (b) To the extent assignable or transferable, Seller shall assign or transfer to Company all of Seller's interest in all Project Documents and Governmental Approvals that are then in effect and that are utilized for the operation or maintenance of the Facility;
- (c) Seller shall execute and deliver to Company such deeds, bills of sale, assignments and other documentation as Company may reasonably request to convey title to the Facility consistent with the state of title assumed by the appraiser in arriving at the Appraised Fair Market Value free from all liens, claims, encumbrances, or rights of others, except any Permitted Lien;
- (d) Seller shall cause all liens on the Facility for monies owed (including liens arising from Financing Documents), and any liens in favor of Seller's affiliates, to be released prior to closing on the sale of the Facility to Company;
- (e) Seller shall warrant, as of the date of the closing of the sale of the Facility to Company, title to the Facility consistent with the state of title assumed by the appraiser in arriving at the Appraised Fair Market Value, is free and clear of all other liens, claims,

encumbrances and rights of others, except any Permitted Lien;

- (f) Company shall have no liability for damages (including without limitation, any development and/or investment losses, liabilities or damages, and other liabilities to third parties) incurred by Seller on account of Company's purchase of the Facility, nor any other obligation to Seller except for the purchase price, and Seller shall indemnify Company against any such losses, liabilities or damages;
- (g) Company shall assume all of Seller's obligations with respect to the Facility accruing from and after the date of closing on the sale of the Facility to Company, including (i) to the extent assignable, all Permits held by, for, or related to the Facility, and (ii) all of Seller's agreements with respect to the Facility provided to and approved by Company at least thirty (30) Days prior to the date of closing on the sale of the Facility to Company, except for such agreements Company has elected to terminate, in which case any related termination expenses shall be, at Company's option, paid directly by Company and deducted from the purchase price;
- (h) Seller shall indemnify Company against all of Seller's obligations with respect to the Facility accruing through the date of closing the sale of the Facility to Company and Company shall indemnify Seller against all of Company's obligations with respect to the Facility accruing from and after the date of closing on the sale of the Facility to Company;
- (i) Seller makes no representations or warranties with respect to the condition of the Facility, and Company shall purchase the Facility on an as-is basis;
- (j) Seller shall warrant that, except as disclosed to and approved by Company in writing at least thirty (30) Days prior to the date of closing on the sale of the Facility to Company, the Facility has been operated by Seller in conformity with all Laws;
- (k) Seller shall warrant that Seller provided full access to Company and each appraiser in connection with the procedure to determine fair market value provided in

Section 5 (Procedure to Determine Fair Market Value of the Facility);

- (l) If applicable, Seller's lease of the Site from Company will terminate and Seller will relinquish all rights, privileges and obligations relating to such lease; and
- (m) Seller shall maintain the Facility in accordance with Good Engineering and Operating Practices between appraisal and the closing date.

As used in this Attachment P (Sale of Facility by Seller), "Permitted Lien" shall mean (a) any lien for taxes not yet due or delinquent or being contested in good faith by appropriate proceedings, (b) any lien arising in the ordinary course of business by operation of applicable Laws with respect to a liability not yet due or delinquent or that is being contested in good faith, (c) all matters that are disclosed (whether or not subsequently deleted or endorsed over) on any survey, in the title policies insuring any Land Rights or in any title commitments, title reports or other title materials, (d) any matters that would be disclosed by a complete and correct survey of the Property, (e) zoning, planning, and other similar limitations and restrictions, and all rights of any Governmental Authority to regulate the Site and/or the Facility, (f) all matters of record, (g) any lien that is released on or prior to closing of the sale of the Facility to Company, (i) statutory or common law liens in favor of carriers, warehousemen, mechanics and materialmen, and statutory or common law liens to secure claims for labor, materials or supplies arising in the ordinary course of business which are not delinquent, and (j) the matters agreed by the Parties, to the extent that such Permitted Liens are taken into account at arriving at the appraised value.

ATTACHMENT Q
[RESERVED]

Q-1

Waiawa PV, LLC

EXECUTION VERSION

ATTACHMENT R
REQUIRED INSURANCE

(See also Article 18 (Insurance))

1. Worker's Compensation and Employers' Liability. This coverage shall include worker's compensation, temporary disability and other similar insurance required by applicable Hawaii state or U.S. federal laws. If exposure exists, coverage required by the Longshore and Harbor Worker's Compensation Act (33 U.S.C. §688) shall be included. Employers' Liability coverage limits shall be no less than:

Bodily Injury by Accident - \$1,000,000 each Accident
Bodily Injury by Disease - \$1,000,000 each Employee
Bodily Injury by Disease - \$1,000,000 policy limit

2. General Liability Insurance.

(i) This coverage shall include Commercial General Liability Insurance or the reasonable equivalent thereof, covering all operations by or on behalf of Seller. Such coverage shall provide insurance for bodily injury and property damage liability for the limits of liability indicated below and shall include coverage for:

- (a) Premises, operations, and mobile equipment,
- (b) Products and completed operations,
- (c) Claims resulting from alleged damage to the environment and damage or injury caused by hazardous conditions or hazardous materials to the extent such coverage is available at a commercially reasonable cost.
- (d) Blanket contractual liability,
- (e) Broad form property damage (including completed operations),
- (f) Explosion, collapse and underground hazard,
- (g) Personal injury liability, and
- (h) Failure to supply liability.

- (ii) Limits of liability for such coverage, which may be provided with umbrella and/or excess insurance coverage, shall be:

| | |
|------------------------------------|---|
| Bodily Injury & Property Damage | \$10,000,000 combine single limit per occurrence and; \$20,000,000 aggregate annually |
|------------------------------------|---|

- (iii)

If coverage is written on a claims-made basis, the Seller warrants that any retroactive date applicable to coverage under the policy precedes the Execution Date; and that continuous coverage will be maintained or an extended discovery period will be exercised for a period of three (3) years beginning from the end of Term.

3. Automobile Liability Insurance. This insurance shall include coverage for owned, leased and non-owned automobiles. The limits of liability shall be a combined single limit for bodily injury and property damage of Two Million Dollars (\$2,000,000) for each occurrence and in the aggregate annually. Coverage may be satisfied through a combination of primary and excess policies.
4. Builders All Risk Insurance. This insurance shall include coverage for earthquake and flood perils including transit (excluding ocean transit), testing, incidental storage, structures, buildings, improvements and temporary structures used in construction, or part of the permanent Facility from the start of construction through the earlier of the Commercial Operations Date or the effective date of the policy coverage set forth in Section 5 (All Risk Property/Comprehensive Boiler and Machinery Insurance (Upon Completion of Construction)). The amount of coverage shall be purchased on a full replacement cost basis, and the sublimits for earthquake and flood perils shall be 40% of replacement costs at such time up to Twenty Million Dollars (\$20,000,000), if such insurance amounts are available on commercially reasonable terms. The coverage shall be written on an "All Risks" completed value form and may allow for reasonable other sublimits including, but not limited to, One Million Dollars (\$1,000,000) for transit and Five Million Dollars (\$5,000,000) for incidental offsite storage.

Coverage shall be extended to include testing. Such policies shall be endorsed to require that the coverage afforded shall not be canceled (except for nonpayment of premiums) or reduced without at least sixty (60) Days' prior written notice to Seller and Company; provided, however, that such endorsement shall provide (i) that the insurer may not cancel the coverage for non-payment of premium without giving Seller and Company ten (10) Days' notice that Seller has failed to make timely payment thereof, and (ii) that, subject to the consent of the Facility Lender, Seller or Company shall thereupon have the right to pay such premium directly to the insurer.

5. All Risk Property/Comprehensive Boiler and Machinery Insurance (Upon Completion of Construction). This insurance shall provide All Risk Property Coverage (including the perils of earthquake and flood) and Comprehensive Boiler and Machinery Coverage against damage to the Facility. The amount of coverage shall be purchased on a full replacement cost basis (no coinsurance shall apply) and the sublimits for earthquake and flood perils shall be no less than Twenty Million Dollars (\$20,000,000), if such insurance amounts are available on commercially reasonable terms. Such coverage may allow for other reasonable sublimits. Such policies shall be endorsed to require that the coverage afforded shall not be canceled (except for nonpayment of premiums) or reduced without at least sixty (60) Days' prior written notice to Seller and Company; provided, however, that such endorsement shall provide (i) that the insurer may not cancel the coverage for non-payment of premium without giving Seller and Company ten (10) Days' notice that Seller has failed to make timely payment thereof, and (ii) that, subject to the consent of the Facility Lender, Seller or Company shall thereupon have the right to pay such premium directly to the insurer.
6. Business Interruption Insurance (Upon Completion of Construction). This insurance shall provide coverage for all of Seller's costs to the extent that they would not be eliminated or reduced by the failure of the Facility to operate for a period of at least twelve (12) months including a covered physical damage loss deductible period or reasonable dollar deductible.
7. Project Liability Errors and Omissions. Seller shall require third parties to obtain adequate protection against project liability errors and omissions on account of negligent actions or inactions of architects, engineers, contractors

and subcontractors involved in the construction of the Facility. This protection may be provided through any one or more of the following mechanisms: (i) construction contract(s) with the above parties who have sufficient financial creditworthiness to cover project liability errors and omissions; (ii) other agreement(s) with the above parties; or (iii) reserve account(s) which may be used to correct material deficiencies associated with the Facility as a result of negligent actions or inactions of the above parties.

8. Ocean Transit. Seller shall take reasonable action to ensure that the risk of loss or damage to any material items of equipment which are subject to ocean transit is adequately protected against by the terms of delivery from contractors or suppliers of such equipment or Seller's own insurance coverage.

ATTACHMENT S
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 _____, a [Delaware limited liability company] ("Seller"), and [HECO/HELCO/MECO, as appropriate], a Hawaii corporation, dated _____, (the "Agreement").

In addition to the remedial action plan requirement set forth in Article 13 of the Agreement, Seller shall review the status of each Construction Milestone of the construction schedule (the "Schedule") for the 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 Government Approval, 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 Governmental Approvals, 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 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 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 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 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 Facility (provide details in subsequent sections of this report):

- 2.1.1 (Insert Construction Milestones from Attachment K and Attachment L, if needed)
- 2.1.2 Financing
- 2.1.3 Governmental Approvals for Development
- 2.1.4 Site Control
- 2.1.5 Land Rights for Company-Owned Interconnection Facilities
- 2.1.6 Design and Engineering
- 2.1.7 Major Equipment Procurement
- 2.1.8 Construction
- 2.1.9 Interconnection

2.1.10 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 Facility since the previous report (provide details in subsequent sections of this report):

- 2.2.1 [Insert Construction Milestones from Attachment K and Attachment L, if needed]
- 2.2.2 Financing
- 2.2.3 Development Permits
- 2.2.4 Site Control
- 2.2.5 Land Rights for Company-Owned Interconnection Facilities
- 2.2.6 Design and Engineering
- 2.2.7 Major Equipment Procurement
- 2.2.8 Construction
- 2.2.9 Interconnection
- 2.2.10 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 Facility:

- 2.3.1 [Insert Construction Milestones from Attachment K and Attachment L, if needed]
- 2.3.2 Financing
- 2.3.3 Governmental Approvals for Development
- 2.3.4 Site Control

- 2.3.5 Land Rights for Company-Owned Interconnection Facilities
- 2.3.6 Design and Engineering
- 2.3.7 Major Equipment procurement
- 2.3.8 Construction
- 2.3.9 Interconnection
- 2.3.10 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 Facility (provide details in subsequent sections of this report):

- 2.4.1 Construction Milestones
- 2.4.2 Financing
- 2.4.3 Governmental Approvals
- 2.4.4 Site Control
- 2.4.5 Land Rights for Company-Owned Interconnection Facilities
- 2.4.6 Design and Engineering
- 2.4.7 Major Equipment procurement
- 2.4.8 Construction
- 2.4.9 Interconnection
- 2.4.10 Startup Testing and Commissioning

3. Milestones

3.1 Milestone schedule

Please list all Construction Milestones specified in Attachment K and Attachment L 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 Facility. Include information about each stage of financing.

| Activity (e.g., obtain \$xx for yy stage from zz) | Completion Date <u> </u> / <u> </u> / <u> </u> (expected / actual) |
|---|---|
| | <u> </u> / <u> </u> / <u> </u> (expected / actual) |

5. Project Schedule

Please provide a copy of the current version of the overall Facility schedule (e.g., Work Breakdown Structure, Gantt chart, MS Project report, etc.). Include all major activities for Governmental Approvals for Development, 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 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) |

Governmental Approvals

Please describe each of the Governmental Approvals 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 Governmental Approval activities recently performed

Please list all Governmental Approval activities that occurred since the previous report.

6.4 Governmental Approval activities expected during the current month

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

6.5 Governmental Approval Notices received from EPC Contractor

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

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. Land Rights for the Company-Owned Interconnection Facilities

8.1 Table of Land Rights schedule for Company-Owned Interconnection Facilities

If not obtained prior to execution of the Agreement, please provide the schedule Seller intends to follow to obtain control of the Land for the Company-Owned Interconnection Facilities (e.g., purchase, lease).

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

8.2 Land Control activities recently performed

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

8.3 Land Control activities expected during the current month

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

9. Design and Engineering

9.1 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) |

9.2 Design and engineering activities recently performed

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

9.3 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.

10. Major Equipment Procurement

10.1 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 |
|-----------------------|-------------|----------|-------------|---------------|------------|
| | | | | | |
| | | | | | |

10.2 Major Equipment procurement activities recently performed

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

10.3 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.

11. Construction

11.1 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) |

11.2 Construction activities recently performed

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

11.3 Construction activities expected during the current month

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

11.4 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.

12. Interconnection

12.1 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) |

12.2 Interconnection activities recently performed

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

12.3 Interconnection activities expected during the current month

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

13. Startup Testing and Commissioning

13.1 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) |

13.2 Startup testing and commissioning activities recently performed

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

13.3 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.

14. Safety and Health Reports

14.1 Accidents

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

14.2 Work stoppages

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

Please describe the effect of work stoppages on the Facility schedule.

15. 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 Facility as of the date specified below.

By: _____

Name: _____

Title: _____

Date: _____

ATTACHMENT T
BLOCK CURTAILMENT PROCEDURES

When curtailments are being implemented in reverse chronological order pursuant to Section 2(e)(ii) of Attachment B (Facility Owned by Seller), the Company System Operator shall allocate curtailment to the projects included in Curtailment Block A in accordance with the procedures set forth in this Attachment T (Block Curtailment Procedures), as the same may be modified or supplemented as provided in the last bullet point set forth below. In the balance of this Attachment T (Block Curtailment Procedures), Curtailment Block A is referred to as the "BLOCK," and projects included in the BLOCK are referred to as "Projects."

- The allocation of the megawatt value of the curtailment (Pcurtailment) will be applied to all the Projects in the BLOCK using the following methodology:
 - The Company System Operator will implement curtailment of the BLOCK by setting the BLOCK curtailment set point (Psetpoint).
 - The real-time output (Pn) of each Project in the BLOCK at the time the Psetpoint is set will be summed to produce the total real-time output of the Projects in the BLOCK (Pblock).
 - The desired curtailment amount of the BLOCK is $P_{curtailment} = P_{block} - P_{setpoint}$.
 - The curtailment ratio of the individual Project (CRn) will be calculated by using the real-time output of the Project at the time the Psetpoint is set, divided by the sum of the outputs of all the Projects in the BLOCK ($CR_n = P_n / P_{block}$).
 - Company reserves the right to modify the method by which the curtailment ratio (CRn) is determined following consultation with the Projects. Alternate methods include but are not limited to using a real-time rolling average output, a real-time estimated generation capability, or the allowed capacity in place of the real-time output.
 - The method for determining CRn shall be the same for all Projects in the BLOCK.
 - Each Project's curtailment ratio (CRn) will be multiplied with the desired curtailment amount required by the Company System Operator to determine the respective amount of curtailment to be applied to each Project ($P_{ncurtailment} = CR_n \times P_{curtailment}$).
 - Each Project's block curtailment set point is $P_{nsetpoint} = P_n - P_{ncurtailment}$. The Pnsetpoints will be rounded to the full megawatt.
 - The Pnsetpoint calculations will be repeated whenever the Company System Operator inputs a new curtailment set point for the BLOCK (Psetpoint). The calculations will be repeated using the real-time Project outputs at the time the new Psetpoint is set.
 - The Company System Operator uncurtails the BLOCK by setting Psetpoint to the total allowed capacity of the BLOCK (Psetpoint0), at which point each Project Pnsetpoint is reset to its individual curtailment set point which will be its Allowed Capacity if currently not under individual curtailment.

- A sample calculation of the methodology is shown below in Table 1.

Table 1 - Sample Curtailment Calculation

| Required MW Curtailment for BLOCK Pcurtailment | | | 30 | |
|--|-----------------------------|-----------------------|----------------------------------|-------------------------------|
| Required MW Output for BLOCK Psetpoint | | | 105 | |
| Project | Project Real Time Output Pn | Curtailment Ratio CRn | Curtailment Amount Pncurtailment | New Maximum Output Pnsetpoint |
| A | 50 | 0.37 | 11.1 | 39 |
| B | 35 | 0.26 | 7.8 | 27 |
| C | 25 | 0.19 | 5.6 | 19 |
| D | 25 | 0.19 | 5.6 | 19 |
| E | 0 | 0.00 | 0.0 | 0 |
| Total | 135 | | 30.0 | 104 |

- Table 2 below is provided to show how the methodology will be applied when successive curtailment orders are required by the Company System Operator.

Table 2 Sample Successive Curtailment Orders Calculations

| Required MW Curtailment for BLOCK Pcurtailment | | | 30 | | Required MW Curtailment for BLOCK Pcurtailment | | | 30 | |
|--|-----------------------------|-----------------------|----------------------------------|-------------------------------|--|-----------------------------|-----------------------|----------------------------------|-------------------------------|
| Required MW Output for BLOCK Psetpoint | | | 105 | | Required MW Output for BLOCK Psetpoint | | | 65 | |
| Project | Project Real Time Output Pn | Curtailment Ratio CRn | Curtailment Amount Pncurtailment | New Maximum Output Pnsetpoint | Project | Project Real Time Output Pn | Curtailment Ratio CRn | Curtailment Amount Pncurtailment | New Maximum Output Pnsetpoint |
| A | 50 | 0.37 | 11.1 | 39 | A | 39 | 0.41 | 12.3 | 27 |
| B | 35 | 0.26 | 7.8 | 27 | B | 27 | 0.28 | 8.5 | 18 |
| C | 25 | 0.19 | 5.6 | 19 | C | 19 | 0.20 | 6.0 | 13 |
| D | 25 | 0.19 | 5.6 | 19 | D | 10 | 0.11 | 3.2 | 7 |
| E | 0 | 0.00 | 0.0 | 0 | E | 0 | 0.00 | 0.0 | 0 |
| Total | 135 | | 30.0 | 104 | Total | 95 | | 30.0 | 65 |

- While the BLOCK remains in curtailment, the curtailment ratio (CRn) and the block curtailment setpoint (Pnsetpoint) for the individual Projects will be recalculated every hour following a BLOCK curtailment setpoint change using the real-time output of the Project at the time of such recalculation. An example of such a recalculation is shown below in Table 3.

Table 3 Sample Hourly Curtailment Recalculation

| Required MW Curtailment for BLOCK | | | |
|-----------------------------------|-----------------------------|-----------------------|----------------------------------|
| Pcurtailment | | n/a | |
| Required MW Output for BLOCK | | | |
| Psetpoint | | 65 | |
| Project | Project Real Time Output Pn | Curtailment Ratio CRn | Curtailment Amount Pncurtailment |
| A | 27 | 0.47 | Increase 3.8 |
| B | 10 | 0.18 | Increase 1.4 |
| C | 13 | 0.23 | Increase 1.8 |
| D | 7 | 0.12 | Increase 1.0 |
| E | 0 | 0.00 | 0.0 |
| Total | 57 | | Increase 8.0 |
| | | | 65 |

- The curtailment experience of each Project in the BLOCK may vary for each Curtailment Event depending on the circumstances (for example, the real-time output of the Project at the time the Psetpoint is calculated) at the time of the initiation of the Curtailment Event or any successive curtailment order.
- The curtailment experience of each Project in the BLOCK may vary during the course of each Curtailment Event because of circumstances (for example, changing meteorological conditions) affecting each Project.
- Company shall have the right, at its discretion, to review and adjust the procedures set forth in this Attachment T (Block Curtailment Procedure) following consultation with the Projects should systematic problems arise in practice.

ATTACHMENT U
CALCULATION AND REPORTING OF CURTAILED ENERGY

1. Background. Since the generation of a data set representing the amount of electric energy the Facility is unable to deliver due to Curtailment Events may be useful and at times necessary (e.g., for the determination of Compensable Curtailed Energy), to the administration of the Agreement and for fulfilling various regulatory reporting requirements, Curtailed Energy (including Compensable Curtailed Energy) shall be calculated and reported by Seller in accordance with the procedures set forth in this Attachment U (Calculation and Reporting of Curtailed Energy), as the same may be modified or supplemented as provided in Section 7 (Periodic Review of Curtailed Energy Calculation) and Section 8 (Future Changes in Reporting Requirements) of this Attachment U (Calculation and Reporting of Curtailed Energy).
2. Curtailment Report. Commencing with the month during which the Commercial Operations Date is achieved, and for each calendar month thereafter during the Term, Seller shall provide to Company a Curtailment Report consisting of items specified in Section 4 (Format of Curtailment Report) of this Attachment U (Reporting and Calculation of Curtailed Energy) for the calendar month in question. Seller shall deliver such Curtailment Report to Company by the tenth (10th) Business Day following the close of the calendar month in question. Seller shall deliver the Curtailment Report electronically to the address provided by the Company. Company shall have the right to verify all data set forth in the Curtailment Report by inspecting measurement instruments and reviewing Facility operating records. Upon Company's request, Seller shall promptly provide to Company any additional data and supporting documentation necessary for Company to audit and verify any matters in the Curtailment Report.
3. Calculation of Calculated Output. Seller shall estimate the Calculated Output of the Facility for all Curtailment Events that occur during the Term of this Agreement.
 - (a) Log of Curtailment Events. Seller shall maintain a log of Curtailment Events that records the date, start time, and end time of all Curtailment Events. The start time shall be logged as the time the Facility receives the curtailment signal from the Company System Operator. The end time shall be logged as the time the Facility receives the curtailment control signal from the Company System

Operator to end or modify the curtailment set point. Curtailment Events in which the Company System Operator modifies the curtailment set point shall be reported as separate Curtailment Events, using the time at which the curtailment set point was modified as the end time of the first Curtailment Event and the start time of the subsequent Curtailment Event.

- (b) Calculation Guidelines. The method of calculating the Calculated Output of the Facility during a Curtailment Event must follow the guidelines below:
- (i) Calculated Output shall be calculated as a function of the solar irradiance and ambient temperature measured at the Facility in fifteen (15) minute increments over the course of the Curtailment Event, with the same resolution and accuracy requirements defined in Section 8 (Data and Forecasting) of Attachment B (Facility Owned by Seller).
 - (ii) Calculated Output shall be calculated as an output of the Facility Output Model.
 - (iii) Calculated Output shall take into account actual operating conditions during such period (for example, self-curtailed units, and derated units or units that are otherwise unavailable to produce electric energy).
 - (iv) Calculated Output shall be adjusted for any electric energy consumed by the Facility and electric energy losses from the solar panels to the Point of Interconnection.
 - (v) The Calculated Output of the Facility during a Curtailment Event or an Adjustment Event is equal to the kilowatt hours which should be generated during such Curtailment Event or Adjustment Event, calculated by the Facility Output Model with the solar irradiance and ambient temperature measured at the Facility over the entire Curtailment Event or Adjustment Event, taking into account actual operating conditions during such period (for example, self-curtailed units, and derated units or units that are otherwise unavailable to produce electric energy), and adjusted for any electric energy consumed by the Facility and electric energy losses from the solar panels to the Point of Interconnection.

4. Format of Curtailment Report. Seller shall provide Curtailment Report to the Company in the following format:

IPP MONTHLY CURTAILMENT REPORT

NAME OF IPP FACILITY: [Facility Name]

REPORT PERIOD: [Month Day, Year] to [Month Day, Year]

CURTAILMENT EVENTS REPORTED DURING REPORT PERIOD

| Event No. | Event Date | Start Time | End Time | Facility Output at Start of Event (MW) | Facility Availability (MW) | Calculated Output (kWh) | Actual Output (kWh) | Curtailed Energy (kWh) | Curtailment Signal Set Point (MW) | Reason for Curtailment |
|-----------|------------|------------|----------|--|----------------------------|-------------------------|---------------------|------------------------|-----------------------------------|------------------------|
| | | | | | | | | | | |
| | | | | | | | | | | |

TOTAL CURTAILED ENERGY DURING REPORT PERIOD: _____ kWh

TOTAL CURTAILED ENERGY DURING ADJUSTMENT EVENTS*
DURING REPORT PERIOD (FOR PURPOSES OF PPA § 2.4): _____ kWh

TOTAL COMPENSABLE CURTAILED ENERGY** DURING REPORT PERIOD: _____ kWh

* Note: The PPA defines "Adjustment Events" as follows: Collectively, (i) events or conditions of Force Majeure for so long as Seller is in compliance with the requirements of Section 21.4 (Satisfaction of Certain Conditions), (ii) Curtailment Events (including Compensable Curtailment Events) exclusive of curtailments by Company because Facility was not operating in compliance with Good Engineering and Operating Practices or other requirements set forth in this Agreement, and (iii) the outages on the Company System unless such outages were caused by Seller's actions or inactions that were not in compliance with this Agreement.

** Note: "Compensable Curtailed Energy" is the Curtailed Energy that results from a Compensable Curtailment Events. The PPA defines "Compensable Curtailment Event" as follows: Any Curtailment Event other than a Curtailment Event due to (a) an Emergency, (b) a Forced Outage, (c) the Facility not operating in compliance with Good Engineering and Operating Practices, (d) the Company's construction, installation, maintenance, repair, replacement, removal, investigation, testing or inspection of any of its equipment or any part of the Company System, including accommodating the installation and/or acceptance test of non-utility owned facilities to Company System, or (e) Force Majeure; provided, however, that any Curtailment Event initiated by Company during the hours of 7:00 a.m. and 6:00 p.m. HST for the purpose of Planned Maintenance above the Maintenance Cap shall be a Compensable Curtailment Event. For avoidance of doubt, a loss of curtailment priority for Subordinate Allowed Capacity under Section 2.3 (Adjustment of Curtailment Priority) of this Agreement does not constitute a Compensable Curtailment Event and the electric energy that is not purchased by the Company due to such loss of curtailment priority does not constitute Compensable Curtailed Energy.

5. Disagreements Concerning Curtailed Energy.

- (a) Data "Gaps". The Parties acknowledge that certain of the data points required to calculate Curtailed Energy are dependent upon the continuous proper functioning of various devices and systems to record, transmit and store such data. Any "gaps" in such data that occur because of malfunctions in such devices or systems are referred to herein below as "Data Gaps".
- (b) Notice of Disagreement. Company shall provide written notice to Seller within ninety (90) Days after Company's receipt of a Curtailment Report if Company disagrees with any of the following (collectively, "Curtailment Disagreement") : (i) the identification of the "reason" for a Curtailment Event, (ii) any data point set forth in a Curtailment Report, (iii) Seller's proposed estimate for any data "missing" because of Data Gaps, (iv) any calculation of Curtailed Energy set forth in a Curtailment Report or (v) any other matter concerning the Curtailment Report. Together with any such notice of disagreement, the Company shall include its own calculations, proposed estimates for any data "missing" because of Data Gaps and other support for its position.
- (c) Submission of Disagreement to Independent Curtailment Evaluator. Upon issuance of a notice of disagreement, the Parties shall review the contents of the Curtailment Report(s) and the notice of disagreement and attempt to resolve such Curtailment Disagreement. If the Parties are unable to resolve such Curtailment Disagreement within ninety (90) Days after Company's issuance of such notice of disagreement, and if the resolution of such Curtailment Disagreement becomes material to this Agreement for any reason (including the calculation of Compensable Curtailed Energy), the unresolved Curtailment Disagreement shall be submitted to an Independent Curtailment Evaluator for an advisory opinion; provided, however, that no Curtailment Disagreement that might result in an Adjustment Amount under Section 2.9(A) (General) of the Agreement shall be submitted to an Independent Curtailment Evaluator or to dispute resolution under Article 28 (Dispute Resolution) of the Agreement if the claims for such Adjustment Amount is barred under Section 2.9(D) (Limitations Period) of the Agreement.

- (d) Appointment of Independent Curtailment Output Evaluator. If, following expiration of the 90-Day period referenced in Section 5(c) (Submission of Disagreement to Independent Curtailment Evaluator) of this Attachment U (Calculation and Reporting of Curtailed Energy), either Party decides to submit a Curtailment Disagreement to an Independent Curtailment Evaluator, it shall provide written notice to that effect to the other Party. Within twenty (20) days of delivery of such notice, Seller and Company shall agree upon a person who is reasonably qualified and expert in utility-scale photovoltaic energy power generation and power purchase agreements to act as an Independent Curtailment Evaluator to provide an advisory opinion with respect to such Curtailment Disagreement. Unless otherwise mutually agreed by the Parties, the Independent Curtailment Evaluator shall be selected from the individuals listed in Attachment W (Independent Curtailment Evaluator) to this Agreement. If the Parties are unable to agree upon an Independent Curtailment Evaluator within such 20-Day period, Company shall apply to the PUC for the appointment of an Independent Curtailment Evaluator. If an independent observer retained under the Competitive Bidding Framework is qualified and willing and available to serve as Independent Curtailment Evaluator, the PUC shall appoint one of the persons or entities qualified to serve as an Independent Observer to be the Independent Curtailment Evaluator; if not, the PUC shall appoint another qualified person or entity to serve as Independent Curtailment Evaluator. In its application, Company shall ask the PUC to appoint an Independent Curtailment Evaluator within thirty (30) Days of the application.
- (e) Participation of Parties. The Parties shall assist the Independent Curtailment Evaluator throughout the process of preparing his advisory opinion, including making key personnel and records available to the Independent Curtailment Evaluator, but neither Party shall be entitled to participate in any meetings with personnel of the other Party. However, the Independent Curtailment 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 process to explore means of resolving the Curtailment Disagreement on mutually acceptable terms.

- (f) Limitations and Burdens. For Curtailment Disagreements submitted to an Independent Curtailment Evaluator:
- (i) the existence of Data Gaps shall not create a presumption for or against either Party in terms of what the "missing" data would have established; and
 - (ii) Seller will have no right to claim for any month any Curtailment Event that was not identified in the original Curtailment Report for that month.
- (g) Submissions by Parties to the Curtailment Evaluator. Promptly upon appointment pursuant to Section 5(d) (Appointment of Independent Curtailment Evaluator) of this Attachment U (Calculation and Reporting of Curtailed Energy); the Independent Curtailment Evaluator shall request the Parties to address, within the next thirty (30) Days, the following matters to the extent they are in dispute with respect to any Curtailment Report:
- (i) the reasonable estimate of any data "missing" because of Data Gaps;
 - (ii) the details of the method by which the calculations in question (including the calculation of the Facility Output Model) were made;
 - (iii) whether Seller's method of calculating Curtailed Energy was reasonable, consistent with this Attachment U (Calculation and Reporting of Curtailed Energy), and adequately accounted for the appropriate factors;
 - (iv) the "reason" for the Curtailment Event; and
 - (v) the amount of Curtailed Energy.
- (h) Advisory Opinion by Independent Curtailment Evaluator. Within ninety (90) Days of appointment, the Independent Curtailment Evaluator shall render his advisory opinion unless the Independent Curtailment Evaluator determines that he needs to have additional time, not to exceed forty-five (45) Days, to render his advisory opinion. The Independent Curtailment Evaluator shall render an advisory opinion that sets forth the positions of the Parties and Independent Curtailment Evaluator's rationale for his conclusions on disputed issues. Without limitation to the generality of the foregoing, the advisory opinion of the

Independent Curtailment Evaluator shall specifically state the following if such issues were in dispute:

- (i) the amount of Curtailed Energy; and
 - (ii) the "reason" for a Curtailment Event.
- (i) Fees and Expenses of Independent Curtailment Evaluator: The Parties shall each pay fifty percent (50%) of the fees and expenses charged by the Independent Curtailment Evaluator.
- (j) Independent Curtailment Evaluator as a Condition to Dispute Resolution. A Curtailment Disagreement shall constitute a "Dispute" under Article 28 (Dispute Resolution) of the Agreement, and shall, subject to the limitations set forth in Section 5(l) (Limitations and Burdens in Dispute Resolution) of Attachment U (Calculation and Reporting of Curtailed Energy), be resolved under said Article 28 (Dispute Resolution) upon satisfaction of either of the following two conditions:
(i) the Independent Curtailment Evaluator fails to issue his advisory opinion with respect to such Curtailment Disagreement within the 90-Day period provided in Section 5(h) (Advisory Opinion by Independent Curtailment Evaluator) of this Attachment U (Calculation and Reporting of Curtailed Energy), as said 90-Day period may be extended for a maximum of an additional 45 Days by the Independent Curtailment Evaluator as provided in said Section 5(h); or (ii) if either Party fails to accept and implement the advisory opinion of the Independent Curtailment Evaluator.
- (k) Circumstances in Which Advisory Opinion is Presumptively Correct. In order to provide an incentive to the Parties to resolve each Curtailment Disagreement by accepting in its entirety the advisory opinion of the Independent Curtailment Evaluator issued in connection with such Curtailment Disagreement, a Party who accepts and is prepared to implement such advisory opinion in its entirety shall, in any dispute resolution under Article 28 (Dispute Resolution) of this Agreement concerning such Curtailment Disagreement, be entitled to a presumption that such Curtailment Disagreement was correctly resolved in such advisory opinion. For purposes of the preceding sentence, a submission by a Party to the arbitrator(s) advocating for any determination that is inconsistent with any of the conclusions of the Independent Curtailment

Evaluator shall cause such Party to forfeit the presumption that the advisory opinion in question correctly resolved the Curtailment Disagreement in question. If, because of the failure of the Independent Curtailment Evaluator to issue his advisory opinion within the time period provided in Section 5(h) of this Attachment U (Calculation and Reporting of Curtailed Energy), an advisory opinion is issued by the Independent Curtailment Evaluator after the commencement of dispute resolution under Article 28 (Dispute Resolution) of this Agreement, a Party that notifies the arbitrator(s) in writing of such Party's willingness to accept and implement such advisory opinion in its entirety, and that makes no subsequent submissions to the arbitrator(s) advocating for any determination that is inconsistent with any of the conclusions of the Independent Curtailment Evaluator, shall be entitled to a presumption that such Curtailment Disagreement was correctly resolved in such advisory opinion.

- (1) Limitations and Burdens in Dispute Resolution. The resolution of a Curtailment Disagreement as a "Dispute" under Article 28 (Dispute Resolution) of the Agreement shall be subject to the following limitations:

- (i) if one of the Parties is entitled to the presumption that the Curtailment Disagreement in question was correctly resolved by an advisory opinion, the other Party shall have the burden of persuading the arbitrator(s) by a preponderance of the evidence that the calculations, data and analysis proffered by such Party are, to the extent such calculations, data, and analysis are at variance with those of the Independent Curtailment Evaluator, correct;
- (ii) if neither Party is entitled to the presumption that the Curtailment Disagreement in question was correctly resolved by an advisory opinion:
 - (aa) then such opinion shall no longer be presumptively correct and the arbitrator(s) shall afford such opinion such weight (if any) that they consider to be appropriate; and
 - (bb) the existence of "Data Gaps" shall not create a presumption for or against either Party in terms of what the "missing" data would have established;

(iii) if there is no advisory opinion by the Independent Curtailment Evaluator with respect to the Curtailment Disagreement in question, or if Seller is not entitled to the presumption that the advisory opinion in question correctly resolved such Curtailment Dispute:

- (aa) Seller will have no right to claim for any month any Curtailment Event that was not identified in the original Curtailment Report for that month; and
- (bb) Seller shall have the burden of persuading the arbitrator(s) by a preponderance of the evidence that the calculations, data and analysis set forth in its Curtailment Report are correct.

6. Assignment of Curtailed Energy Estimate to an Independent Consultant. The Parties may by written agreement elect to have the estimate of Curtailed Energy (including Compensable Curtailed Energy) prepared by an independent consultant.
7. Periodic Review of Curtailed Energy Calculation. At least once per Contract Year, Company shall review the Seller's Calculated Output calculation method to determine if other variables, including temperature, precipitation, solar altitude or azimuth angles or other parameters measured pursuant to Section 8 (Data and Forecasting) of Attachment B (Facility Owned by Seller) of this Agreement, should be incorporated into the Calculated Output calculation.
8. Future Changes in Reporting Requirements. Seller shall reasonably cooperate with any Company requested revisions to the Curtailment Report to include additional data that may be necessary from time to time to enable Company to comply with any new Curtailed Energy reporting requirements directed by the PUC or otherwise imposed under applicable Laws.

ATTACHMENT V
ANNUAL CONTRACT ENERGY CONSULTANT

Seller and Company agree that the following are acceptable consultants for purposes of Section 2.11 of the Agreement (Determination of Initial Annual Contract Energy) :

AWS True Power

DNV GL

Leidos Engineering

ATTACHMENT W
INDEPENDENT CURTAILMENT EVALUATOR

Seller and Company agree that the following are acceptable Independent Curtailment Evaluators for purposes of Section 5(d) (Appointment of Independent Curtailment Output Evaluator) of Attachment U (Calculation and Reporting of Curtailed Energy) :

DNV GL

AWS Truepower

Black & Veatch

Leidos

EXHIBIT 2

Procedural Background

On February 22, 2013, Hawaiian Electric issued the Waiver Invitation which sought "to lower the cost of electricity for its customers in the near term with qualified renewable energy projects on Oahu that [could] be quickly placed into service at a low cost per kilowatt-hour."¹ In order for a developer to be selected as part of the Invitation, developers were required to "accept all terms and conditions contained in the February 2013 Model Power Purchase Agreement for As-Available Energy . . . without substantial modification."² This requirement was reiterated in the notice of selection letters and subsequent correspondence sent to the project developers included in the Company's Waiver I Application.³

On June 17, 2013, Hawaiian Electric issued a letter offering the developers of the twenty projects that were not selected in the initial Waiver I process an additional opportunity to submit revised energy pricing that improved their project's market competitiveness (the "Pricing Refresh"). The Pricing Refresh incorporated all project requirements listed in the Invitation, including the requirement that: "Developers must accept all terms and conditions contained in the February 2013 Model Power Purchase Agreement for As-Available Energy, as revised on June 17, 2013 [(“Model PPA”)] . . . without substantial modification."⁴ The Company selected

¹ Invitation, Exhibit 1 to the Application for Approval of Application for Waivers from the Framework for Competitive Bidding, filed on June 18, 2013, in Docket No. 2013-0156 ("Waiver I Application").

² Criterion 10 of the Invitation.

³ The Company's Waiver I Application included requests for waivers for five projects. On November 4, 2013, the Company submitted a letter informing the Commission that two developers had withdrawn from the Invitation. By letters dated September 23, 2014, and October 6, 2014, the Company informed the Commission that two other developers had withdrawn from the Invitation.

⁴ Criterion 9 of the Pricing Refresh, Exhibit 6 to the Application for Approval of Application for Additional Waivers from the Framework for Competitive Bidding, filed on November 4, 2013, in Docket

six additional projects from the Pricing Refresh opportunity, and subsequently filed the Waiver II Application.

On February 13, 2014, the Commission issued Decision and Order No. 31913 (“D&O 31913”) in Docket No. 2013-0156, which approved waivers from the competitive bidding process for the three Waiver I projects, subject to certain conditions, including the requirement that a fully executed PPA for each project be filed within four months from the date of the Decision and Order. In addition, to provide the Company with further guidance in developing PPAs for the waiver projects, the Commission made, among other things, the following comment: “The [C]ommission encourages HECO to consider including curtailment mitigation provisions that are designed to mitigate existing curtailment risk and thus lower overall PPA pricing.”⁵

During February through July 2014, several developments relating to curtailment risk due to excess energy conditions occurred that are summarized below:⁶

- The Company shared information with the developers about potential curtailment of the projects.
- Developers expressed strong concern and difficulty securing financing, related to the financial impact of the curtailment risk due to excess energy conditions under the Model PPA.

No. 2013-0381 (“Waiver II Application”). The projects contemplated in the Waiver I Application and the Waiver II Application are sometimes referred to herein as “Waiver I” projects and “Waiver II” projects, respectively.

⁵ D&O 31913 at 7.

⁶ These events are described in more detail in Hawaiian Electric’s July 25, 2014 letter filed in Docket Nos. 2013-0156 and 2013-0381.

- The Company and developers discussed potential options to mitigate the financial risk of curtailment.
- The Company provided all of the developers with an Excess Energy Curtailment Financial Risk Mitigation Options Term Sheet (“Term Sheet”) and a revised Term Sheet (“Revised Term Sheet”) providing options, on a limited basis, that would reduce developers’ financial risk of excess energy curtailment (“Curtailment Financial Risk Mitigation Measures”) in exchange for lower risk adjusted pricing (“RAP”) for Hawaiian Electric’s customers. The Revised Term Sheet asked developers to provide RAP and other information if they wished to be considered for Curtailment Financial Risk Mitigation Measures.
- All developers provided RAP responses.
- The Company completed evaluations of the RAP responses, including an evaluation of whether the developer’s reduced financial risk was supported by a commensurate reduction in energy pricing to benefit the Company’s customers. To do this evaluation, Hawaiian Electric calculated the effective price of the energy that would actually be delivered to the Company’s system by each project under a variety of potential curtailment scenarios, including all costs associated with the Curtailment Financial Risk Mitigation Measures.
- Based on the evaluations, the Company determined that several of the RAP responses submitted provided a clear benefit to Hawaiian Electric’s *customers under the curtailment scenarios analyzed. The Company*

selected six of the projects for the option to accept the Curtailment Financial Risk Mitigation Measures and a PPA incorporating the Curtailment Financial Risk Mitigation Measures (“RAP PPA”). In July 2014, the Company notified the six developers of this selection, and notified the remaining three developers that they were not selected to receive the RAP PPA and that the Company was prepared to continue negotiations with them using the Model PPA.

- On June 3, 2014, Hawaiian Electric filed a letter in Docket No. 2013-0156, requesting that the date to file PPAs be extended from June 13, 2014 to October 10, 2014. In its request, Hawaiian Electric informed the Commission that it was exploring strategies to help mitigate the financial consequences of excess energy curtailment risk for waiver project developers in exchange for reduced energy pricing.
- On July 25, 2014, Hawaiian Electric filed a letter in Docket Nos. 2013-0156 and 2013-0381, describing recent activities regarding excess energy curtailment risk.

On August 4, 2014, the Commission filed Decision and Order No. 32241 in Docket No. 2013-0381 (“D&O 32241”), which approved, subject to certain conditions and requirements, Hawaiian Electric’s request for waivers from the competitive bidding process for the six projects that are the subject of that proceeding. The Decision and Order also required Hawaiian Electric to identify the amount of new utility-scale solar PV capacity that satisfies each of the conditions set forth in the Decision and Order (by project and in total) within thirty days after Hawaiian Electric’s Power Supply Improvement Plan had been submitted. Further, the Decision and Order required Hawaiian Electric to, upon the filing of any waiver PPA, “submit a

proposed selection methodology to determine which projects should continue in the event the O'ahu grid does not have the capacity to affordably incorporate all of the variable energy output from the proposed 'low cost renewable energy' projects.⁷

During the week of August 4, 2014, the Company and the waiver developers commenced PPA negotiations.

On September 25, 2014, Hawaiian Electric filed its response to Ordering Paragraph No. 2 of D&O 32241 (Docket No. 2013-0381), and Ordering Paragraph No. 2 of Order No. 32264 (Docket No. 2013-0156), which ordered Hawaiian Electric to "identify the amount of new utility-scale solar PV capacity that satisfies each of the conditions set forth in this Order (by project and in total) within thirty (30) days after the O'ahu PSIP has been submitted."

In its filing, the Company concluded that each of the waiver projects, including the Project, satisfied each of the conditions of the order set forth by the Commission.

⁷ D&O 32241 at 40.

EXHIBIT 3

Compliance with Order No. 32264

In Order No. 32264, the Commission, among other things, ordered Hawaiian Electric to identify the amount of new utility-scale PV capacity that satisfies each of seven conditions set forth in the Order (by project and in total) within thirty days after the O'ahu PSIP is submitted. By letter filed on September 25, 2014 ("September 25, 2014 Letter"), Hawaiian Electric addressed how the Waiver I and II projects, the Kahe PV Project, and Mililani South Solar Park Project, in aggregate, comply with each of the seven conditions in Order No. 32264. The Company incorporates by reference the comprehensive responses provided in the Company's September 25, 2014 letter. Responses to each of the seven conditions that are more specific to the Project that is the subject of this Application are provided, in turn, below:

Condition 1:

First, any PPA submitted to the commission as a result of this Order shall, at minimum, be filed concurrently with, or subsequently to, the PSIP that the commission directed HECO to file in Order No. 32053. Further, HECO shall demonstrate that each such PPA, as well as the aggregate amount of project solar PV capacity for both the Initial Waiver Projects and the Second Waiver Projects, is consistent with its PSIP.

Response:

Consistent with Condition 1, this Application is being filed subsequent to the filing of the O'ahu PSIP on August 26, 2014. As discussed in the Company's September 25, 2014 Letter, the aggregate amount of solar PV capacity in the Base Plan and Preferred Plan for Hawaiian Electric provides for 275.5 MW of centralized PV projects, which includes the Waiver I and II projects (244 MW),¹ the Kahe PV Project (11.5 MW), and the Mililani South Solar Park

¹ Subsequent to the filing of the PSIP, two of the Waiver I projects voluntarily withdrew from the process, on September 9, 2014 and on September 30, 2014. Hawaiian Electric notified the Commission of these projects' withdrawals, via letters filed September 23, 2014 and October 6, 2014 in Docket No. 2013-0156.

Project (20 MW).² This Project is a Waiver II project, it was included in the analysis performed in the PSIP, and is consistent with the PSIP.

Condition 2:

Second, as the commission stated in the RSWG Order, “HECO is likely to face major technical and operational challenges in order to integrate at the system level within three years, large amounts of utility-scale and distributed solar PV capacity on the O‘ahu grid with the current generation portfolio.” Thus, HECO shall demonstrate that each PPA results in lower energy costs to ratepayers after explicitly considering the cost to mitigate the reliability and system operational challenges associated with integrating substantial amounts of variable solar PV capacity onto the O‘ahu electric system. The commission observes that in its Reply SOP, HECO states that it is “committed to obtaining the most reasonable pricing for its customers and, in any PPA application that may result from this proceeding, the Company will provide sufficient analysis demonstrating the reasonableness of the PPA, the project’s integration with the operation of the overall system, and why approval of the PPA would be in the public interest.”

Response:

The pricing structure and level for this Project was deemed reasonable and in the long-term benefit of customers for several reasons explained more thoroughly in Exhibit 4, “Pricing Structure and Negotiations.” Portions of Exhibit 4 have been redacted as confidential because it contains confidential and/or proprietary financial information, which if disclosed publicly could disadvantage and competitively harm the Company and/or WPV.

Condition 3:

Third, HECO shall demonstrate that the incremental addition of each project in the portfolio of the currently-proposed waiver projects continues to displace higher cost fossil-fuel based generation rather than lower cost fossil-fuel based generation. As discussed

As a result, the total aggregate MW of Waiver Projects is decreased to 226 MW. Subsequent to the IRS, one Waiver I Project and two Waiver II projects elected to downsize their projects to avoid incurring additional interconnection costs, as further explained in those waiver project PPA approval applications, resulting in a decreased total aggregate MW of Waiver Projects of 220 MW.

² See PSIP, at 4-6, establishing that the Waiver Projects, the Kahe PV Project, and the Mililani South Solar Park Project, among others things, are considered to be “committed for planning purposes, and are therefore included in the Base Plan and Preferred Plan for Hawaiian Electric,” and “are assumed to enter service by the end of 2016.” See also PSIP, Table 5-2.

earlier, HECO has stated that “[i]t is possible that a decrease in the capacity factors of [firm dispatchable resources] could increase the cost paid by ratepayers for electricity.”

Response:

This issue is addressed in Exhibit 4, “Pricing Structure and Negotiations,” attached hereto.

Condition 4:

Fourth, as the commission stated in its RSWG Order, “the O‘ahu grid currently may not be sufficiently robust to accommodate a large portfolio of variable solar PV and wind resources without new mitigation measures.” Thus, in the RSWG Order, the commission directed HECO to include in its PSIP “appropriate reliability analysis and studies to demonstrate that the O‘ahu grid may be operated reliably with substantial quantities of variable renewable energy resources.” Accordingly, for each project, HECO shall demonstrate that the reliability of the O‘ahu electric grid will be maintained.

Response:

As described in Chapter 5 of the PSIP, the Preferred Plan was developed to transform the O‘ahu electrical system from its current state to a future vision of the utility. As a part of the development of the Preferred Plan, system reliability analyses were performed to ensure the reliability of the future electric system. Thus, the PSIP identifies the resources needed on the system in various years to meet reliability criteria.³ For example, the PSIP identified that 200 MW of battery energy storage will be needed for contingency reserve by 2017. The request for proposals for this resource is in progress.

With respect to this Project, WPV will be required to meet certain performance standards to help ensure that the Project can interconnect and operate without compromising reliability. These performance standards are based on the IRS and included in the PPA.

³ As stated by the Company in its response to Order No. 32264, the cost to implement reliability criteria are not specifically attributable to the WPV Project, as such measures are needed to address conditions that already exist. Therefore, the lower energy pricing from the WPV Project are not offset or reduced by costs that will be incurred to meet reliability criteria.

Condition 5:

Fifth, the Commission observes that HECO's assertion that these projects reflect "a unique opportunity to utilize clean renewable energy to provide rate relief to the greatest number of customers," identifies an important factor to be considered in deciding whether to grant the requested waivers. Given that, the Commission concludes that any PPA resulting from a waiver granted herein should contain final pricing that represents a delivered cost of energy that includes any and all tax incentives, as well as any and all grid integration/interconnection costs associated with interconnecting the individual project with HECO's O'ahu system.

Response:

As explained in the Company's September 25, 2014 Letter, to ensure that selected Waiver Projects, including this WPV Project, reflected the lowest cost energy price for customers, the Waiver Invitation included several conditions that required that the energy pricing proposed by developers be all-inclusive of the total delivered cost of energy. Furthermore, the Waiver Invitation sought to capture the benefit of any and all tax incentives applicable to the projects for customers. As such, the Waiver Invitation was designed for developers to include the benefit of the Federal Investment Tax Credit in the proposed energy pricing, a major factor that has directly impacted the development schedules of the participating projects. Because the Hawai'i tax treatment that will apply to renewable energy technologies on the commercial operations date is uncertain, Hawaiian Electric has endeavored through the PPA negotiation process, including the negotiations process with WPV, to include provisions to reduce the effective PPA price, through a credit against WPV's invoice for electric energy, based on the benefits from the Hawai'i state tax incentive/credit applicable to the project. Additional information regarding the terms reached between the Parties, and the low-cost pricing for this Project are provided in Exhibit 6, "Key PPA Terms and Conditions," and Exhibit 4, "Pricing Structure and Negotiations," attached hereto.

Condition 6:

Sixth, the Commission directs HECO to comply with the guidance it laid out with respect to renewable energy projects in Order No. 31354:

Renewable energy project development... is potentially affected by project location (on O'ahu or Maui County) and influenced by renewable energy tax credit phase-out or expiration dates or disparate tax treatment between wind and solar PV technologies.... It is important that the portfolio evaluation process analyze and rank renewable energy projects from a long-term public interest perspective in order to ensure inclusion of more economically beneficial projects that may take longer time to develop, and might be otherwise foreclosed if the utility project development queues are filled with only near-term projects. Selection of shorter lead-time renewable projects could preclude development of alternative projects with greater overall ratepayer benefits, which results in a potential foregone economic benefit or an opportunity cost.

These potential opportunity costs need to be recognized explicitly in the evaluation process for as-available renewable resources. Likewise, with respect to the Initial and Second Waiver Applications, the commission is concerned that large quantities of relatively low capacity factor PV generation could, at some level of development, have the unintended consequence of potentially limiting the future amount of lower-cost, higher capacity factor renewable energy resources that could be economically and reliably integrated on the O'ahu electric grid.

Response:

The WPV Project was included in the Company's PSIP, which evaluated various renewable resources, such as wind, PV (both centralized and distributed), and biomass based on benchmark pricing derived from published National Renewable Energy Laboratory studies. The Company's analysis indicates that the addition of 269.5 MW of utility-scale PV, along with the anticipated addition of 400 MW of rooftop PV, will still allow additional "headroom" to add increments of renewable generation, such as wind, with the deactivation of baseload units and replacement with quick-start units. Thus, based on the PSIP, Hawaiian Electric believes that integrating this WPV Project, along with the other Waiver Projects, the Kahe PV Project, and the Mililani South Solar Park Project will not preclude the addition of future low cost renewable energy.

In addition, the Federal Investment Tax Credit currently available to photovoltaic solar project developers, coupled with the aggressive price decreases currently exhibited in the Waiver Project proposals, provide real benefits that may not be available in the future. Therefore, the Company believes the WPV Project presents a unique opportunity to take advantage of low-cost centralized renewable energy to meet or exceed the 2020 RPS goal, as a hedge against future volatility in fossil fuel prices.

Condition 7:

Seventh, given the discussed grid limitations, the commission cautions HECO that the total amount of variable capacity that may be economically and reliably integrated on the O'ahu grid may be less than is needed for all of HECO's currently proposed waiver projects. Further, the total amount of currently proposed waiver projects, in conjunction with the aggregate amount of distributed solar PV capacity, could potentially exceed the proportion of total solar PV capacity that is consistent with a balanced, low-cost portfolio of renewable energy resources that is to be determined as part of HECO's PSIP. Should either of these be the case, HECO must have a methodology to determine which projects should proceed in such a way that is fair to both the developers and ratepayers.

Response:

The PSIP contains Hawaiian Electric's Preferred Plan for achieving key energy policy goals, including attaining a clean, secure, and affordable energy future, and contains detailed analysis supporting the integration of the total capacity of all the Waiver Projects. The Preferred Plan addresses the addition of utility-scale PV in excess of the total capacity of all the Waiver Projects in conjunction with the planned aggregate amount of distributed solar PV capacity. The Preferred Plan concludes that the projects will, in their entirety, help contribute to the balanced, low-cost portfolio of renewable energy resources contemplated in the PSIP. In addition, the Waiver Invitation process was developed from the onset, to seek low cost utility scale renewable projects that could be developed in the near term in a manner that is fair to both developers and the Company's customers. The Company sought to ensure a fair and equitable

EXHIBIT 3
PAGE 7 OF 7

process for developers, while striving to achieve its objective of seeking renewable energy pricing that is significantly lower than previously available to its customers. Accordingly, Hawaiian Electric submits that a methodology to determine which projects should proceed, is not necessary at this time.

EXHIBIT 4

Pricing Structure and Negotiations

1. Pricing Structure Negotiations

The pricing for the Power Purchase Agreement (“PPA”) for Renewable Energy was determined through a series of proposals and negotiations between Waiawa PV, LLC (“Waiawa PV” or “Seller”) and Hawaiian Electric Company, Inc. (“Hawaiian Electric” or “Company”) for the Waiawa PV project (“Project”).

Hawaiian Electric’s key considerations in the request for waivers proceeding included, but were not limited to: (a) Hawaiian Electric’s desire for additional low-cost renewable energy resources; (b) the objective of delinking the pricing of the Independent Power Producer (“IPP”) energy from fossil fuel prices to comply with Hawaii Revised Statutes (“HRS”) § 269-27.2(c)¹; (c) pricing of energy from other as-available renewable energy projects; and (d) pricing of the proposal compared to Hawaiian Electric’s long-run avoided energy costs.

2. Pricing

The pricing structure was determined through a competitive solicitation and a series of arm’s-length proposals and negotiations between Waiawa PV and Hawaiian Electric. Waiawa PV and Hawaiian Electric have negotiated a RAP structure with no escalation for the 22-year contract term. For the purposes of this analysis, RAP pricing mechanism energy assumptions were based on photovoltaic energy forecasts developed for Hawaiian Electric’s Power Supply Improvement Plan.

3. Pricing Evaluation

The pricing structure and pricing level were deemed reasonable by Hawaiian Electric taking into consideration: (1) Hawaiian Electric’s estimated long-run avoided costs over the 22-year contract term for the Project; (2) the Company’s December 2014 on-peak filed short-run avoided energy cost rate of 15.758¢ per kWh; (3) the leveled prices, with tax credits, for other recently approved renewable energy projects on O’ahu. In addition, the energy pricing for the Project is consistent with the requirements of HRS § 269-27.2(c), as the energy price is not indexed to, and does not vary with changes in the price of fuel oil.

A. Long-Run Avoided Cost Analysis

Hawaiian Electric’s long-run avoided energy cost has served as a benchmark against which Independent Power Producer (“IPP”) developers’ proposed pricing are evaluated to assess the reasonableness of the proposed pricing. Because the planning environment has become increasingly uncertain, the determination of the utility’s “true” avoided costs has become

¹ 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 non-fossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of non-fossil fuel generated electricity.”

increasingly complex. For example, the key determinants of avoided costs include, but are not limited to, the forecast of future fossil fuel and biofuel prices; the forecast of sales and peak demand; the size, type and characteristics of future firm capacity units installed to maintain generating system reliability; the size, type and characteristics of future as-available resources installed on the system; the amount of capacity installed under Net Energy Metering or Feed-In Tariffs ("FIT"); and the amount of regulating reserve needed to maintain system stability. The assumptions for the production simulation model analysis herein are based on Hawaiian Electric's Power Supply Improvement Plan submitted on August 26, 2014 in Docket No. 2011-0206.

As described in this Application, Waiawa PV was a participant in the Invitation and was selected by the Company for inclusion in its Waiver II Application filed in Docket No. 2013-0381. In order to evaluate the Waiawa PV Project's long-run avoided energy cost of energy, additional pending utility-scale photovoltaic resources were considered in the base case analysis, including the other projects participating in Waiver II, the Mililani South Solar Park Project in Docket No. 2014-0077, and the Ka Lā Nui Solar Project in Docket No. 2014-0308. Because it is not known at this time, when each of these pending projects will be placed into service, a proxy block of future photovoltaic installations of 300 MW was used in the long run avoided cost analysis for the Waiawa PV Project. By using a sample block of future PV installations with a similar commercial operations date as Waiawa PV, the implementation of pending PV projects is normalized, and the project specific impact to the avoided cost calculation are aggregated across the block of projects. The benefits for each specific project can then be proportioned incrementally by project size over the entire block to assess the potential savings for each project. For example if one project is 10 MW, the allocation of benefits will be 3% based on the percentage of the project size. (i.e. 10 MW project / 300 MW PV block = 3%).

B. Key Inputs to the Long-Run Avoided Cost Analysis

Key assumptions used to complete this long-run avoided cost analysis were based upon the assumptions within Hawaiian Electric's Power Supply Improvement Plan ("PSIP") report, in which Chapters 4 and 5, respectively, provided the Planning Assumptions and the Preferred Plan. Appendix F of the report provided additional detailed input assumptions such as:

- i. Sales and Peak Forecast
- ii. Fossil Fuel Price Forecasts
- iii. Biofuel Price Forecast
- iv. Liquefied Natural Gas ("LNG") Price Forecast
- v. Demand Response forecast
- vi. Future resource cost assumptions
- vii. System Security Requirements

Other Key inputs to the analysis include:

a. Variable Generation Renewable Resources

Variable generation renewable resources such as wind and photovoltaic projects can have a significant impact on avoided energy costs. Variable generating resources do not change the need for firm resources since as-available resources cannot be relied upon to serve demand during peak demand periods. The energy supplied by as-available resources provides energy to the system and displaces fuel consumption, which may have an impact on the opportunity for other resources to displace energy. For the purpose of this analysis, the following as-available renewable resources were included as a base case assumption, providing energy to the system:

- i. 99 MW Wind on O'ahu
- ii. 11 MW Photovoltaic
- iii. Feed-In-Tariff projects

The difference in energy purchased from renewable as-available resources is included in the avoided cost analysis.

The 11 MW of photovoltaic listed above includes IPPs that currently have PPAs with Hawaiian Electric.

b. Potential Transformation of the Hawaiian Electric System

As described in Chapter 5 of the PSIP, the Preferred Plan was developed to transform the O'ahu electrical system from its current state to a future vision of the utility. The transformational actions described in the PSIP serve as the future resource plan for this analysis.

Table 5-2 of the PSIP summarizes the generation resources over time:

EXHIBIT 4
PAGE 4 OF 17

| Unit | Generation Resources for the Preferred Plan (“x” indicates resources included) | | | | | | | | | | | | | | | |
|------------------------------|---|------|-------------|------|------|------|------|------|------|-------------|----------------|------|----------------|------|----------------|------|
| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| DG PV | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| FIT | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kahuku Wind | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kawaihoa Wind | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| KSEP | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kaleakoa Solar 2 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| KREP | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Na'Pua Makaw Wind | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Mililani Solar | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Waiver Projects | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kahe PV | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 50 MW Wind | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 50 MW PV | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 200 MW BESS (Contingency) | | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 100 MW BESS (Regulation) | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| HPOWERS | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| AES | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kaiaeloa | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Kahe 1 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Kahe 2 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Kahe 3 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Kahe 4 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Kahe 5 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Kahe 6 | x | x | x | x | x | x | x | x | x | Deactivated | | | Decommissioned | | | |
| Walau 3 | x | x | Deactivated | | | | | | | | Decommissioned | | | | | |
| Walau 4 | x | x | Deactivated | | | | | | | | Decommissioned | | | | | |
| Walau 5 | x | x | x | x | x | x | x | x | x | x | x | x | Deactivated | | Decommissioned | |
| Walau 6 | x | x | x | x | x | x | x | x | x | x | x | x | Deactivated | | Decommissioned | |
| Walau 7 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Deactivated | |
| Walau 8 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | Deactivated | |
| Walau 9 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Walau 10 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Honolulu 8 | | | Deactivated | | | | | | | | Decommissioned | | | | | |
| Honolulu 9 | | | Deactivated | | | | | | | | Decommissioned | | | | | |
| CT-1 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |
| Schofield | | | | x | x | x | x | x | x | x | x | x | x | x | x | x |
| 95 MW CT | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 95 MW CT | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 58 MW CC | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 8 MW ICE | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 58 MW CC | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 42 MW CT | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 58 MW CC | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 42 MW CT | | | | | | x | x | x | x | x | x | x | x | x | x | x |
| 42 MW CT | | | | | | x | x | x | x | x | x | x | x | x | x | x |

Table 5-2. Generation Resources for the Preferred Plan, 2015–2030

Because Waiawa PV's PPA term extends beyond the 2030 timeframe utilized by the PSIP, Hawaiian Electric assumed in this analysis that the resource configuration established in year 2030 will continue through the remainder of the PPA term.

c. Discount Rate

Hawaiian Electric used an after-tax discount rate to determine the present value of future expenditures. The after-tax discount rate is derived from Hawaiian Electric's composite incremental cost of capital on an after-tax basis. A discount rate of 7.028% was used in this analysis. Calculation of the cost of capital assumptions for the avoided cost analysis is shown on Attachment I of this Exhibit.

C. Analytical Results

i. Project Costs

To calculate the Net Present Value ("NPV") of the total payments to be made to the Project over the 22-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 in that year. The projected annual Risk Adjusted Price payments are provided in Attachment D, including both payments for energy delivered to the Company system and payments for Compensable Curtailed Energy.. The total accumulated annual payments over the PPA term were then discounted using the discount rate of 7.028% to 2014 dollars.

ii. Avoided Fuel Costs

By purchasing power from the Project, Hawaiian Electric will avoid burning fossil fuel in its generating units. The amount of fossil fuel Hawaiian Electric will avoid burning is calculated by a computer program that models how the generating units on the Hawaiian Electric system will operate with and without the Waiawa PV Project on the system. The case with the PV block, discussed above, is referred to as the Non-Utility Generator-in or "NUG-in" case; and the case without the PV block is referred to as the "NUG-out" case. This methodology (referred to as the "NUG-in/NUG-out" method), calculates the difference in fuel consumption between the two cases, to determine the amount of fuel Hawaiian Electric will avoid consuming. The avoided fuel cost is established by identifying the amount of fuel avoided, multiplied by the projected price per barrel of fuel in each project year. Year-by-year avoided fuel costs are shown in Attachment E. The avoided fuel costs are based on the modeled Waiawa PV energy that can be integrated onto the system.

iii. Avoided Variable Operation and Maintenance Costs

By purchasing power from the Project or other PV projects, 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 PV block on the system. The difference in variable O&M costs between the NUG- in/NUG-out cases establishes the amount of variable O&M costs Hawaiian Electric will avoid. Hawaiian Electric's avoided variable O&M costs are shown in Attachment F. The avoided variable operation and

maintenance costs are based on the modeled Waiawa PV energy that can be integrated onto the system.

iv. Imputed Debt and Rebalancing Costs

The addition of the Project will result in impacts to Hawaiian Electric's capital requirements. The resulting imputed debt and rebalancing costs are included in the calculations of the total avoided costs as shown in Attachment F.

v. Total Long-Run Avoided Costs

Hawaiian Electric's total long-run avoided costs are the sum of the avoided fuel costs, O&M costs, and the difference in IPP payments. The annual accumulated NPV of total avoided costs over the 22- year term of the PPA including the imputed debt liability were discounted to 2014 dollars using the discount rate of 7.028%, as shown in Attachment G. The total avoided costs are based on the modeled Waiawa PV energy that can be integrated on the system

vi. Comparison of Benefits and Costs

The customer benefit established by this analysis is shown through the fuel and variable O&M costs that Hawaiian Electric would avoid by purchasing energy from the Project, (i.e., the benefits are Hawaiian Electric's total avoided costs less imputed debt).

The cost to Hawaiian Electric would be the RAP payments to be made to the Project and the imputed debt liability. The accumulated NPV of the costs incurred by Hawaiian Electric (including payments made to the Project) under the PPA pricing over the 22-year term of the PPA, including the imputed debt liability, are compared to the NPV of the avoided costs in Attachment F.

Using the PSIP assumptions, the levelized pricing for the Project before the use of Hawai'i state tax incentives, is about [REDACTED] Hawaiian Electric's long-run avoided costs, including imputed debt. It should be noted, however, that the projected long-term levelized energy price against which Waiawa PV is evaluated is based on a current forecast of fossil fuel prices (LNG, Low Sulfur Fuel Oil and diesel fuel oil) and a successful transition from oil to LNG and other lower-cost renewables during the contract period, consistent with the PSIP. Actual fossil fuel prices and other resource costs may be higher or lower than currently forecast. If, for example, actual fossil fuel prices are higher than currently forecast, the Company's projected long-run avoided cost would be higher, thereby reducing the amount the Waiawa PV project is above the long-run avoided cost. Additionally, Waiawa PV's energy price is fixed and the stable pricing of the Waiawa PV project will contribute to the stabilization of overall energy pricing for customers. Furthermore, if Hawai'i state tax incentives are applied to the Waiawa PV price, the Risk Adjusted Price for Waiawa PV would be lower than the [REDACTED] price including imputed debt, which currently does not include the benefit of Hawai'i state tax incentives. Taking all these factors together, Hawaiian Electric believes that it is in the customers' best interests to integrate the Waiawa PV Project onto the system to help achieve renewable energy policy goals and long term price stability.

vii. Reasonableness Assessment

The Project's proposed leveled price including imputed debt, is [REDACTED] before the use of Hawai'i state tax incentives, which is about [REDACTED] than Hawaiian Electric's December 2014 filed short-run avoided energy cost rate. The December 2014 on-peak short-run avoided energy cost rate was \$157.58/MWh, the off-peak short-run avoided energy cost rate was \$120.78/MWh. A table of Hawaiian Electric's filed short-run avoided energy cost rates from 2012 through December 2014 is shown in Attachment H.

The energy pricing for the Project is consistent with the requirements of HRS § 269-27.2(c), as the energy price is not indexed to, and does not vary with changes in the price of fuel oil. Thus, the project's pricing is expected to contribute to stabilizing Hawaiian Electric's overall energy prices over time.

Additionally, the pricing for this Project was negotiated through a competitive solicitation process that represents the one of the lowest PPA energy payment rates of utility scale solar projects previously negotiated by the Company. As described in the Waiver Invitation and elsewhere in this Application, the primary reason that the Company's competitive Invitation was successful in securing such low cost renewable energy projects as negotiated with Waiawa PV is the limited opportunity to take advantage of the 30% Federal investment tax credit, which is available in its present form until the end of 2016. The Invitation was structured to allow projects such as Waiawa PV to proceed quickly and take advantage of the Federal investment tax credit while it is still available for the benefit of the Company's customers. Due to the long development timeline required to execute utility scale renewable projects in Hawaii, it is a likely possibility that future renewable energy projects, in the near term, will not have access to such favorable tax incentives as Waiawa PV, ultimately resulting in higher proposed energy rates from renewable project developers.

4. Conclusion

The pricing for the Project is reasonable considering that (a) over the 22- year contract term, the NPV of payments to the Project are within the range of Hawaiian Electric's estimated long-run avoided costs assuming LNG and other lower-cost resources are realized as assumed in the PSIP (absent a successful transition from oil to LNG, the NPV of payments to the Project are notably lower); (b) the PPA energy pricing is within the range of Hawaiian Electric's filed short-run avoided energy cost rate over the past year and is measurably lower than Hawaiian Electric's current avoided energy costs; (c) the pricing structure meets the requirement of Hawaii Revised Statutes Section 269-27.2(c) in that there is no linkage between the energy price and Hawaiian Electric's cost of fossil fuels; (d) and the project will provide more renewable energy to the system. Taking all these factors together, Hawaiian Electric believes that it is in the customers' best interests to integrate the Waiawa PV Project onto the system to help achieve renewable energy policy goals and long term price stability.

**ATTACHMENTS TO
EXHIBIT 4**

- | | |
|---------------------|---|
| Attachment A | PPA Pricing |
| Attachment B | Sales Forecast |
| Attachment C | Projected Annual Energy Purchased |
| Attachment D | Projected Annual Payments |
| Attachment E | Avoided Hawaiian Electric Fuel Costs |
| Attachment F | Avoided Hawaiian Electric Variable O&M Costs and Total Avoided Costs |
| Attachment G | Total Costs Analysis Summary |
| Attachment H | Hawaiian Electric Historical Avoided Energy Costs |
| Attachment I | Hawaiian Electric Cost of Capital Assumptions for Avoided Cost Analysis |

| Year | Energy Payment Rate (\$/MWh) |
|------|------------------------------|
| 2017 | 134.75 |
| 2018 | 134.75 |
| 2019 | 134.75 |
| 2020 | 134.75 |
| 2021 | 134.75 |
| 2022 | 134.75 |
| 2023 | 134.75 |
| 2024 | 134.75 |
| 2025 | 134.75 |
| 2026 | 134.75 |
| 2027 | 134.75 |
| 2028 | 134.75 |
| 2029 | 134.75 |
| 2030 | 134.75 |
| 2031 | 134.75 |
| 2032 | 134.75 |
| 2033 | 134.75 |
| 2034 | 134.75 |
| 2035 | 134.75 |
| 2036 | 134.75 |
| 2037 | 134.75 |
| 2038 | 134.75 |

PPA Pricing

ATTACHMENT A

| Year | Sales, GWH | |
|------|------------|--|
| 2017 | 6,962 | |
| 2018 | 6,971 | |
| 2019 | 6,965 | |
| 2020 | 6,949 | |
| 2021 | 6,908 | |
| 2022 | 6,860 | |
| 2023 | 6,796 | |
| 2024 | 6,709 | |
| 2025 | 6,558 | |
| 2026 | 6,339 | |
| 2027 | 6,118 | |
| 2028 | 5,895 | |
| 2029 | 5,677 | |
| 2030 | 5,459 | |
| 2031 | 5,475 | |
| 2032 | 5,489 | |
| 2033 | 5,508 | |
| 2034 | 5,523 | |
| 2035 | 5,538 | |
| 2036 | 5,598 | |
| 2037 | 5,664 | |
| 2038 | 5,726 | |

Sales Forecast

ATTACHMENT B

Projected Annual Energy Purchased

ATTACHMENT C

| Year | Waialua PV, | Waimoku LLC | Firm Utility | IPP Firm | AS-Availables | Total Energy (MWh) |
|------|-------------|-------------|--------------|----------|---------------|--------------------|
| 2017 | 81,771 | 3,140,573 | 3,231,064 | 854,146 | 7,307,554 | |
| 2018 | 81,356 | 2,980,486 | 3,403,846 | 851,873 | 7,317,561 | |
| 2019 | 80,912 | 2,952,290 | 3,429,479 | 849,317 | 7,311,998 | |
| 2020 | 80,726 | 2,949,057 | 3,415,769 | 849,666 | 7,295,218 | |
| 2021 | 80,125 | 2,896,303 | 3,430,517 | 844,752 | 7,251,697 | |
| 2022 | 79,766 | 1,262,804 | 4,915,534 | 842,665 | 7,100,769 | |
| 2023 | 79,358 | 922,435 | 5,192,292 | 840,300 | 7,034,385 | |
| 2024 | 79,081 | 877,385 | 5,146,592 | 840,151 | 6,943,209 | |
| 2025 | 78,483 | 939,837 | 4,931,770 | 835,255 | 6,785,345 | |
| 2026 | 78,023 | 782,662 | 4,861,975 | 832,603 | 6,555,263 | |
| 2027 | 77,282 | 877,676 | 4,540,823 | 828,398 | 6,324,179 | |
| 2028 | 76,172 | 891,303 | 4,300,326 | 823,637 | 5,866,187 | |
| 2029 | 74,170 | 729,592 | 4,251,457 | 810,968 | 6,091,438 | |
| 2030 | 71,884 | 936 | 4,767,723 | 798,213 | 5,638,756 | |
| 2031 | 71,970 | 1,910 | 4,783,427 | 798,574 | 5,655,881 | |
| 2032 | 71,892 | 2,397 | 4,795,880 | 799,550 | 5,669,719 | |
| 2033 | 71,652 | 857 | 4,820,912 | 796,699 | 5,690,120 | |
| 2034 | 71,610 | 1,960 | 4,835,465 | 796,465 | 5,705,500 | |
| 2035 | 71,420 | 3,191 | 4,850,717 | 795,413 | 5,720,741 | |
| 2036 | 71,407 | 2,039 | 4,912,502 | 796,823 | 5,782,771 | |
| 2037 | 72,069 | 3,474 | 4,976,407 | 799,004 | 5,850,954 | |
| 2038 | 72,408 | 6,456 | 5,035,906 | 800,881 | 5,915,651 | |

| Year | \$ | Total Payments (PV, 2014\$) | Present Value Factor | Total Payments | \$ |
|------|------------|--------------------------------|-------------------------|----------------|------------|
| 2017 | 11,259,485 | 0.762 | 8,580,822 | 7,974,813 | 7,409,757 |
| 2018 | 11,199,731 | 0.712 | 8,580,822 | 6,905,509 | 6,398,908 |
| 2019 | 11,137,518 | 0.665 | 0.622 | 11,109,066 | 11,017,553 |
| 2020 | 11,137,518 | 0.665 | 0.622 | 10,957,519 | 5,946,146 |
| 2021 | 11,017,553 | 0.581 | 0.543 | 10,896,957 | 5,524,985 |
| 2022 | 11,017,553 | 0.581 | 0.543 | 10,773,870 | 4,768,731 |
| 2023 | 11,017,553 | 0.507 | 0.474 | 10,711,334 | 4,429,730 |
| 2024 | 11,017,553 | 0.474 | 0.443 | 10,655,920 | 4,117,439 |
| 2025 | 11,017,553 | 0.443 | 0.414 | 10,551,208 | 3,839,096 |
| 2026 | 11,017,553 | 0.414 | 0.361 | 10,447,299 | 3,308,166 |
| 2027 | 11,017,553 | 0.361 | 0.315 | 10,496,470 | 2,868,263 |
| 2028 | 11,017,553 | 0.315 | 0.294 | 10,424,848 | 2,658,612 |
| 2029 | 11,017,553 | 0.294 | 0.275 | 10,341,968 | 2,298,531 |
| 2030 | 11,017,553 | 0.275 | 0.257 | 10,292,488 | 2,142,761 |
| 2031 | 11,017,553 | 0.257 | 0.240 | 10,242,204 | 2,024,456 |
| 2032 | 11,017,553 | 0.240 | 0.224 | 10,219,134 | 1,996,531 |
| 2033 | 11,017,553 | 0.224 | 0.210 | 10,190,930 | 1,865,428 |
| 2034 | 11,017,553 | 0.210 | 0.183 | 10,190,930 | 10,190,930 |
| 2035 | 11,017,553 | 0.183 | 0.196 | 10,190,930 | 10,190,930 |
| 2036 | 11,017,553 | 0.196 | 0.210 | 10,219,134 | 10,219,134 |
| 2037 | 11,017,553 | 0.210 | 0.224 | 10,242,204 | 10,242,204 |
| 2038 | 11,017,553 | 0.224 | 0.257 | 10,292,488 | 10,292,488 |

Projected Annual Payments

ATTACHMENT D

ATTACHMENT E

Avoided Hawaiian Electric Fuel Costs

| Year | Diesel Avoided Fuel Cost \$ | Ultra Low Sulfur Diesel Avoided Fuel Cost \$ | Biodiesel Avoided Fuel Cost \$ | LNG Avoided Fuel Cost \$ | Total Avoided Fuel Cost* \$ |
|--------------|-----------------------------------|--|---|--------------------------------|-----------------------------------|
| 2017 | | | | | |
| 2018 | | | | | |
| 2019 | | | | | |
| 2020 | | | | | |
| 2021 | | | | | |
| 2022 | | | | | |
| 2023 | | | | | |
| 2024 | | | | | |
| 2025 | | | | | |
| 2026 | | | | | |
| 2027 | | | | | |
| 2028 | | | | | |
| 2029 | | | | | |
| 2030 | | | | | |
| 2031 | | | | | |
| 2032 | | | | | |
| 2033 | | | | | |
| 2034 | | | | | |
| 2035 | | | | | |
| 2036 | | | | | |
| 2037 | | | | | |
| 2038 | | | | | |
| Total | | | | | |

* Total avoided fuel cost is for Hawaiian Electric avoided fuel. This does not include possible avoided fuel from Independent Power Producers

ATTACHMENT F

Avoided Hawaiian Electric Variable O&M Costs and Total Avoided Costs

| Year | Avoided Fuel Costs * | Avoided O&M Costs * | Total Avoided Costs | Imputed Debt ** | Total Avoided Costs Including Imputed Debt | Present Value Factor | Total Avoided Costs Including Imputed Debt (PV,2014\$) |
|------|----------------------|---------------------|---------------------|-----------------|--|----------------------|--|
| 2017 | | | | | | 0.762 | |
| 2018 | | | | | | 0.712 | |
| 2019 | | | | | | 0.665 | |
| 2020 | | | | | | 0.622 | |
| 2021 | | | | | | 0.581 | |
| 2022 | | | | | | 0.543 | |
| 2023 | | | | | | 0.507 | |
| 2024 | | | | | | 0.474 | |
| 2025 | | | | | | 0.443 | |
| 2026 | | | | | | 0.414 | |
| 2027 | | | | | | 0.386 | |
| 2028 | | | | | | 0.361 | |
| 2029 | | | | | | 0.337 | |
| 2030 | | | | | | 0.315 | |
| 2031 | | | | | | 0.294 | |
| 2032 | | | | | | 0.275 | |
| 2033 | | | | | | 0.257 | |
| 2034 | | | | | | 0.240 | |
| 2035 | | | | | | 0.224 | |
| 2036 | | | | | | 0.210 | |
| 2037 | | | | | | 0.196 | |
| 2038 | | | | | | 0.183 | |

Annual Energy Accumulated Net Present Value (2014 MWH) [REDACTED]

Avoided Cost Accumulated Net Present Value (2014\$) [REDACTED]

Levelized Avoided Cost (\$/MWH) [REDACTED]

Levelized Waiawa PV, LLC Contract Pricing Including Imputed Debt(\$/MWH) 137.28

Waiawa PV, LLC Pricing is: [REDACTED]

* Avoided Fuel and Avoided O&M Costs include avoided IPP costs

** 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 V.F.3 of the instant application. Since the imputed debt amount is considered a cost incurred by the utility, for the purposes of the pricing evaluation, the imputed debt amount is considered a reduction of avoided costs.

| Year | Total Payments (PV, 2014 MW/H) | Total Avoided Costs (PV, 2014\$) | \$ | \$ |
|-------|-----------------------------------|--|----|----|
| 2017 | 8,580,822 | | | |
| 2018 | 7,974,813 | | | |
| 2019 | 7,409,757 | | | |
| 2020 | 6,905,509 | | | |
| 2021 | 6,398,908 | | | |
| 2022 | 5,946,146 | | | |
| 2023 | 5,524,985 | | | |
| 2024 | 5,148,145 | | | |
| 2025 | 4,768,731 | | | |
| 2026 | 4,429,730 | | | |
| 2027 | 4,117,439 | | | |
| 2028 | 3,839,096 | | | |
| 2029 | 3,559,128 | | | |
| 2030 | 3,308,166 | | | |
| 2031 | 3,076,436 | | | |
| 2032 | 2,868,263 | | | |
| 2033 | 2,658,612 | | | |
| 2034 | 2,472,150 | | | |
| 2035 | 2,298,531 | | | |
| 2036 | 2,142,761 | | | |
| 2037 | 1,996,531 | | | |
| 2038 | 1,865,428 | | | |
| Total | 97,290,106 | | | |

Total Costs Analysis Summary

ATTACHMENT G

ATTACHMENT H

Hawaiian Electric Historical Short-run Avoided Energy Cost Rate

| Month – Year | Avoided Energy Rate | |
|----------------|---------------------|----------------------|
| | On-Peak (\$/MWh) | Off-Peak (\$/MWh) |
| January 2012 | 261.97 | 192.37 |
| February 2012 | 260.45 | 184.81 |
| March 2012 | 263.49 | 197.71 |
| April 2012 | 274.36 | 205.34 |
| May 2012 | 282.71 | 210.04 |
| June 2012 | 286.50 | 210.23 |
| July 2012 | 288.03 | 207.79 |
| August 2012 | 272.60 | 198.01 |
| September 2012 | 261.97 | 192.18 |
| October 2012 | 261.97 | 192.56 |
| November 2012 | 260.96 | 190.49 |
| December 2012 | 254.38 | 184.29 |
| January 2013 | 225.37 | 166.54 |
| February 2013 | 222.39 | 162.73 |
| March 2013 | 222.61 | 163.40 |
| April 2013 | 229.27 | 164.56 |
| May 2013 | 228.82 | 162.73 |
| June 2013 | 224.91 | 160.08 |
| July 2013 | 222.61 | 160.08 |
| August 2013 | 230.89 | 161.91 |
| September 2013 | 211.12 | 152.62 |
| October 2013 | 226.97 | 160.41 |
| November 2013 | 234.57 | 164.56 |
| December 2013 | 233.19 | 163.56 |
| January 2014 | 198.97 | 155.39 |
| February 2014 | 194.88 | 151.43 |
| March 2014 | 196.12 | 150.21 |
| April 2014 | 195.95 | 150.62 |
| May 2014 | 198.25 | 149.4 |
| June 2014 | 198.43 | 150.62 |
| July 2014 | 197.01 | 151.43 |
| August 2014 | 197.36 | 149.53 |
| September 2014 | 197.73 | 147.89 |
| October 2014 | 188.31 | 142.03 |
| November 2014 | 171.26 | 130.32 |
| December 2014 | 157.58 | 120.78 |

ATTACHMENT I

Hawaiian Electric Cost of Capital Assumptions for Avoided Cost Analysis

| 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% | 5.50% | 2.090% | 1.277% |
| Hybrid | 2.00% | 6.00% | 12.000% | 0.073% |
| Preferred Stock | 1.00% | 6.00% | 6.000% | 0.060% |
| Common Stock | <u>56.00%</u> | 10.00% | <u>5.600%</u> | <u>5.600%</u> |
| | 100.00% | | 7.900% | 7.028% |

- * The cost of capital assumptions for the avoided cost analysis was developed for Hawaiian Electric planning purposes by its Financial Analysis Division

Waiawa PV Typical Residential Bill Impact

| Line | Description | Calendar Yr: | 2017 | 2020 | 2025 | 2030 | 2035 |
|-----------------|---|--------------|--------------|--------------|--------------|--------------|--------------|
| a | Waiawa PV Energy Purchased (MWh) ¹ | | 81,771 | 80,726 | 78,483 | 71,884 | 71,420 |
| b | Waiawa PV Total Payment (Current Year \$) ² | | \$11,259,485 | \$11,109,066 | \$10,773,870 | \$10,496,470 | \$10,242,204 |
| c | Hawaiian Electric Total Avoided Cost (Current Year \$) ³ | | | | | | |
| d = b-c | Incremental Cost Total (Current Year \$) | | (\$564,208) | (\$799,029) | \$1,660,651 | \$2,187,209 | \$730,452 |
| e | Revenue Taxes Adjustment Factor | | 109.75% | 109.75% | 109.75% | 109.75% | 109.75% |
| f = d*e | Incremental Revenues Required (Current Year \$) | | (\$619,226) | (\$876,946) | \$1,822,588 | \$2,400,493 | \$801,681 |
| g | Estimated Hawaiian Electric Sales ⁴ (MWh) | | 6,962,000 | 6,949,000 | 6,558,000 | 5,459,000 | 5,538,000 |
| h = (f/g)/10 | Estimated Rate Impact (cents/kWh in Current Year \$) | | (0.009) | (0.013) | 0.028 | 0.044 | 0.014 |
| i = (600*h)/100 | Est Impact on Typ Residential Bill of 600 kWh (Current Year \$) | | (\$0.05) | (\$0.08) | \$0.17 | \$0.26 | \$0.08 |

Notes:

1. Attachment 4C of instant application.
2. Attachment 4D of instant application. See "Total Payments (\$)".
3. Attachment 4F of instant application. See "Total Avoided Costs Including Imputed Debt (\$)".
4. Attachment 4B of instant application.

EXHIBIT 6

Key PPA Terms and Conditions

The specific terms and conditions of the PPA were negotiated by the Parties at arms-length, over a period of several months. The PPA contains indemnification, insurance, third party evaluations and other provisions, including, provisions pertaining to the Term, WPV's delivery of as-available renewable energy from the Facility, and WPV's compliance with laws, which will serve to protect Hawaiian Electric and its customers from certain risks associated with interconnecting the Facility to Hawaiian Electric's system. Moreover, the terms and conditions of the PPA will not affect Hawaiian Electric's ability to provide electric service to its customers and is not discriminatory to other small power producers. Hawaiian Electric contends that, for these reasons, the purchased power arrangements (i.e., terms and conditions) under the PPA, pursuant to which Hawaiian Electric purchases energy from WPV, are prudent and in the public interest. A summary of some of the key terms and conditions of the PPA is provided below.

1. Term

a. Initial Term, Banked Curtailed Energy Term and Extended Term. In general, subject to Section 12.1 of the PPA, the Term of the PPA commences upon the Execution Date and remains in effect for an Initial Term of twenty-two (22) years following the Commercial Operations Date. The Initial Term is two (2) years longer than the term specified in the Model PPA. This extended Initial Term provided the best pricing from developers and was uniformly adopted for all Waiver Projects.

Subsequent to the Initial Term, pursuant to Section 12.10 of the PPA, the Company may extend the Term of the PPA for a period (the "Banked Curtailed Energy Term"),

not to exceed five (5) years, that is necessary for all Banked Curtailed Energy to be delivered to the Company. The concept of this specific option to extend the Term is a new provision developed to provide a benefit for the Compensable Curtailed Energy that, under the RAP Pricing, will have been paid for but not delivered during the Initial Term. The Contract Price for energy delivered during the Banked Curtailed Energy Term will be substantially less than the Contract Price for the Initial Term¹. The Banked Curtailed Energy Term is discussed in more detail in Section 3 ("Take or Pay" or "RAP" Pricing) of this Exhibit 6 (Key PPA Terms and Conditions).

Upon the expiration of the Initial Term or (if the Company has exercised its option to extend the Term for Banked Curtailed Energy) the expiration of the Banked Curtailed Energy Term, the PPA automatically continues in effect until terminated by either Party upon not less than ninety (90) days advance written notice to the other Party.²

b. Commission Approval and Associated Termination Rights. Upon the Execution Date, the Parties are required to use good faith efforts to obtain, as soon as practicable, a PUC Approval Order that does not contain terms and conditions deemed to be unacceptable by Hawaiian Electric as set forth in the PPA.³

The PPA includes the standard provisions that if a satisfactory PUC Approval Order is not obtained within twelve (12) months of the PUC Submittal Date or within a longer

¹ See §1(b) of Attachment J (Energy Purchases by Company) of the PPA.

² See PPA §12.1 (Term).

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

period agreed to by the Parties, Hawaiian Electric or WPV may, by written notice delivered within one hundred eighty (180) days of such date, declare the PPA null and void.⁴

Additionally, if a PUC Approval Order is obtained within twelve (12) months of the PUC Submittal date but that order is appealed, and a Non-appealable PUC Approval Order is not obtained within eighteen (18) months of the PUC Submittal Date, or within a longer period agreed to by the Parties, Hawaiian Electric or WPV may, by written notice delivered within ninety (90) days of such date, declare the PPA null and void.⁵

At WPV's request, the PPA includes a special provision calling for specific dates by which a PUC Approval Order and non-appealable PUC Approval Order are to be obtained such that (1) if a satisfactory PUC Approval Order is not obtained by May 4, 2015, or such other later date as the Parties may agree, or (2) if a non-appealable PUC Approval Order is not obtained by June 4, 2015, or such other later date as the Parties may agree, WPV may, by written notice delivered within ninety (90) days of either such date, declare the PPA null and void.⁶

Finally, subject to the terms and conditions of Section 12.6 (A) of the PPA, if the PUC Submittal Date has not occurred by December 4, 2014, for the PPA, or such other date as Hawaiian Electric and WPV may agree, WPV may, by written notice delivered to Hawaiian Electric, declare the PPA null and void.

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

- WPV makes material changes in the type of or performance specifications

⁴ See PPA § 12.6(B)(2) (Time Period for PUC Approval).

⁵ Id.

⁶ See PPA §12.6(B)(1) (Time Period for PUC Approval).

of the equipment that affect the results of the IRS or project schedule;

- WPV is in breach of Section 22.2(B) or Section 3(b)(ii) of the PPA;
- WPV requests Company to stop or delay performance; or
- WPV notifies Company it desires to modify the PPA or the Facility as described in the PPA and interconnection requirements study.

d. Termination Rights upon Default. Notwithstanding any of the foregoing, the PPA may be terminated in accordance with the terms of Article 15 (Events of Default).⁷

e. Reactive Power Curve Null and Void Right. The Parties agreed that the reactive power capability of the Facility could be illustrated in a reactive power curve instead of listing a range of reactive power output levels in Section 3(b)(i) (Reactive Amount) of Attachment B (Facility Owned by Seller) of the PPA. The reactive power curve for the Facility's inverters has been attached as Exhibit B-2 (Reactive Power Curve) to Attachment B (Facility Owned by Seller) of the PPA. The parties were unable to receive the reactive power curve from the inverter manufacturer until the Execution Date of the PPA; therefore, language was added to the PPA to allow Hawaiian Electric to review the curve and if necessary require further study of the reactive power capability of the inverters within 5 Business Days of the Execution Date. If further study is needed and such study requires alterations to the power curve or the installation of an alternative reactive power device external to the inverters, and if WPV is not agreeable to such changes, WPV has the ability to declare the PPA null and void within thirty (30) Days of completion of such analysis.

⁷ See PPA, §12.8.

2. Energy Pricing

As discussed above, energy payments by Hawaiian Electric to WPV were negotiated through a competitive process and based on a pricing structure and pricing level determined through a series of proposals and arms-length negotiations between the Parties. The pricing terms for the Project are covered in Attachment J (Energy Purchases by Company) of the PPA. Specifically, Table J-1 (Contract Rate) of Attachment J (Energy Purchases by Company) sets forth the Contract Price for each year during the 22-year Initial Term.

a. Hawaii State Tax Credit Price Adjustment. The Contract Rate, however, is subject to adjustment according to Section 3 (Tax Credit Pass Through) of Attachment J (Energy Purchases by Company) of the PPA. According to this provision, WPV will return 90% of the applicable state tax incentive to the ratepayers by way of a credit against Hawaiian Electric's monthly energy payments. Hawaiian Electric and WPV will jointly choose an independent expert to recommend by which available tax election WPV will maximize the credit against payments; the expert will also recommend whether or not to deal with a tax equity investor. If neither Party objects to the recommendation of the independent tax expert, WPV will exert commercially reasonable efforts to successfully implement the expert's recommendation.⁸ WPV will be subject to liquidated damages if it fails to implement the agreed upon recommendation. If either party disagrees with the independent expert's recommendation Section 3(j) of Attachment J (Energy Purchases by Company) of the PPA provides that the disagreement will be handled as a dispute pursuant to Article 28 of the PPA.

If WPV subsequently becomes aware that implementing the expert's recommendation will result in less of a credit than would be the case under an alternative

⁸ See § 3(j) of Attachment J (Energy Purchases by Company) of the PPA.

approach, WPV will notify Hawaiian Electric and the parties will agree on a course of action. Because the proceeds of any deal with a tax equity investor (a "monetization" of the tax credit) cannot be known with certainty until the transaction date, and because the energy credit resulting from a monetization will be net of transaction costs, WPV will provide Hawaiian Electric with an opportunity to object to the terms of a proposed monetization transaction before entering into any binding agreements.

b. Other Adjustments to Energy Pricing. Hawaiian Electric is required to accept and pay for electric energy at the rates set forth in Table J-1 (Contract Rate); provided, however, pursuant to Section 1 (Contract Price) of Attachment J (Energy Purchases by Company) of the PPA, in any Contract Year, if the sum of the Actual Output plus Compensable Curtailed Energy for such Contract Year is in excess of 110% of the Annual Contract Energy for such Contract Year (as determined pursuant to Section 2.2 (Payments for Electric Energy) of the PPA), then the price paid for such energy in excess of 110% will be 50% of the otherwise applicable Contract Price for such electric energy.

During the Banked Curtailed Energy Term, Hawaiian Electric will pay for electric energy delivered during such term at the reduced "Energy Payment Rate" specified in Section 1(b) (Banked Curtailed Energy Term) of PPA Attachment J (Energy Purchases by Company). Further, during the Banked Curtailed Energy Term, Hawaiian Electric shall not be responsible for the payment of any Compensable Curtailed Energy.

The PPA also requires Hawaiian Electric to use reasonable efforts to accept test energy that is delivered as part of the normal testing for generators, provided that WPV is also required to use reasonable efforts to coordinate such normal testing with Hawaiian Electric so as to minimize adverse impacts on Hawaiian Electric's system and operations. Hawaiian Electric

will compensate WPV for test energy, as provided in Section 2.5 (Payments Prior to Commercial Operations Date) of the PPA.

3. **"Take or Pay" or "Risk Adjusted Pricing"**

The PPA is an "Risk-Adjusted Pricing" ("RAP") energy PPA, pursuant to which Hawaiian Electric will purchase the energy made available to the Company in accordance with the terms and conditions of the PPA, subject to Hawaiian Electric's rights in the PPA to curtail, interrupt or reduce deliveries of electric energy for certain enumerated purposes or causes, including a system emergency, Forced Outage, the inability to accept deliveries of electric energy due to light loading conditions or if accepting energy from WPV would require Hawaiian Electric to operate the Company System outside of Good Engineering and Operating Practices.⁹ In contrast to prior as-available energy PPA's previously submitted for approval to the Commission by Hawaiian Electric, this RAP PPA also requires Hawaiian Electric to pay for certain curtailed energy, primarily energy curtailed for excess energy conditions as defined in the PPA.

Essentially, Hawaiian Electric will pay at the same contract rate for both electric energy delivered pursuant to the PPA and for Compensable Curtailed Energy, which is defined as Curtailed Energy that results from a Compensable Curtailment Event. This pricing structure for electric energy is sometimes referred to as "RAP Pricing" or "Take or Pay Pricing" herein. This concept has produced the lowest contract prices for electric energy from developers participating in the Waiver Invitation. Hawaiian Electric's recovery for payments made to WPV for Compensable Curtailed Energy is reasonable because the contractual mechanism for such

⁹ See PPA § 8.1 (General).

payments has reduced financing uncertainty for WPV and has thereby enabled an additional reduction in WPV's proposed energy price. Without the contractual take-or-pay arrangement, WPV's proposed energy rate would be approximately 2.5¢ per kWh higher than the energy price set forth herein.

A Compensable Curtailment Event is defined in relevant part as:

"Compensable Curtailment Event": Any Curtailment Event other than a Curtailment Event due to (a) an Emergency, (b) a Forced Outage, (c) the Facility not operating in compliance with Good Engineering and Operating Practices, (d) the Company's construction, installation, maintenance, repair, replacement, removal, investigation, testing or inspection of any of its equipment or any part of the Company System, including accommodating the installation and/or acceptance test of non-utility owned facilities to Company System, or (e) Force Majeure; provided, however, that any Curtailment Event initiated by Company during the hours of 7:00 a.m. and 6:00 p.m. HST for the purpose of Planned Maintenance or Wahiawa 138 kV Maintenance above the Maintenance Cap shall be a Compensable Curtailment Event.

See PPA "Definitions" at 7.

An Emergency is defined as:

"Emergency": Shall mean, as determined by the Company in its reasonable discretion, a condition or situation, unless caused by Excess Energy Conditions, requiring immediate action by Company (a) to maintain the reliable operation of the Company System; (b) to prevent or limit the loss of load or generation; (c) to maintain public safety or the safety of Company's personnel; or (d) to protect Company, customer, or third-party property.

See PPA "Definitions" at 10.

A Forced Outage is defined as:

"Forced Outage": An unplanned unit shutdown caused by factors such as automatic or programmed protective trips and operator-initiated trips due to equipment malfunction, and which terminates when Company determines according to Good Engineering and Operating Practices that it is safe to bring the Facility back onto the Company System.

See PPA "Definitions" at 13.

The procedures for the calculation and reporting of Curtailed Energy are set forth in PPA Attachment U (Calculation and Reporting of Curtailed Energy). By the tenth Business Day of each calendar month following the Commercial Operations Date, the Seller is required to deliver a Curtailment Report in a specified format.¹⁰ WPV is also obligated to provide Hawaiian Electric with any additional data or supporting documentation necessary for Company to audit and verify the Curtailment Report.¹¹

The amount of "Curtailed Energy" during any Curtailment Event is the positive difference between the Calculated Output and Actual Output over the duration of such Curtailment Event.¹² "Calculated Output" is calculated using the Facility Output Model taking into account actual operating conditions, such as de-rated units, pursuant to guidelines set forth in the PPA.¹³ The Facility Output Model utilizes SCADA measured solar irradiance and ambient temperature for the preceding three calendar months to calculate the expected energy (kWh) and a 15-minute power (kW) production of the Facility consistent with the resolution and accuracy requirements set forth in Section 8 (Data and Forecasting) of PPA Attachment B (Facility Owned by Seller) of the PPA.

In the event of any dispute as to the amount Curtailed Energy or as to whether the Curtailment Event in question constituted a Compensable Curtailment Event, the dispute will first be submitted to an Independent Curtailment Evaluator for an advisory opinion. If either or both of the parties are unwilling to accept such advisory opinion, either party may submit the dispute to formal dispute resolution (e.g., arbitration) under PPA Article 28 (Dispute Resolution),

¹⁰ See §2 (Curtailment Report) and §4 (Format of Curtailment Report) of PPA Attachment U (Calculation and Reporting of Curtailed Energy).

¹¹ See §2 (Curtailment Report) of PPA Attachment U (Calculation and Reporting of Curtailed Energy).

¹² See PPA "Definitions," Exhibit 1 at 8.

¹³ See PPA "Definitions," Exhibit 1 at 4 and §3(b) (Calculation and Reporting of Curtailed Energy) of PPA Attachment U (Calculating and Reporting of Curtailed Energy).

but in formal dispute resolution, the party that is unwilling to accept the advisory opinion will have the burden of proving it to be incorrect.¹⁴

Article 2 of the PPA (Purchase and Sale of Energy; Rate for Purchase and Sale; Payment for Compensable Curtailed Energy; Billing and Payment) has been reorganized to accommodate the procedures for invoicing and paying for Compensable Curtailed Energy. Electric energy purchased by Hawaiian Electric and Compensable Curtailed Energy will be invoiced separately. The provisions from the Model PPA that deal with the invoicing and payment for electric energy have been consolidated into a new Section 2.7 (Invoices for Electric Energy). The obligation to pay for Compensable Curtailed Energy is set forth in a new Section 2.6 (Payment for Compensable Curtailed Energy). The procedures for invoicing and payment for Compensable Curtailed Energy are set forth in a new Section 2.8 (Invoices for Compensable Curtailed Energy), and are modeled after the procedures for invoicing and paying for electric energy except that payment for electric energy is due by the end of the month following the invoicing for such payment while the payment for Compensable Curtailed Energy is due by the end of the second month following the invoicing for such payment. The purpose of this additional month is to allow Hawaiian Electric additional time to review the invoices for Compensable Curtailed Energy and the accompanying Curtailment Report described above.

Section 2.8(A) (Company's Obligation to Provide Certain Data) also provides that if the reason for a Curtailment Event is not provided to WPV at the time of curtailment, within five business days of the month Hawaiian Electric shall provide WPV a written statement identifying the reason for each Curtailment Event in the previous month. WPV must provide Company a curtailment report, if such report identifies any Curtailment Events in which Company has still

¹⁴ See §5 (Disagreements Concerning Curtailed Energy) of PPA Attachment U (Calculation and Reporting of Curtailed Energy).

not provided a reason for the Curtailment Event. Company must provide such reason within 15 days of receipt of the curtailment report. If Company still fails to provide a reason for the Curtailment Event, such Curtailment Event shall be deemed a Compensable Curtailment Event. Once the payment is made for either electric energy or for Compensable Curtailed Energy, the PPA includes in Section 2.9 (Adjustment to Invoice After Payment) the same three-year limitation period as is provided in the Model PPA for adjusting an invoice and recouping payment or paying any deficiency if the invoice in question is found to be accurate.

The Compensable Curtailed Energy paid for by Hawaiian Electric will be “banked” and, at the end of the Initial Term, Hawaiian Electric will have the option of extending the Term of the PPA for a Banked Curtailed Energy Term, which will expire on the first to occur of (i) the last Day of the calendar month during which the last of the Banked Curtailed Energy is delivered to Hawaiian Electric or (ii) the fifth anniversary of the end of the Initial Term.¹⁵ The contract rate for energy delivered during the Banked Curtailed Energy Term is substantially less than the contract rate during the Initial Term, and Seller will not be paid for Compensable Curtailed Energy during the Banked Curtailed Energy Term.¹⁶ The rationale for the lower contract rate during the Banked Curtailed Energy Term is that Hawaiian Electric has already paid for the Banked Curtailed Energy and payments to Seller during the Banked Curtailed Energy Term should be for purposes of covering operating and maintenance costs.

If WPV does not want to operate the Facility during the Banked Curtailed Energy Term, WPV can “opt out” of the Banked Curtailed Energy Term, forfeit the Operating Period Security to Hawaiian Electric, and allow Hawaiian Electric to operate the Facility during that

¹⁵ See PPA §12.10 (Company’s Option to Extend Term for Banked Curtailed Energy).

¹⁶ See §1(b) (Banked Curtailed Energy Term) of PPA Attachment J (Energy Purchases by Company).

period.¹⁷ As discussed in Section 6 (Company's Right of First Negotiation to Purchase Facility and Other Purchase Rights) of this Exhibit 6, if performance of the Facility during the Banked Curtailed Energy Term falls below the threshold established during the last Contract Year of the Initial Term, Hawaiian Electric has the option to purchase the Facility.¹⁸ The rationale for this purchase option is to give Seller an incentive to maintain the Facility during the Banked Curtailed Energy Term notwithstanding the reduction in the contract rate for energy delivered during that period.

4. Company Milestones.

WPV's pricing is dependent on achieving the 30% federal ITC, which is currently set to expire at year-end 2016. Due to the compressed time frames made necessary by this requirement, WPV requested Hawaiian Electric to agree to meet certain milestones (the "Company Milestones") to provide WPV with assurance that it could meet the Commercial Operations Date in time to qualify for the ITC.¹⁹

In response, Hawaiian Electric agreed to certain threshold filing dates for this Application, as described in Sub-section 1(b) (Term) of this Exhibit 6 (Key PPA Terms and Conditions).

Further, if WPV complete certain "Seller's Conditions Precedent" as set forth in Attachment K-1 (Company Milestones and Seller's Conditions Precedent) of the PPA, Hawaiian Electric has agreed to further Company Milestones to commence the Acceptance Test and complete energization of the Company-Owned Interconnection Facilities by dates certain, as described in Attachment K-1 (Company Milestones and Seller's Conditions Precedent) of the

¹⁷ See PPA §12.10(C) (Sellers Option to "Opt Out" of Banked Curtailed Energy Term).

¹⁸ See PPA §12.10(D) (Company's Purchase Option During Banked Curtailed Energy Term).

¹⁹ See PPA § 12.8 (Company Milestones).

PPA. If Seller completes the Seller's Conditions Precedent by the deadlines set forth in the PPA, but Hawaiian Electric is unable to complete the Company Milestones by their deadlines and such failure is not cured by Hawaiian Electric within 10 days, WPV has the ability, as its sole remedy, to declare the PPA null and void.²⁰

5. Curtailment Block

With the PPAs for the Waiver Projects, the Company has instituted a new curtailment block concept. The curtailment block concept was intended to provide a mechanism for multiple projects with anticipated commercial operation dates in close proximity, such as the waiver projects selected under the Invitation (as defined in the Application), to be accommodated equitably within the existing reverse chronological seniority policy. By including all of the projects selected as part of the Waiver Invitations in the curtailment block, all participants are able to equally assess their risks related to curtailment seniority, which would have otherwise been out of their control under the previous PPA provisions that correlate curtailment seniority with the date of the Commission's non-appealable PPA approval.

The specific block curtailment mechanisms are set forth in Section 2(e)(iii) of Attachment B (Facility Owned by Seller) of the PPA. All projects within the curtailment block will have the same curtailment seniority date and curtailment will be shared proportionally for all projects within the block. The block curtailment procedures are set forth in Attachment T (Block Curtailment Procedures) to the PPA. Attachment T to the PPA provides an explanation with illustrative examples of how curtailment would occur under the block mechanism. In order to qualify for the block, a particular project's guaranteed commercial operations date, and achievement of the commercial operations date must both occur on or before the latter of

²⁰ Id.

eighteen (18) months following the Effective Date of such project's PPA, or December 31, 2016 (the "Qualifying Deadline"). The projects eligible for the block include the Waiver projects in Docket No. 2013-0156 and Docket No. 2013-0381 ("Block Eligible Projects"). The chronological seniority date of the block will be determined by the Commercial Operations Date of the "Lead Project." The Lead Project will be the first of the Block Eligible Projects that both (i) has a guaranteed commercial operations date under the power purchase agreement for such project that is on or before the Qualifying Deadline for such project and (ii) achieves its commercial operations date under its power purchase agreement.

If a project does not qualify for the curtailment block because it missed its Qualifying Deadline, such project's chronological seniority date for purposes of implementing curtailment in reverse chronological order shall be the later of the (i) the date that is one day after the chronological seniority date for the curtailment block or (ii) the date that shall be determined by adding to the Effective Date one day for each date the commercial operations date for such project is later than eighteen (18) months after the effective date for such project. If no projects qualify for the block and therefore there is no curtailment block established, then the projects' chronological seniority date shall be each such project's effective date, unless a project does not achieve a commercial operations date on or before eighteen (18) months following the effective date for such project, in which case the chronological seniority date for curtailment of such project will be adjusted by adding one day for each day the commercial operations date for such project is latter than eighteen (18) months after the effective date.

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

Purchase Rights

Under certain conditions in which WPV wishes to dispose of the Facility or effect a change in control of WPV, Hawaiian Electric shall have a right a first negotiation to purchase the Facility from WPV.²¹ Further, in the event that Hawaiian Electric is subject to consolidation and capital lease treatment under FASB ASC 810 and 840, respectively, with respect to WPV and the Facility, in addition to such other efforts that may be taken by the Parties to eliminate such accounting treatment, the parties may agree to effectuate a sale of the Facility to the Company.²² Such sale shall be on commercially reasonable terms at a fair market value.

Finally, during the Banked Curtailed Energy Term, Hawaiian Electric has negotiated an option to purchase the Facility in the event that, for any 12-month period during the Banked Curtailed Energy Term, the "Performance Ratio" of the Facility for such period falls below 85% of the average monthly Performance Ratio for the last year of the Initial Term. Upon such occurrence, WPV shall, if requested by Company, take commercially reasonable steps to effectuate a sale of the Facility to Hawaiian Electric²³.

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

7. Modeling and Source Code Escrow.

Pursuant to Section 6 (Modeling) of Attachment B (Facility Owned by Seller) of the PPA, WPV shall provide detailed data regarding the design and location of the Facility to

²¹ See PPA §19.1 (Sale of the Facility) and PPA Attachment P (Sale of Facility by Seller).

²² See PPA § 24.5.

²³ See PPA § 12.10(D).

permit the modeling of the various systems of the Facility (each a "Required Model" and collectively, the "Required Models"). If the Required Models are not provided in the form of "Source Code" (as defined in the "Definitions" section of the PPA), WPV shall be responsible for causing the relevant Source Code for the Required Models to be deposited into a Source Code escrow account under an agreement which shall specify the specific conditions upon which such Source Code may be released to Hawaiian Electric or in the alternative establish a Monetary Escrow. Generally, such Source Code or the funds from the Monetary Escrow will be made available to Hawaiian Electric under circumstances where Required Models need to be rebuilt or updated and the Required Model or relevant Source Code is unavailable due to the unavailability of the applicable equipment manufacturer and/or Source Code developer.

8. Meters

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

Section 10.1 of the PPA also provides that "Company shall test such revenue meter prior to installation and shall test such revenue meter every fifth (5th) year [emphasis added]. Seller shall reimburse Company for all reasonably incurred costs for the procurement, installation, maintenance and testing work associated with the Revenue Metering Package. Hawaiian Electric acknowledges that the Commission, in two separate dockets seeking approval

of PPAs, required annual meter testing, consistent with the Hawaiian Electric Companies"²⁴ Feed-in Tariff ("FIT") Tier 3 PPA proposal that was filed in the FIT docket (Docket No. 2008-0273).²⁵

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

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

Second, annual meter testing for this Project is simply not cost-effective. This Project is 45.9 MW compared to the size of other existing IPP projects (e.g., Kalaeloa (208 MW), AES (180 MW), and HPower (73 MW)). Given the relatively lower volume of kilowatt-hours being measured by the meter for this Project, it is reasonable, from a cost-benefit perspective, to require less frequent meter testing. Importantly, the Hawaiian Electric Companies' PPAs, including this PPA, generally require IPPs to reimburse the utility for all reasonably incurred costs for meter testing. Thus, elongating the period for required meter

²⁴ "Hawaiian Electric Companies" collectively refers to Hawaiian Electric, Maui Electric Company, Limited, and Hawai'i Electric Light Company, Inc.

²⁵ See Decision and Order, filed on November 18, 2011, in Docket No. 2011-0185 (approving PPA for Kapolei Sustainable Energy Park); Decision and Order No. 30712, filed on October 22, 2012, in Docket No. 2011-0384 (approving PPA for Kalaeloa Renewable Energy Park).

testing under future PPAs will result in cost savings to IPPs, which may flow through to ratepayers via lower contract prices.

Third, lengthening the period for meter testing improves operational efficiencies.

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

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

9. Compliance with Laws and Regulations

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

and land rights for construction, ownership, operation and maintenance of Company-Owned Interconnection Facilities and Company Substation Work.²⁶

10. Site Restoration

After termination of the PPA, or if the PPA is declared null and void, if upon Hawaiian Electric's request, WPV will, at its expense, remove all (1) Company-Owned Interconnection Facilities and Seller-Owned Interconnection Facilities from the Land, and (2) restore the Land to its condition prior to construction. Hawaiian Electric may elect to remove all or part of the designated Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities itself because of operational concerns, in which case WPV will reimburse Hawaiian Electric for the cost of removal.²⁷

11. Autoscheduling

The results of the interconnection requirements study found that the Waiver Projects may have the capability to implement autoscheduling functionality to allow the Waiver Projects' facilities to quickly increase output when Hawaiian Electric loses a larger generator on the Company System. Under the Autoscheduling functionality, very fast direct transfer connections would be added from several (up to four (4)), of Hawaiian Electric's large generators to each of the Waiver Projects' facilities. When one of these large generators trip, a signal would be sent to the Waiver Projects via the direct transfer connection to notify the Waiver Projects' control systems that a certain large generator had tripped. The Waiver Projects' would then raise their block curtailment set point by the value for the particular large generator loss.

²⁶ See PPA §§ 11.1-11.3.

²⁷ See §7 (Land Restoration) of PPA Attachment G.

As Hawaiian Electric is still determining the need for such functionality a new provision has been added in Section 10 (Autoscheduling) of Attachment B (Facility Owned by Seller) of the PPA to allow Hawaiian Electric to determine in the future if autoscheduling is necessary and requires implementation. For now space will be reserved in Hawaiian Electric's control house or near the Hawaiian Electric cabinets to add the two racks needed to accommodate autoscheduling in the future. If Company chooses to implement autoscheduling, Company shall pay for the needed equipment, software upgrades, and installation of such equipment and software necessary for such implementation. In addition, if Company decides to implement autoscheduling it will be implemented for all facilities in Curtailment Block A.

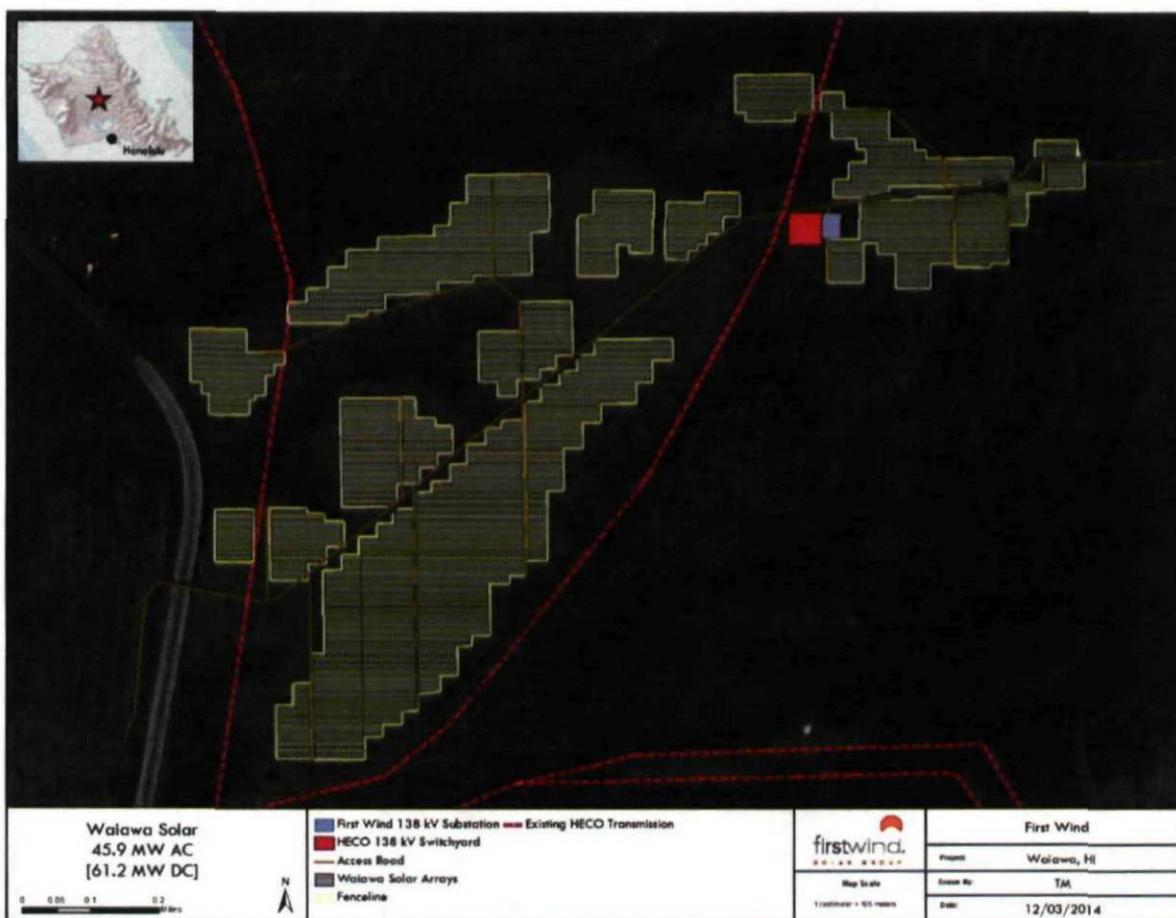
12. N-1-1 Contingency

A new section 29.26 (N-1-1 Contingency) was added to the PPA which discusses the need for an Additional IRS study related to the waiver projects connecting in the Wahiawa region. Section V.E.6. (Additional Interconnection Requirements Study) of the Application provides further detail regarding the Additional IRS and PPA Section 29.26 (N-1-1 Contingency).

PV Facility Pro Forma

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EXHIBIT 8
PAGE 1 OF 1



Waiver Project IRS

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Waiver Project IRS

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November 26, 2014

The Honorable Chair and Members of
the Hawaii Public Utilities Commission
465 South King Street
Kekuanaoa Building, 1st Floor
Honolulu, HI 96813

Re: Application for Approval of First Wind's Waiawa Photovoltaic Project

Dear Commissioners:

First Wind Holdings, LLC's ("First Wind's") affiliate Waiawa PV, LLC is the developer of the Waiawa photovoltaic project ("Waiawa PV Project"), which was among the projects (collectively, the "Waiver Projects") selected by the Hawaiian Electric Company, Inc. ("HECO") as part of a competitive solicitation held in 2013. By this letter, First Wind would like to provide information to the Hawaii Public Utilities Commission ("Commission") regarding the critical path development schedule for the Waiawa PV Project, and respectfully request that the Commission issue an order approving the Power Purchase Agreement ("PPA") for the project no later than May 4, 2015 to ensure that the project can be completed prior to the close of 2016.

The financing and construction of interconnection facilities are the primary critical path issue for the Waiawa PV Project. We do not believe that the Waiawa PV Project (or, to the extent we are aware, other Waiver Projects) can be successfully developed without a financial close in July, 2015. Commission approval of the PPA for the Waiawa Project would need to be received by May 4, 2015, in order for any appeal period to pass in time to allow financial closing to occur in July 2015. A later decision, even if it were an approval, could impact construction schedules and put at risk the eligibility of the projects for the 30% federal investment tax credit ("ITC"), and therefore prevent consumers from benefitting from the low energy prices offered by the projects. Following financing, Waiver Project developers would need to complete engineering and procure major equipment in Q3 2015 and begin construction of the solar arrays, collector system and interconnection facilities in Q4 2015. Construction would need to be completed in Q3 2016 to allow time for commissioning and final testing to ensure that the projects will achieve full commercial operation by the end of 2016. This compressed timeline is essential for the projects to qualify for ITC and offer low power prices, but it does not leave room for delays.

Because of the potentially catastrophic consequence on the projects of a delay in Commission

EXHIBIT 11
PAGE 2 OF 2

The Honorable Chair and Members of
the Hawaii Public Utilities Commission
November 24, 2014
Page 2 of 2

decision regarding the PPA, the significant investment that First Wind will be making in the Waiawa PV Project, and the additional risk that would be associated with a protracted approval, Section 12.5 of the PPA for the Waiawa PV Project provides that if a Commission order satisfactory to HECC is not obtained by May 4, 2015, First Wind may, by written notice delivered within ninety (90) days of May 4, 2015, declare the PPA null and void. Similarly, if a satisfactory order is obtained by May 4, 2015 but is appealed, First Wind may declare the PPA null and void by written notice delivered within ninety (90) days of June 4, 2015.

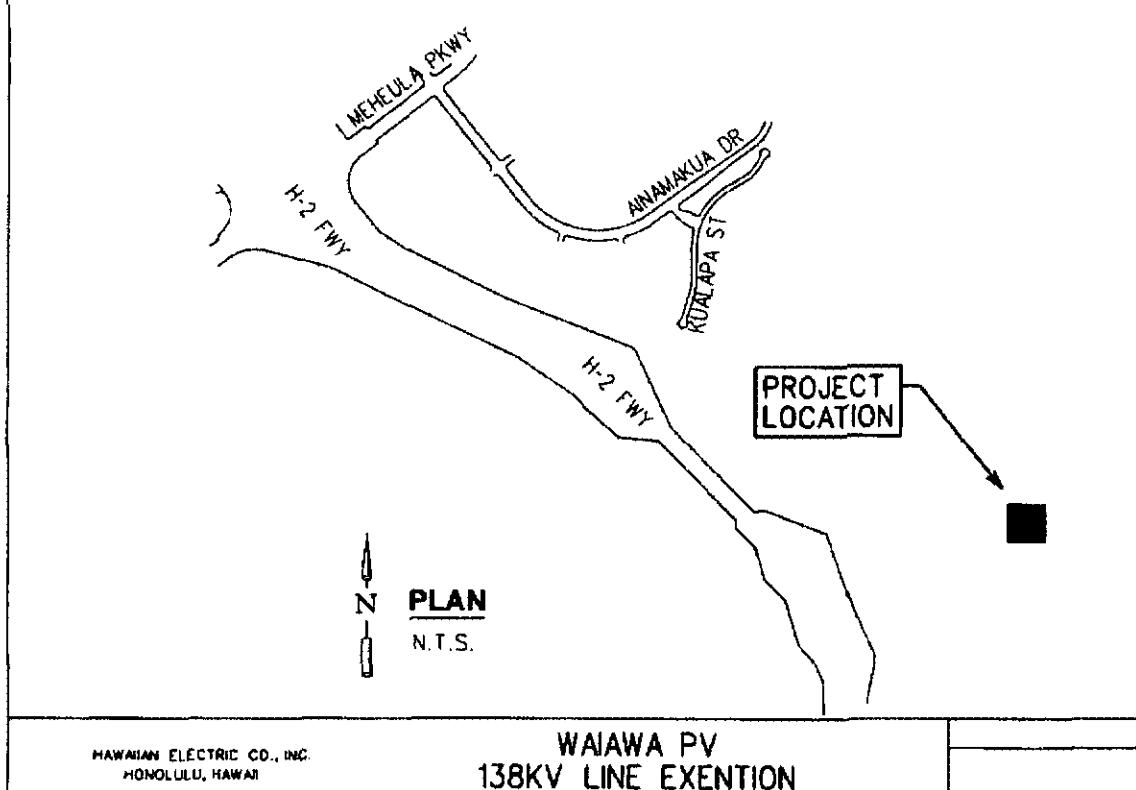
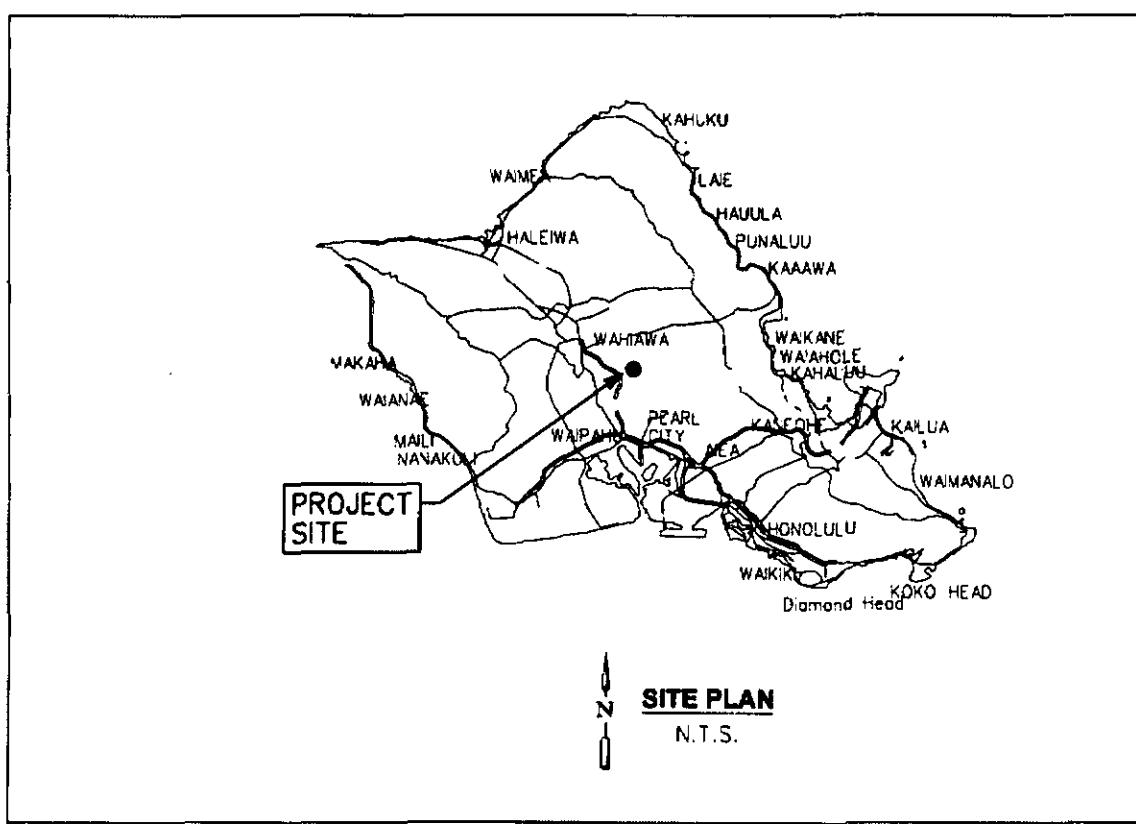
First Wind understands that the time between submission of the applications on December 4, 2014 and the requested decision date of May 4, 2015 is relatively short. Further, we are mindful that the resources of the Commission, the Office of Consumer Advocate and the utilities are stretched very thin. However, given the substantial consumer benefits that rate payers stand to gain if the Waiawa PV Project qualifies for the ITC, First Wind is hopeful that circumstances will allow for Commission approval within this time frame.

Thank you for your attention to this matter.

FIRST WIND HOLDINGS, LLC

By Kelly O'Brien

Kelly O'Brien
Vice President, Business Development - Hawaii



HAWAIIAN ELECTRIC CO., INC.
HONOLULU, HAWAII

WAIAWA PV
138KV LINE EXENTION

03-DEC-2014 15:42

scby

IP_PWP.dms15554\WAIAWA PV_080.dwg



Waiawa PV, LLC



Figure 1: view from project site (facing north) to 138kV Kahe-Wahiawa Line



Figure 2: view from project site (facing southwest) to 138kV Kahe- Wahiawa Line

138kV COST COMPARISON
OVERHEAD vs. UNDERGROUND ALTERNATIVE

| | Overhead Estimate | Underground Estimate |
|------------------------------|----------------------------|----------------------------|
| LABOR | \$ 14,404 | \$ 17,791 |
| MATERIALS | \$ 884,818 | \$ 1,604,471 |
| OUTSIDE SERVICES | \$ 831,698 | \$ 1,008,522 |
| ON-COST | \$ 211,330 | \$ 338,332 |
| TOTAL COST OF PROJECT | <u>\$ 1,942,250</u> | <u>\$ 2,969,116</u> |

Note: Removals are non-capital items that are not included in Hawaiian Electric's capital cost estimate

OVERHEAD ITEMS

The breakdown of materials and their estimated costs for each item costing \$1,000 or more is shown below:

Overhead Costs:

| <u>Qty.</u> | <u>Unit</u> | <u>Description</u> | <u>Cost Estimate</u> |
|-------------|-------------|---|----------------------|
| 1 | ea | Tangent, Self-Supporting Steel Pole | \$45,520 |
| 2 | ea. | Deadend, Self-Supporting Steel Pole | \$455,300 |
| 1 | ea. | Drilled Pier Foundation for Tangent, Self-Supporting Steel Pole | \$6,840 |
| 2 | ea. | Drilled Pier Foundation for Deadend, Self-Supporting Steel Pole | \$54,120 |
| 2,100 | ft | Conductor, 556.5 KCM, AAC, "Dahlia" | \$15,120 |
| 8,300 | ft | Fiber Optic Ground Wire (OPGW) | \$59,760 |
| 2 | ea. | Substation Terminations | \$2,800 |
| 1 | ea | Optic Splice Box | \$2,000 |

UNDERGROUND ITEMS

The breakdown of materials and their estimated costs for each item costing \$1,000 or more is shown below:

Overhead Costs:

| <u>Qty.</u> | <u>Unit</u> | <u>Description</u> | <u>Cost Estimate</u> |
|-------------|-------------|--|----------------------|
| 1 | ea. | Deadend, Tap, Self-Supporting Steel Pole | \$40,000 |
| 4 | ea. | Riser Deadend Self-Supporting Steel Pole | \$160,000 |

Underground Costs:

| <u>Qty.</u> | <u>Unit</u> | <u>Description</u> | <u>Cost Estimate</u> |
|-------------|-------------|-----------------------------------|----------------------|
| 2244 | ft. | 2000 kcmil CU XLPE cable (RED) | \$157,080 |
| 12 | ea. | Terminator | \$120,000 |
| 6 | ea. | Arresters | \$9,000 |
| 12 | ea. | 138kV Splices | \$120,000 |
| 2 | ea. | Vault Grounding System | \$5,000 |
| 2 | ea. | Structure Grounding System | \$8,593 |
| 28 | ea. | 138kV Cable Clamps | \$1,683 |
| 5 | ea. | Transmission Structure Foundation | \$100,000 |

EXHIBIT 12

PAGE 6 OF 64

Summary
Widows PV 138 KV OH vs US

| Year | Overhead | Underground | Revenue | Revenues | Revenues | Revenue |
|------|----------|-------------|-----------|-----------|-----------|----------|
| 1 | 55,819 | 127,470 | (71,651) | (155,892) | (155,892) | (71,651) |
| 2 | 100,481 | 256,373 | (71,651) | (155,892) | (155,892) | (71,651) |
| 3 | 93,066 | 243,690 | (150,625) | (145,659) | (145,659) | (86,224) |
| 4 | 86,224 | 231,883 | (150,625) | (140,973) | (140,973) | 79,913 |
| 5 | 74,095 | 210,641 | (136,546) | (132,358) | (132,358) | 68,731 |
| 6 | 66,642 | 192,179 | (128,391) | (120,721) | (120,721) | 63,789 |
| 7 | 49,747 | 175,143 | (141,148) | (105,418) | (105,418) | 54,413 |
| 8 | 35,766 | 149,667 | (109,244) | (113,070) | (113,070) | 40,423 |
| 9 | 35,083 | 183,630 | (124,547) | (120,973) | (120,973) | 59,083 |
| 10 | 54,413 | 175,143 | (141,148) | (105,418) | (105,418) | 49,747 |
| 11 | 175,143 | 149,667 | (109,244) | (113,070) | (113,070) | 68,731 |
| 12 | 166,642 | 192,179 | (128,391) | (120,973) | (120,973) | 63,789 |
| 13 | 45,083 | 158,153 | (113,070) | (113,070) | (113,070) | 201,089 |
| 14 | 40,423 | 149,667 | (109,244) | (109,244) | (109,244) | 192,179 |
| 15 | 31,112 | 132,705 | (101,593) | (101,593) | (101,593) | 26462 |
| 16 | 31,112 | 124,229 | (97,767) | (97,767) | (97,767) | 124,229 |
| 17 | 21,815 | 115,757 | (93,941) | (93,941) | (93,941) | 115,757 |
| 18 | 17,172 | 107,288 | (90,116) | (90,116) | (90,116) | 107,288 |
| 19 | 12,532 | 98,822 | (86,290) | (86,290) | (86,290) | 90,361 |
| 20 | 7,986 | 90,361 | (82,465) | (82,465) | (82,465) | 44,486 |
| 21 | 4,486 | 83,772 | (79,286) | (79,286) | (79,286) | 4,486 |
| 22 | 3,527 | 80,027 | (77,400) | (77,400) | (77,400) | 3,527 |
| 23 | 3,794 | 79,955 | (76,161) | (76,161) | (76,161) | 3,794 |
| 24 | 4,065 | 78,997 | (74,922) | (74,922) | (74,922) | 4,065 |
| 25 | 4,340 | 77,063 | (72,445) | (72,445) | (72,445) | 4,340 |
| 26 | 4,619 | 77,108 | (71,206) | (71,206) | (71,206) | 4,619 |
| 27 | 4,902 | 76,108 | (69,967) | (69,967) | (69,967) | 5,190 |
| 28 | 5,157 | 75,157 | (69,967) | (69,967) | (69,967) | 5,157 |
| 29 | 5,482 | 74,210 | (68,728) | (68,728) | (68,728) | 5,482 |
| 30 | 5,778 | 73,288 | (67,489) | (67,489) | (67,489) | 5,778 |
| 31 | 6,079 | 72,330 | (66,251) | (66,251) | (66,251) | 6,079 |
| 32 | 6,385 | 71,397 | (65,012) | (65,012) | (65,012) | 6,385 |
| 33 | 6,695 | 70,468 | (63,774) | (63,774) | (63,774) | 6,695 |
| 34 | 6,955 | 67,713 | (61,297) | (61,297) | (61,297) | 6,955 |
| 35 | 7,330 | 66,626 | (62,355) | (62,355) | (62,355) | 7,330 |
| 36 | 7,985 | 66,804 | (60,058) | (60,058) | (60,058) | 7,985 |
| 37 | 8,320 | 65,901 | (58,820) | (58,820) | (58,820) | 8,320 |
| 38 | 8,660 | 65,004 | (56,343) | (56,343) | (56,343) | 8,660 |
| 39 | 9,006 | 64,111 | (55,105) | (55,105) | (55,105) | 9,006 |
| 40 | 9,358 | 63,224 | (53,987) | (53,987) | (53,987) | 9,358 |
| 41 | 9,715 | 62,343 | (52,629) | (52,629) | (52,629) | 9,715 |
| 42 | 10,077 | 61,468 | (51,391) | (51,391) | (51,391) | 10,077 |
| 43 | 10,446 | 60,599 | (50,153) | (50,153) | (50,153) | 10,446 |
| 44 | 10,821 | 59,735 | (48,915) | (48,915) | (48,915) | 10,821 |
| 45 | 11,201 | 58,878 | (47,677) | (47,677) | (47,677) | 11,201 |
| 46 | 11,588 | 58,027 | (46,439) | (46,439) | (46,439) | 11,588 |
| 47 | 11,981 | 57,133 | (45,201) | (45,201) | (45,201) | 11,981 |
| 48 | 12,381 | 56,345 | (43,964) | (43,964) | (43,964) | 12,381 |
| 49 | 12,787 | 55,513 | (42,726) | (42,726) | (42,726) | 12,787 |
| 50 | 13,184 | 54,700 | (41,493) | (41,493) | (41,493) | 13,184 |
| 51 | 13,579 | 53,900 | (40,261) | (40,261) | (40,261) | 13,579 |
| 52 | 13,969 | 53,100 | (39,029) | (39,029) | (39,029) | 13,969 |
| 53 | 14,359 | 52,300 | (37,787) | (37,787) | (37,787) | 14,359 |
| 54 | 14,749 | 51,500 | (36,555) | (36,555) | (36,555) | 14,749 |
| 55 | 15,139 | 50,700 | (35,322) | (35,322) | (35,322) | 15,139 |
| 56 | 15,529 | 50,000 | (34,089) | (34,089) | (34,089) | 15,529 |
| 57 | 15,919 | 49,300 | (32,857) | (32,857) | (32,857) | 15,919 |
| 58 | 16,309 | 48,600 | (31,625) | (31,625) | (31,625) | 16,309 |
| 59 | 16,699 | 47,900 | (30,393) | (30,393) | (30,393) | 16,699 |
| 60 | 17,089 | 47,200 | (29,161) | (29,161) | (29,161) | 17,089 |

NPV at 3.00% 2,255,263 3,077,758 (2,219,907)

NPV at 3.10% 2,255,263 3,077,758 (2,219,907)

NPV at 3.19% 2,255,263 3,077,758 (2,219,907)

NPV at 3.20% 2,255,263 3,077,758 (2,219,907)

NPV at

12.00%

508,079

1,464,726

(131,843)

971,648

(971,648)

Walawa PV 138 kV OH vs UG
Revenue Requirements Model
Assumptions

Manual input

Cost of Capital Assumptions

| | Weight | Rate | Weighted Average | After-Tax Weighted Average | Weighted Average Revenue Requirement | Weighted Average Gross-up for Income Taxes |
|--------------------------------|---------|--------|------------------|----------------------------|--------------------------------------|--|
| Short Term Debt | 3.00% | 4.00% | 0.12% | 0.07% | 0.132% | 0.12% |
| Long Term Debt (Revenue Bonds) | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% | 0.00% |
| Long Term Debt (Taxable Debt) | 39.00% | 7.00% | 2.73% | 1.67% | 2.99% | 2.73% |
| Preferred Stock | 1.00% | 6.50% | 0.07% | 0.07% | 0.11% | 0.11% |
| Common Stock | 57.00% | 11.00% | 6.27% | 6.27% | 11.264% | 10.26% |
| | 100.00% | | 9.19% | 8.078% | 14.509% | 13.220% |

Tax Assumptions

| | Effective |
|-------------------------|---------------|
| Federal Income Tax Rate | 35.00% 32.89% |
| State Income Tax Rate | 6.40% 6.02% |
| | <u>38.91%</u> |

State Investment Tax Credit (ITC) 4.00%

| Public Service Company Tax | 5.885% |
|----------------------------|-----------------------|
| PUC Fee | 0.500% |
| Franchise Tax | 2.500% |
| Composite Revenue Tax Rate | <u>8.885%</u> 1.09751 |

Project Assumptions

Source: Arienne Dela Cruz, email dated 11/13/14

| <u>Overhead</u> | | <u>Underground</u> | |
|--|-------------------|--|----------------------|
| <u>Initial Capital</u> | In Service Yr. | <u>Initial Capital</u> | In Service Yr. |
| UG Conduit | \$ - | 1 UG Conduit | \$ 843,730 1 |
| UG Conductors and Devices | \$ - | 1 UG Conductors and Devices | \$ 896,594 1 |
| Poles & Fixtures | \$ 1,876,645 | 1 Poles & Fixtures | \$ 1,126,792 1 |
| OH Conductors and Devices | \$ 265,605 | 1 OH Conductors and Devices | \$ - 1 |
| DIST: Poles, Towers, and Fixtures | \$ - | 1 DIST: Poles, Towers, and Fixtures | \$ - 1 |
| DIST: OH Conductors and Devices | \$ - | 1 DIST: OH Conductors and Devices | \$ - 1 |
| | 1,942,250 | | 2,969,116 |
| <u>Replacement Capital</u> Ann. Escalation | | <u>Replacement Capital</u> Ann. Escalation | |
| UG Conduit | 2.0% \$ - | 61 UG Conduit | 2.0% \$ 3,158,335 61 |
| UG Conductors and Devices | 2.0% \$ - | 61 UG Conductors and D. | 2.0% \$ 3,007,281 61 |
| Poles & Fixtures | 2.0% \$ 4,603,094 | 51 Poles & Fixtures | 2.0% \$ 3,093,517 51 |
| OH Conductors and Devices | 2.0% \$ 729,197 | 51 OH Conductors and D. | 2.0% \$ - 51 |
| DIST: UG Conduit | 2.0% \$ - | 51 DIST: UG Conduit | 2.0% \$ - 51 |
| DIST: OH Conductors and Devices | 2.0% \$ - | 51 DIST: OH Conductors | 2.0% \$ - 51 |
| Land | \$ - | 1 Land | \$ - 1 |
| CIAC | 51 \$ (1,942,250) | 1 CIAC | 51 \$ (1,942,250) |
| <u>O&M</u> \$/mile | | <u>O&M</u> \$/mile | |
| O&M Inputs | \$ 15,359 0.39 | O&M Inputs | \$ 15,511 0.39 |
| O&M | 2.0% \$ 5,917 | O&M | 2.0% \$ 5,975 |

| <u>Initial Capital</u> | | | | <u>Replacement Capital</u> | | | |
|---------------------------------|----------------------------------|-----------------------------|----------------------------------|----------------------------|--|--|----|
| | <u>UG Conductors and Devices</u> | <u>Poles & Fixtures</u> | <u>OH Conductors and Devices</u> | | <u>DIST: Poles, Towers, and Fixtures</u> | <u>DIST: OH Conductors and Devices</u> | |
| Depreciation - Overhead | | | | | | | |
| UG Conduit | 60 | 60 | 50 | 50 | 50 | 60 | 50 |
| Expected Useful Life | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| MACRS Tax Life ("Tax Life") * | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Tax Class Life ("Class Life") + | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

| <u>Initial Capital</u> | | | | <u>Replacement Capital</u> | | | |
|-----------------------------------|----------------------------------|-----------------------------|----------------------------------|----------------------------|--|--|----|
| | <u>UG Conductors and Devices</u> | <u>Poles & Fixtures</u> | <u>OH Conductors and Devices</u> | | <u>DIST: Poles, Towers, and Fixtures</u> | <u>DIST: OH Conductors and Devices</u> | |
| Depreciation - Underground | | | | | | | |
| UG Conduit | 60 | 60 | 50 | 50 | 50 | 60 | 50 |
| Expected Useful Life | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| MACRS Tax Life ("Tax Life") * | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Tax Class Life ("Class Life") + | 30 | 30 | 30 | 30 | 30 | 30 | 30 |

* half-year convention, table A-1

+ half-year convention, table A-8

| Walawa PV 138 kV OH vs UG | | | | | | | | | | | | | | | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| Tax Depreciation Factors | | | | | | | | | | | | | | | | | | | | |
| Manual input | Years | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
| Tax Depreciation Rates (Straight Line) | | | | | | | | | | | | | | | | | | | | |
| - | | | | | | | | | | | | | | | | | | | | |
| 3 | 16.670% | 33.330% | 33.330% | 16.670% | | | | | | | | | | | | | | | | |
| 5 | 10.000% | 20.000% | 20.000% | 20.000% | 20.000% | 10.000% | | | | | | | | | | | | | | |
| 7 | 7.140% | 14.290% | 14.290% | 14.280% | 14.290% | 14.280% | 14.290% | 7.140% | | | | | | | | | | | | |
| 10 | 5.000% | 10.000% | 10.000% | 10.000% | 10.000% | 10.000% | 10.000% | 10.000% | 10.000% | 10.000% | 5.000% | | | | | | | | | |
| 15 | 3.330% | 6.670% | 6.670% | 6.670% | 6.670% | 6.670% | 6.660% | 6.670% | 6.660% | 6.670% | 6.660% | 6.670% | 6.660% | 6.670% | 3.330% | | | | | |
| 20 | 2.500% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | 5.000% | | |
| 25 | 2.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | | |
| 28 | 1.786% | 3.571% | 3.571% | 3.571% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | | |
| 30 | 1.667% | 3.333% | 3.333% | 3.333% | 3.333% | 3.333% | 3.333% | 3.333% | 3.333% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | |
| 35 | 1.429% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | |
| 50 | 1.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | |

Source: IRS Publication 946, Table A-8

| Tax Depreciation Rates (MACRS) | | | | | | | | | | | | | | | | | | | |
|--------------------------------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--|
| - | | | | | | | | | | | | | | | | | | | |
| 3 | 33.330% | 44.450% | 14.810% | 7.410% | | | | | | | | | | | | | | | |
| 5 | 20.000% | 32.000% | 19.200% | 11.520% | 11.520% | 5.760% | | | | | | | | | | | | | |
| 7 | 14.290% | 24.490% | 17.490% | 12.490% | 8.930% | 8.920% | 8.930% | 4.460% | | | | | | | | | | | |
| 10 | 10.000% | 18.000% | 14.400% | 11.520% | 9.220% | 7.370% | 6.550% | 6.550% | 6.560% | 6.550% | 3.280% | | | | | | | | |
| 15 | 5.000% | 9.500% | 8.550% | 7.700% | 6.930% | 6.230% | 5.900% | 5.900% | 5.910% | 5.900% | 5.910% | 5.900% | 5.910% | 5.900% | 5.910% | 2.950% | | | |
| 20 | 3.750% | 7.219% | 6.677% | 6.177% | 5.713% | 5.285% | 4.888% | 4.522% | 4.462% | 4.461% | 4.462% | 4.461% | 4.462% | 4.461% | 4.462% | 4.461% | 4.462% | 4.461% | |

Source: IRS Publication 946, Table A-1

| Walawa PV 138 kV OH vs UG | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|----|
| Tax Depreciation Factors | | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| Manual input | Years | | | | | | | | | | | | | | | | | | | | |
| | Tax Depreciation Rate: | | | | | | | | | | | | | | | | | | | | |
| | - | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | |
| | 20 | 5.000% | 2.500% | | | | | | | | | | | | | | | | | | |
| | 25 | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | 4.000% | | | | | | | | | | | | | |
| | 28 | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.572% | 3.571% | 3.571% | 1.786% | | | | | | | | | |
| | 30 | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 1.667% | | | | | | | | |
| | 35 | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 2.857% | 1.429% | | | | |
| | 50 | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | | |

Source: IRS Publication 946, T.

| Tax Depreciation Factors | | | | | | | | | | | | | | | | | | | | | |
|--------------------------|----|--------|--------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Tax Depreciation Rate: | | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 |
| | - | | | | | | | | | | | | | | | | | | | | |
| | 3 | | | | | | | | | | | | | | | | | | | | |
| | 5 | | | | | | | | | | | | | | | | | | | | |
| | 7 | | | | | | | | | | | | | | | | | | | | |
| | 10 | | | | | | | | | | | | | | | | | | | | |
| | 15 | | | | | | | | | | | | | | | | | | | | |
| | 20 | 4.461% | 2.231% | | | | | | | | | | | | | | | | | | |

Source: IRS Publication 946, T.

| Walswa PV 138 KV OH vs UG Tax Depreciation Factors | | | | | | | | | | |
|---|-------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Manual input | Years | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 |
| | | | | | | | | | | |
| Tax Depreciation Rate: | | | | | | | | | | |
| | | | | | | | | | | |
| | 3 | | | | | | | | | 100.000% |
| | 5 | | | | | | | | | 100.000% |
| | 7 | | | | | | | | | 100.000% |
| | 10 | | | | | | | | | 100.000% |
| | 15 | | | | | | | | | 100.000% |
| | 20 | | | | | | | | | 100.000% |
| | 25 | | | | | | | | | 100.000% |
| | 28 | | | | | | | | | 100.000% |
| | 30 | | | | | | | | | 100.000% |
| | 35 | | | | | | | | | 100.000% |
| | 50 | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% | 1.000% |
| Tax Depreciation Rate: | | | | | | | | | | |
| | | | | | | | | | | |
| | 3 | | | | | | | | | 100.000% |
| | 5 | | | | | | | | | 100.000% |
| | 7 | | | | | | | | | 100.000% |
| | 10 | | | | | | | | | 100.000% |
| | 15 | | | | | | | | | 100.000% |
| | 20 | | | | | | | | | 100.000% |
| | | | | | | | | | | |

Source: IRS Publication 946, T;

Source: IRS Publication 946, T;

| Revenue Requirements Model - Calculations | | | | | | | | | | | | | | | | | | | | | | |
|---|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | |
| Manual input | | | | | | | | | | | | | | | | | | | | | | |
| Deferred Taxes - Federal | | (538,896) | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | | |
| Deferred Taxes - State | | (118,827) | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | | |
| Change in deferred taxes | | (755,725) | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | | |
| Accumulated deferred tax asset | | (755,725) | (240,611) | (726,496) | (716,382) | (695,267) | (680,153) | (665,038) | (649,924) | (634,806) | (619,695) | (604,580) | (589,466) | (574,351) | (569,237) | (544,122) | (529,008) | (513,893) | (498,779) | (483,664) | (468,540) | |
| Deferred Tax Classification - Decrement | | | | | | | | | | | | | | | | | | | | | | |
| Book Accumulated Depreciation | | | 38,636 | 79,278 | 118,913 | 156,551 | 196,189 | 237,827 | 277,454 | 317,102 | 356,740 | 396,378 | 436,018 | 475,653 | 515,291 | 554,029 | 594,568 | 634,204 | 673,842 | 713,480 | 753,117 | |
| Tax Accumulated Depreciation | | 72,834 | 213,045 | 342,720 | 482,702 | 573,663 | 676,311 | 771,248 | 850,017 | 945,740 | 1,032,384 | 1,119,047 | 1,205,691 | 1,292,354 | 1,376,998 | 1,465,661 | 1,552,304 | 1,638,958 | 1,725,611 | 1,812,275 | 1,899,018 | |
| Book/Var Acc Depr Difference | | (72,834) | (173,408) | (263,454) | (343,389) | (415,112) | (478,122) | (533,422) | (581,812) | (628,638) | (675,644) | (722,669) | (789,675) | (816,701) | (865,707) | (910,732) | (957,738) | (1,004,784) | (1,051,170) | (1,098,795) | (1,145,801) | |
| Deferred ITC | | 77,690 | 75,104 | 74,519 | 72,933 | 71,348 | 69,762 | 68,177 | 66,591 | 65,006 | 63,420 | 61,835 | 60,249 | 58,664 | 57,078 | 55,493 | 53,907 | 52,321 | 50,736 | 49,151 | 47,565 | |
| Net Deferred Tax Asset (Liability) | | 1,689 | (37,850) | (73,514) | (105,369) | (133,750) | (158,692) | (161,026) | (200,393) | (219,308) | (238,219) | (257,129) | (276,036) | (294,950) | (313,857) | (332,772) | (351,679) | (370,593) | (389,500) | (408,414) | (427,321) | |
| Deferred Tax Base | | (4,856) | 102,159 | 81,832 | 81,821 | 72,901 | 64,596 | 56,685 | 49,776 | 48,611 | 48,592 | 48,611 | 48,592 | 48,611 | 48,592 | 48,611 | 48,592 | 48,611 | 48,592 | 48,611 | 48,592 | |
| Deferred Taxes - Federal | | (1,597) | 33,805 | 20,142 | 26,948 | 23,963 | 21,249 | 18,712 | 16,374 | 15,990 | 15,984 | 15,990 | 15,984 | 15,990 | 15,984 | 15,990 | 15,984 | 15,984 | 15,984 | 15,984 | 15,984 | |
| Deferred Taxes - State excluding credit | | (202) | 6,145 | 5,312 | 4,826 | 4,385 | 3,865 | 3,422 | 2,994 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | 2,924 | |
| Change in Deferred Taxes | | (1,689) | 38,750 | 35,054 | 31,975 | 28,369 | 25,134 | 22,134 | 19,368 | 18,914 | 18,907 | 18,914 | 18,907 | 18,907 | 18,907 | 18,907 | 18,907 | 18,907 | 18,907 | 18,907 | 18,907 | |
| Accumulated Deferred Taxes | | (1,689) | 37,860 | 73,514 | 105,369 | 133,750 | 158,692 | 161,026 | 200,393 | 219,308 | 238,219 | 257,129 | 276,036 | 294,950 | 313,857 | 332,772 | 351,679 | 370,593 | 389,500 | 408,414 | 427,321 | |
| Change in Deferred ITC | | 77,690 | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | |
| Change in Deferred Tax Asset (Liability) | | 77,690 | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | |
| Capitalized Interest (Rate Basis) | | | | | | | | | | | | | | | | | | | | | | |
| Land | | | | | | | | | | | | | | | | | | | | | | |
| Gross Plant | | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | | |
| Accumulated Depreciation | | - | 39,636 | 79,278 | 118,913 | 156,551 | 196,189 | 237,827 | 277,454 | 317,102 | 356,740 | 396,378 | 436,018 | 475,653 | 515,291 | 554,029 | 594,568 | 634,204 | 673,842 | 713,480 | 753,117 | |
| CIAC | | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | |
| Accumulated CIAC Amortization | | - | 33,845 | 77,690 | 115,338 | 153,380 | 194,276 | 233,070 | 271,919 | 310,780 | 349,605 | 388,440 | 427,205 | 466,140 | 504,085 | 54,2,830 | 58,075 | 62,1,761 | 66,365 | 70,210 | 73,005 | |
| Accumulated Deferred Taxes | | (755,714) | (702,720) | (651,262) | (602,902) | (561,509) | (521,263) | (484,022) | (448,320) | (415,501) | (381,480) | (347,451) | (313,420) | (281,391) | (251,359) | (221,329) | (191,299) | (161,269) | (131,239) | (101,209) | (75,250) | |
| Accumulated Deferred ITC | | - | 77,690 | 76,704 | 75,293 | 71,348 | 69,762 | 68,177 | 66,591 | 65,006 | 63,420 | 61,835 | 60,249 | 58,664 | 57,078 | 55,493 | 53,907 | 52,322 | 50,736 | 49,151 | 47,565 | |
| Ending Net Investment | | - | 670,924 | 625,952 | 573,877 | 529,681 | 486,390 | 447,355 | 411,079 | 377,359 | 344,153 | 310,925 | 277,680 | 244,460 | 211,224 | 177,995 | 144,758 | 111,530 | 78,294 | 43,058 | 21,389 | |
| Average Net Investment | | 319,962 | 652,859 | 600,865 | 562,778 | 508,335 | 467,362 | 429,307 | 384,274 | 340,274 | 300,771 | 271,529 | 249,307 | 214,609 | 181,377 | 128,145 | 94,912 | 61,000 | 28,448 | 8,785 | | |
| Average Financing: | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | 3.00% | 10,198 | 19,587 | 18,026 | 18,583 | 19,250 | 14,018 | 12,879 | 11,827 | 10,823 | 9,828 | 8,829 | 7,832 | 6,835 | 5,838 | 4,841 | 3,844 | 2,847 | 1,850 | 653 | (144) | |
| Long Term Debt (Revenue Bonds) | 0.00% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Taxable Debt | 30.00% | 132,585 | 254,627 | 234,337 | 215,584 | 186,253 | 162,322 | 137,430 | 135,751 | 140,701 | 127,740 | 114,700 | 101,619 | 88,856 | 75,998 | 62,937 | 49,976 | 37,016 | 24,065 | 11,095 | (1,860) | |
| Preferred Stock | 1.00% | - | 3,400 | 6,529 | 8,009 | 5,328 | 5,080 | 4,673 | 4,293 | 3,942 | 3,608 | 3,275 | 2,843 | 2,611 | 2,278 | 1,946 | 1,614 | 1,284 | 817 | 484 | (448) | |
| Common Equity | 57.00% | 193,778 | 372,147 | 342,493 | 315,084 | 289,751 | 266,340 | 244,705 | 224,713 | 205,840 | 186,697 | 167,755 | 148,812 | 129,875 | 110,927 | 91,045 | 73,042 | 54,100 | 35,158 | 16,215 | (3,777) | |
| Total Financing | | 339,962 | 652,859 | 600,865 | 552,778 | 508,335 | 467,362 | 429,307 | 384,274 | 340,274 | 300,771 | 271,529 | 249,307 | 214,609 | 181,377 | 128,145 | 94,912 | 61,000 | 28,448 | 8,785 | | |
| Return on Investment: | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | 4.00% | - | 408 | 783 | 721 | 643 | 510 | 561 | 515 | 473 | 433 | 393 | 353 | 313 | 273 | 234 | 194 | 154 | 114 | 74 | 34 | (8) |
| Long Term Debt (Revenue Bonds) | 0.00% | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Taxable Debt | 7.00% | - | 9,281 | 17,824 | 16,404 | 15,081 | 13,978 | 12,758 | 11,729 | 10,763 | 9,849 | 9,942 | 8,035 | 7,177 | 6,279 | 5,313 | 4,405 | 3,498 | 2,591 | 1,684 | 777 | (131) |
| Total Interest Expense | | - | 8,889 | 18,801 | 17,125 | 15,754 | 14,488 | 13,317 | 12,235 | 11,236 | 10,289 | 9,355 | 8,368 | 7,441 | 6,502 | 5,585 | 4,690 | 3,832 | 2,705 | 1,758 | 811 | (136) |
| Preferred Dividends | 6.50% | - | 221 | 424 | 381 | 359 | 330 | 304 | 279 | 256 | 235 | 213 | 191 | 170 | 148 | 128 | 105 | 83 | 61 | 40 | 18 | (3) |
| Interest Expense | | - | 9,669 | 15,607 | 17,125 | 15,754 | 14,488 | 13,317 | 12,235 | 11,236 | 10,289 | 9,355 | 8,368 | 7,441 | 6,502 | 5,585 | 4,690 | 3,832 | 2,705 | 1,758 | 811 | (136) |
| Income Before Income Taxes | | 35,254 | 66,116 | 60,724 | 55,737 | 51,128 | 46,869 | 42,933 | 39,296 | 35,826 | 32,380 | 28,934 | 25,488 | 22,041 | 18,595 | 15,149 | 11,703 | 8,257 | 5,646 | 11,418 | 7,194 | |
| Income Taxes - Federal | | 11,507 | 22,271 | 20,498 | 18,856 | 17,340 | 15,939 | 14,644 | 13,448 | 12,306 | 11,173 | 10,039 | 8,906 | 7,777 | 6,638 | 5,505 | 4,371 | 3,238 | 2,104 | 970 | (183) | |
| Income Taxes - State | | 2,121 | 4,072 | 3,748 | 3,448 | 3,171 | 2,915 | 2,678 | 2,459 | 2,250 | 2,043 | 1,836 | 1,628 | 1,421 | 1,214 | 1,007 | 799 | 592 | 385 | 177 | (20) | |
| Total State ITC | | - | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | |
| Total Income Taxes | | 13,717 | 24,758 | 22,650 | 20,719 | 18,925 | 17,208 | 15,737 | 14,321 | 12,971 | 11,630 | 10,289 | 8,949 | 6,267 | 3,545 | 2,744 | 2,003 | 1,338 | 1,526 | 1,113 | 702 | |
| Preferred Dividends | | 221 | 424 | 381 | 359 | 330 | 304 | 279 | 256 | 235 | 213 | 191 | 170 | 148 | 128 | 105 | 83 | 61 | 40 | 18 | (3) | |

| Walens PV 138 kW OH vs UG | | | | | | | | | | | | | | | | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Revenue Requirements Model - Calculated | | | | | | | | | | | | | | | | | | | | | |
| Manual input | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| O&M | 1.49 | 1.52 | 1.55 | 1.58 | 1.61 | 1.64 | 1.67 | 1.71 | 1.74 | 1.78 | 1.81 | 1.85 | 1.88 | 1.92 | 1.96 | 2.00 | 2.04 | 2.08 | 2.12 | 2.16 | 2.21 |
| Escalation Rate | 8,792 | 8,968 | 9,147 | 9,330 | 9,517 | 9,707 | 9,901 | 10,099 | 10,301 | 10,507 | 10,717 | 10,932 | 11,150 | 11,373 | 11,601 | 11,833 | 12,060 | 12,311 | 12,557 | 12,808 | 13,054 |
| Plant Asset Depreciation | | | | | | | | | | | | | | | | | | | | | |
| Book Depreciation | | | | | | | | | | | | | | | | | | | | | |
| Book Depreciation Rates - UG Conduit | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | |
| Book Depreciation Rates - UG Cond & C | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | |
| Book Depreciation Rates - Poles & Fix. | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| Book Depreciation Rates - OH Cond & C | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| Book Depreciation Rates - DIST' Poles | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| Book Depreciation Rates - DIST' OH Cc | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| Book Depreciation Rates - UG Conduit | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Book Depreciation Rates - UG Cond. & C | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Book Depreciation Rates - Poles & Fix. | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Book Depreciation Rates - OH Cond & C | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Book Depreciation Rates - DIST' Poles | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Book Depreciation Rates - DIST' OH Cc | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Depreciation Expenses | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | |
| Accumulated Depreciation | 792,755 | 832,293 | 872,031 | 911,668 | 951,306 | 990,944 | 1,030,582 | 1,070,219 | 1,109,857 | 1,149,495 | 1,189,133 | 1,228,770 | 1,268,408 | 1,308,046 | 1,347,684 | 1,387,321 | 1,426,959 | 1,466,597 | 1,506,235 | 1,545,872 | 1,585,510 |
| Tax Depreciation | | | | | | | | | | | | | | | | | | | | | |
| Tax Depreciation Rates (SL) - UG Cond | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - UG Cond | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - Poles & F | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - OH Cond | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - DIST' Poles | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - DIST' OH Cc | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | 3.334% | 3.333% | |
| Tax Depreciation Rates (SL) - UG Cond | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (SL) - UG Cond | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (SL) - Poles & F | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (SL) - OH Cond | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (SL) - DIST' Poles | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (SL) - DIST' OH Cc | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (MACRS) - UG | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | |
| Tax Depreciation Rates (MACRS) - UG | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (MACRS) - Poles & F | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | |
| Tax Depreciation Rates (MACRS) - OH | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | |
| Tax Depreciation Rates (MACRS) - OH | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Tax Depreciation Rates (MACRS) - DIST' | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | 2.231% | |
| Tax Depreciation Rates (MACRS) - DIST' | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | 0.000% | |
| Non-RB Financial Tax Basis (MACRS) | 43,332 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Tax Depreciation | 43,332 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Accumulated Tax Depreciation | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | |
| State Investment Tax Credit (ITC) | | | | | | | | | | | | | | | | | | | | | |
| Book | | | | | | | | | | | | | | | | | | | | | |
| State ITC Amortization Rate - UG Condu | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | |
| State ITC Amortization Rate - UG Condu | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | 1.695% | |
| State ITC Amortization Rate - Poles & F | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| State ITC Amortization Rate - OH Condu | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| State ITC Amortization Rate - OH Condu | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| State ITC Amortization Rate - DIST' Poles | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | 2.041% | |
| State ITC Amortization Rate - DIST' OH Cc | 2.041% | 2.041% | | | | | | | | | | | | | | | | | | | |

| Revenue Requirements Model - Calculated | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----|
| Manual Input | | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 |
| Deferred Taxes - Federal | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | |
| Deferred Taxes - State | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | |
| Change in deferred taxes | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | |
| Accumulated deferred tax asset | (454,355) | (438,321) | (423,206) | (408,092) | (392,977) | (377,863) | (362,748) | (347,634) | (332,519) | (317,405) | (302,290) | (287,176) | (272,061) | (256,947) | (241,832) | (226,718) | (211,603) | (196,489) | (181,374) | (166,260) | (151,145) | |
| Deferred Tax Calculation - Depreciation | | | | | | | | | | | | | | | | | | | | | | |
| Book Accumulated Depreciation | 792,755 | 832,393 | 872,031 | 911,668 | 951,306 | 990,944 | 1,030,582 | 1,070,219 | 1,109,857 | 1,149,495 | 1,189,133 | 1,228,770 | 1,268,408 | 1,308,046 | 1,347,684 | 1,387,321 | 1,426,959 | 1,466,597 | 1,506,235 | 1,545,872 | 1,585,510 | |
| Tax Accumulated Depreciation | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | |
| Book/Tax Accr Dep Difference | (1,149,495) | (1,09,857) | (1,07,219) | (1,03,052) | (990,944) | (951,306) | (911,668) | (872,031) | (823,393) | (792,755) | (753,17) | (713,480) | (673,842) | (634,204) | (594,566) | (554,929) | (515,291) | (475,653) | (436,051) | (396,378) | (356,742) | |
| Deferred ITC | 45,980 | 44,394 | 42,809 | 41,223 | 39,638 | 38,052 | 36,487 | 34,881 | 33,296 | 31,710 | 30,125 | 28,539 | 26,954 | 25,368 | 23,783 | 22,197 | 20,612 | 19,026 | 17,441 | 15,855 | 14,270 | |
| Net Deferred Tax Asset (Liability) | (429,375) | (414,569) | (399,763) | (384,957) | (370,151) | (355,345) | (340,539) | (325,733) | (310,927) | (296,121) | (281,315) | (266,509) | (251,703) | (236,897) | (222,091) | (207,285) | (192,479) | (177,673) | (162,868) | (148,060) | (133,254) | |
| Deferred Tax Base | | | | | | | | | | | | | | | | | | | | | | |
| Deferred Taxes - Federal | 5,279 | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | (36,052) | |
| Deferred Taxes - State | 1,737 | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | |
| Change in Deferred Taxes | 2,054 | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | |
| Accumulated Deferred Taxes | 429,375 | 414,569 | 399,763 | 384,957 | 370,151 | 355,345 | 340,539 | 325,733 | 310,927 | 296,121 | 281,315 | 266,509 | 251,703 | 236,897 | 222,091 | 207,285 | 192,479 | 177,673 | 162,868 | 148,060 | 133,254 | |
| check | | | | | | | | | | | | | | | | | | | | | | |
| Change in Deferred ITC | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | |
| Rate Basis and Financing | | | | | | | | | | | | | | | | | | | | | | |
| Investment (Return Basis) | | | | | | | | | | | | | | | | | | | | | | |
| Land | Gross Plant | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | |
| Accumulated Depreciation | 792,755 | 832,393 | 872,031 | 911,668 | 951,306 | 990,944 | 1,030,582 | 1,070,219 | 1,109,857 | 1,149,495 | 1,189,133 | 1,228,770 | 1,268,408 | 1,308,046 | 1,347,684 | 1,387,321 | 1,426,959 | 1,466,597 | 1,506,235 | 1,545,872 | 1,585,510 | |
| CAIC | 1,942,250 | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | |
| Accumulated CAIC Amortization | 776,900 | 815,745 | 854,590 | 893,435 | 932,280 | 971,125 | 1,009,970 | 1,048,815 | 1,087,660 | 1,126,505 | 1,165,350 | 1,204,195 | 1,243,040 | 1,281,665 | 1,320,330 | 1,359,575 | 1,398,420 | 1,437,265 | 1,476,110 | 1,514,955 | 1,553,800 | |
| Accumulated Deferred Taxes | (24,060) | (23,751) | (23,443) | (23,134) | (22,826) | (22,518) | (22,209) | (21,901) | (21,592) | (21,284) | (20,975) | (20,667) | (20,358) | (20,050) | (19,741) | (19,433) | (19,124) | (18,816) | (18,508) | (18,199) | (17,891) | |
| Accumulated Deferred ITC | 45,980 | 44,394 | 42,809 | 41,223 | 39,638 | 38,052 | 36,487 | 34,881 | 33,296 | 31,710 | 30,125 | 28,539 | 26,954 | 25,368 | 23,783 | 22,197 | 20,612 | 19,026 | 17,441 | 15,855 | 14,270 | |
| Ending Net Investment | (37,775) | (37,291) | (36,806) | (36,322) | (35,838) | (35,354) | (34,869) | (34,385) | (33,901) | (33,416) | (32,932) | (32,448) | (31,964) | (31,479) | (30,985) | (30,511) | (30,026) | (29,542) | (29,058) | (28,673) | (28,186) | |
| Average Net Investment | (29,587) | (37,533) | (37,049) | (36,564) | (36,080) | (35,586) | (35,111) | (34,627) | (34,143) | (33,659) | (33,174) | (32,690) | (32,206) | (31,721) | (31,237) | (30,753) | (30,268) | (29,784) | (29,300) | (28,816) | (28,333) | |
| Average Floating | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | (868) | (1,125) | (1,111) | (1,097) | (1,082) | (1,068) | (1,053) | (1,039) | (1,024) | (1,010) | (995) | (981) | (968) | (953) | (937) | (923) | (908) | (894) | (879) | (864) | (850) | |
| Long Term Debt (Revenue Bonds) | | | | | | | | | | | | | | | | | | | | | | |
| Taxable Debt | (11,530) | (14,638) | (14,449) | (14,260) | (14,071) | (13,882) | (13,693) | (13,505) | (13,316) | (13,127) | (12,938) | (12,749) | (12,560) | (12,371) | (12,182) | (11,994) | (11,805) | (11,616) | (11,427) | (11,238) | (11,045) | |
| Preferred Stock | (296) | (375) | (370) | (366) | (361) | (356) | (351) | (346) | (341) | (337) | (327) | (317) | (312) | (308) | (303) | (298) | (293) | (288) | (283) | (278) | (273) | |
| Common Equity | (15,805) | (17,384) | (21,118) | (20,842) | (20,566) | (20,290) | (20,014) | (19,737) | (19,461) | (19,185) | (18,909) | (18,633) | (18,357) | (18,081) | (17,805) | (17,523) | (16,977) | (16,701) | (16,425) | (16,149) | (15,886) | |
| Total Capital Financing | (29,587) | (37,533) | (37,049) | (36,564) | (36,080) | (35,586) | (35,111) | (34,627) | (34,143) | (33,659) | (33,174) | (32,690) | (32,206) | (31,721) | (31,237) | (30,753) | (30,268) | (29,784) | (29,300) | (28,816) | (28,333) | |
| Return on Investment | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | (36) | (45) | (44) | (44) | (43) | (43) | (42) | (42) | (41) | (40) | (40) | (39) | (39) | (39) | (38) | (37) | (37) | (36) | (35) | (35) | (34) | |
| Long Term Debt (Revenue Bonds) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | |
| Taxable Debt | (808) | (1,025) | (1,011) | (996) | (985) | (972) | (959) | (945) | (932) | (919) | (906) | (892) | (879) | (866) | (853) | (840) | (826) | (813) | (800) | (787) | (773) | |
| Total Interest Expense | (843) | (1,070) | (1,056) | (1,042) | (1,028) | (1,014) | (1,001) | (987) | (973) | (959) | (945) | (932) | (918) | (904) | (890) | (878) | (863) | (853) | (843) | (831) | (821) | |
| Preferred Dividends | (19) | (24) | (24) | (23) | (23) | (23) | (22) | (22) | (21) | (21) | (21) | (21) | (21) | (21) | (20) | (20) | (20) | (19) | (19) | (19) | (18) | |
| Net Income on Common | (1,855) | (2,353) | (2,232) | (2,293) | (2,262) | (2,232) | (2,201) | (2,171) | (2,141) | (2,110) | (2,060) | (2,019) | (1,978) | (1,939) | (1,900) | (1,867) | (1,837) | (1,807) | (1,776) | (1,746) | (1,716) | |
| Income Taxes | | | | | | | | | | | | | | | | | | | | | | |
| Income Before Pref Dividends | (1,874) | (2,378) | (2,347) | (2,316) | (2,286) | (2,255) | (2,224) | (2,194) | (2,163) | (2,132) | (2,102) | (2,071) | (2,040) | (2,010) | (1,979) | (1,948) | (1,918) | (1,887) | (1,856) | (1,825) | (1,795) | |
| Income Before Taxes (Including ITC) | (3,060) | (3,832) | (3,843) | (3,792) | (3,741) | (3,691) | (3,641) | (3,591) | (3,541) | (3,490) | (3,440) | (3,390) | (3,340) | (3,290) | (3,180) | (3,090) | (3,039) | (3,039) | (3,039) | (3,039) | (2,988) | |
| Investment Tax Credit | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | |
| Income Before Taxes (excluding ITC) | (4,654) | (5,478) | (5,377) | (5,277) | (5,176) | (5,077) | (5,027) | (4,976) | (4,926) | (4,876) | (4,826) | (4,776) | (4,726) | (4,676) | (4,626) | (4,576) | (4,526) | (4,476) | (4,426) | (4,374) | (4,324) | |
| Federal Income Tax | (1,020) | (1,280) | (1,247) | (1,231) | (1,214) | (1,198) | (1,181) | (1,165) | (1,148) | (1,132) | (1,102) | (1,072) | (1,042) | (1,012) | (987) | (959) | (932) | (918) | (893) | (863) | (833) | |
| State Income Tax | (1,056) | (1,182) | (1,147) | (1,114) | (1,093) | (1,051) | (1,021) | (9,917) | (9,707) | (9,501) | (10,099) | (10,301) | (10,507) | (10,717) | (10,922) | (11,133) | (11,343) | (11,553) | (11,763) | (11,973) | (12,183) | |
| Depreciation Expense | 39,636 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | | |
| CAIC Amortization | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | | |
| Oil & Gas | 8,792 | 8,968 | 9,147 | 9,330 | 9,517 | 9,707 | 9,901 | 10,099 | 10,301 | 10,507 | 10,717 | 10, | | | | | | | | | | |

| Revenue Requirements Model - Calculated | | | | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--------|--|--|--|
| Manual input | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | | | |
| Deferred Taxes - Federal | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | 12,778 | - | - | - | - | - | - | - | - | - | - | - | | | |
| Deferred Taxes - State | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | 2,337 | - | - | - | - | - | - | - | - | - | - | - | | | |
| Change in Deferred Taxes | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | 15,115 | - | - | - | - | - | - | - | - | - | - | - | | | |
| Accumulated deferred tax asset | (136,031) | (120,918) | (105,802) | (90,687) | (75,573) | (60,450) | (45,344) | (30,229) | (15,115) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Deferred Tax Calculation - Depreciation | | | | | | | | | | | | | | | | | | | | | | | | |
| Book Accumulated Depreciation | 1,625,148 | 1,664,706 | 1,704,423 | 1,744,061 | 1,783,699 | 1,823,337 | 1,862,014 | 1,902,612 | 1,942,350 | 1,942,350 | 2,051,072 | 2,159,295 | 2,266,717 | 2,377,539 | 2,486,361 | 2,595,184 | 2,704,006 | 2,812,826 | 2,921,650 | | | | | |
| Tax Accumulated Depreciation | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 2,537,148 | 2,663,166 | 3,212,562 | 3,511,936 | 3,746,007 | 4,059,650 | 4,360,776 | 4,538,703 | 4,776,576 | | | | | |
| Book/Wta Acc. Depr. Difference | (317,102) | (277,484) | (237,827) | (196,189) | (156,351) | (116,913) | (79,216) | (39,638) | (0) | (199,961) | (476,077) | (223,292) | (943,845) | (1,138,852) | (1,312,545) | (1,464,469) | (1,596,770) | (1,723,479) | (1,854,825) | | | | | |
| Deferred ITC | 12,684 | 11,099 | 9,513 | 7,926 | 6,342 | 4,771 | 3,171 | 1,586 | 0 | 213,292 | 206,939 | 204,566 | 201,233 | 195,860 | 191,527 | 187,174 | 182,821 | 178,489 | 174,195 | | | | | |
| Net Deferred Tax Asset (Liability) | (118,446) | (103,642) | (88,836) | (74,030) | (58,224) | (44,418) | (29,612) | (14,805) | (0) | 5,187 | (103,943) | (201,821) | (269,338) | (367,221) | (436,225) | (496,991) | (560,164) | (602,092) | (653,999) | | | | | |
| Deferred Tax Base | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (38,052) | (13,337) | 260,468 | 251,968 | 224,906 | 200,164 | 177,342 | 156,173 | 136,657 | 133,457 | 133,404 | | | | |
| Deferred Taxes - Federal | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (12,517) | (4,345) | 82,259 | 82,753 | 73,982 | 65,844 | 58,336 | 51,373 | 44,953 | 43,800 | 43,863 | | | | |
| Deferred Taxes - State excluding credit | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (2,289) | (0) | 16,176 | 15,132 | 13,528 | 12,049 | 10,867 | 9,394 | 8,220 | 6,028 | 8,024 | | | | |
| Change in Deferred Taxes | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (14,806) | (5,187) | (109,130) | 97,684 | 87,511 | 77,864 | 69,003 | 60,787 | 53,173 | 51,928 | 51,907 | | | | |
| Accumulated Deferred Taxes | 118,446 | 103,642 | 88,836 | 74,030 | 58,224 | 44,418 | 29,612 | 14,806 | - | (1,317) | 103,943 | 201,821 | 288,318 | 367,221 | 436,225 | 496,991 | 550,164 | 602,092 | 653,999 | | | | | |
| check: | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | | | | |
| Change in Deferred ITC | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (0) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | | | | |
| Ending Net Investment | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (0) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | | | | |
| Rate Basis and Financing | | | | | | | | | | | | | | | | | | | | | | | | |
| Investment (Rate Basis) | | | | | | | | | | | | | | | | | | | | | | | | |
| Land | | | | | | | | | | | | | | | | | | | | | | | | |
| Gross Plant | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | | | | |
| Accumulated Depreciation | 1,625,148 | 1,664,706 | 1,704,423 | 1,744,061 | 1,783,699 | 1,823,337 | 1,862,014 | 1,902,612 | 1,942,350 | 1,942,350 | 2,051,072 | 2,159,259 | 2,266,717 | 2,377,539 | 2,486,361 | 2,595,184 | 2,704,006 | 2,812,826 | 2,921,650 | | | | | |
| CAAC | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | | | | |
| Accumulated CAAC Amortization | 1,582,645 | 1,631,493 | 1,670,338 | 1,709,180 | 1,748,026 | 1,788,870 | 1,825,715 | 1,864,560 | 1,903,406 | 1,942,350 | 1,942,350 | 2,051,072 | 2,159,259 | 2,266,717 | 2,377,539 | 2,486,361 | 2,595,184 | 2,704,006 | 2,812,826 | 2,921,650 | | | | |
| Accumulated Deferred Taxes | (17,582) | (17,274) | (16,965) | (16,657) | (16,348) | (16,040) | (15,731) | (15,423) | (15,115) | (15,115) | (3,187) | (103,943) | 201,821 | 213,338 | 267,221 | 326,255 | 406,991 | 560,164 | 622,093 | 653,999 | | | | |
| Accumulated Deferred ITC | 12,684 | 11,099 | 9,513 | 7,926 | 6,342 | 4,771 | 3,171 | 1,586 | 0 | 213,292 | 204,566 | 200,233 | 195,860 | 191,527 | 187,174 | 182,821 | 178,489 | 174,195 | | | | | | |
| Ending Net Investment | (27,625) | (27,121) | (26,630) | (26,152) | (25,665) | (25,183) | (24,696) | (24,215) | (23,730) | (23,730) | (5,187) | 4,916,966 | 4,708,234 | 4,518,254 | 4,333,503 | 4,160,424 | 3,956,192 | 3,837,550 | 3,841,153 | 3,842,728 | | | | |
| Average Net Investment | 27,847 | (27,363) | (26,876) | (26,394) | (25,910) | (25,426) | (24,943) | (24,457) | (23,973) | (23,973) | (5,017,387) | 4,804,411 | 4,612,244 | 4,427,074 | 4,247,165 | 4,077,810 | 3,916,371 | 3,750,351 | 3,602,964 | | | | | |
| Average Financing | | | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | (835) | (821) | (806) | (792) | (777) | (763) | (748) | (734) | (719) | (70,507) | 150,522 | 144,282 | 138,387 | 132,752 | 127,415 | 122,334 | 117,481 | 112,781 | 108,088 | | | | | |
| Long Term Debt (Revenue Bonds) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Taxable Debt | (10,860) | (10,674) | (10,483) | (10,294) | (10,105) | (9,916) | (9,727) | (9,538) | (9,349) | (9,159) | 1,955,781 | 1,875,670 | 1,796,775 | 1,715,780 | 1,636,394 | 1,550,344 | 1,527,385 | 1,488,147 | 1,405,156 | | | | | |
| Preferred Stock | (278) | (274) | (269) | (264) | (259) | (254) | (249) | (245) | (240) | (23,502) | 50,174 | 46,094 | 42,122 | 44,251 | 42,472 | 40,779 | 39,184 | 37,594 | 36,000 | | | | | |
| Common Equity | (15,873) | (15,507) | (15,321) | (15,045) | (14,769) | (14,493) | (14,217) | (13,940) | (13,664) | (13,430) | 2,659,013 | 2,741,364 | 2,616,979 | 2,522,794 | 2,420,894 | 2,324,352 | 2,232,332 | 2,142,830 | 2,053,506 | | | | | |
| Total Financing | (27,847) | (27,363) | (26,876) | (26,394) | (25,910) | (25,426) | (24,943) | (24,457) | (23,973) | (23,973) | (5,017,387) | 4,804,411 | 4,612,244 | 4,427,074 | 4,247,165 | 4,077,810 | 3,916,371 | 3,750,351 | 3,602,964 | | | | | |
| Return on Investment | | | | | | | | | | | | | | | | | | | | | | | | |
| Short Term Debt | (33) | (32) | (32) | (31) | (31) | (30) | (29) | (28) | (26) | (26,060) | 6,023 | 5,721 | 5,535 | 5,310 | 5,097 | 4,893 | 4,700 | 4,511 | 4,324 | | | | | |
| Long Term Debt (Revenue Bonds) | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | | |
| Taxable Debt | (760) | (747) | (734) | (721) | (707) | (694) | (681) | (668) | (654) | (63,621) | 134,975 | 131,297 | 125,814 | 120,805 | 115,946 | 111,324 | 106,917 | 102,630 | 98,363 | | | | | |
| Total Interest Expenses | (724) | (700) | (686) | (672) | (658) | (644) | (630) | (617) | (603) | (60,062) | 147,986 | 137,088 | 131,449 | 126,115 | 121,044 | 116,216 | 111,617 | 107,142 | 102,684 | | | | | |
| Preferred Dividends | (15) | (18) | (17) | (17) | (17) | (16) | (16) | (16) | (16) | (15,690) | 2,301 | 2,126 | 2,098 | 2,076 | 2,051 | 2,031 | 2,011 | 1,991 | 1,971 | 1,951 | | | | |
| Net Income on Common | (1,745) | (1,685) | (1,625) | (1,565) | (1,505) | (1,445) | (1,385) | (1,325) | (1,261) | (15,690) | 314,982 | 299,991 | 287,000 | 274,009 | 261,018 | 248,028 | 235,037 | 222,046 | 210,055 | 200,064 | | | | |
| Income Taxes | | | | | | | | | | | | | | | | | | | | | | | | |
| Income Before Pref Dividends | (1,764) | (1,733) | (1,703) | (1,672) | (1,641) | (1,611) | (1,580) | (1,549) | (1,519) | (15,557) | 317,851 | 304,676 | 292,186 | 280,125 | 269,056 | 258,329 | 248,102 | 238,155 | 228,248 | | | | | |
| Income Before Taxes (including ITC) | (2,886) | (2,857) | (2,827) | (2,797) | (2,767) | (2,737) | (2,686) | (2,636) | (2,586) | (2,535) | (2,496) | 264,456 | 252,996 | 248,836 | 240,427 | 222,855 | 406,124 | 389,841 | 373,824 | | | | | |
| Investment Tax Credit | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | 1,586 | (4,353) | 4,353 | 4,353 | 4,353 | 4,353 | 4,353 | 4,353 | 4,353 | 4,353 | | | | | |
| Income Before Taxes (excluding ITC) | (4,473) | (4,373) | (4,273) | (4,172) | (4,072) | (3,972) | (3,872) | (3,772) | (3,672) | (3,572) | (4,122) | (4,071) | 264,456 | 252,996 | 248,836 | 240,427 | 222,855 | 406,124 | 389,841 | 373,824 | | | | |
| Federal Income Tax | (950) | (833) | (717) | (600) | (584) | (467) | (454) | (434) | (424) | (414) | (4,122) | (4,071) | 264,456 | 252,996 | 248,836 | 240,427 | 222,855 | 406,124 | 389,841 | 373,824 | | | | |
| State ITC | (1,174) | (1,171) | (1,168) | (1,165) | (1,162) | (1,159) | (1,156) | (1,153) | (1,150) | (1,147) | (1,125) | (1,116) | 21,296 | 25,999 | 28,769 | 27,602 | 26,492 | 25,435 | 24,429 | 23,449 | 22,474 | | | |
| Interest Expense | (794) | (780) | (766) | (75 | | | | | | | | | | | | | | | | | | | | |

| Revenue Requirements Model - Calculated | | | | | | | | | | | | | | | | | | | | | |
|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------|--|
| | | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | Total | |
| Manual Input | | | | | | | | | | | | | | | | | | | | | |
| Net Income for Common | (1,748) | (1,716) | (1,685) | (1,655) | (1,625) | (1,594) | (1,564) | (1,533) | (1,503) | 159,899 | 314,590 | 301,550 | 289,188 | 277,452 | 266,297 | 255,879 | 245,556 | 235,711 | 225,906 | 2,895,370 | |
| (0) | - | - | - | - | (0) | 0 | - | - | 0 | - | - | - | - | - | - | - | - | - | - | - | |
| Book Financial Statements | | | | | | | | | | | | | | | | | | | | | |
| Balance Sheet | | | | | | | | | | | | | | | | | | | | | |
| Land | | | | | | | | | | | | | | | | | | | | | |
| Gross Plant | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | | |
| Accumulated Depreciation | 1,825,148 | 1,864,786 | 1,704,423 | 1,744,061 | 1,783,699 | 1,823,337 | 1,862,974 | 1,902,612 | 1,942,250 | 1,942,250 | 2,051,072 | 2,159,895 | 2,206,717 | 2,277,539 | 2,486,361 | 2,595,184 | 2,704,006 | 2,812,828 | 2,921,650 | | |
| CIAC | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | (1,942,250) | | |
| Accumulated CIAC Amortization | 1,592,645 | 1,631,490 | 1,670,135 | 1,709,180 | 1,746,025 | 1,786,870 | 1,825,715 | 1,864,560 | 1,903,405 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | 1,942,250 | | |
| Accumulated Deferred Taxes | (17,582) | (17,274) | (16,965) | (16,657) | (16,348) | (16,040) | (15,731) | (15,423) | (15,115) | (5,187) | 103,943 | 201,827 | 289,338 | 367,221 | 436,225 | 496,991 | 550,164 | 602,092 | 653,999 | | |
| Accumulated Deferred ITC | 12,694 | 11,699 | 9,513 | 7,828 | 6,342 | 4,757 | 3,171 | 1,506 | 0 | 213,282 | 208,939 | 204,586 | 200,231 | 195,880 | 191,527 | 187,174 | 182,621 | 178,489 | 174,116 | | |
| Ending Net Investment | (27,605) | (27,121) | (26,536) | (26,152) | (25,668) | (25,183) | (24,699) | (24,215) | (23,730) | 5,124,187 | 4,910,588 | 4,706,234 | 4,516,254 | 4,333,901 | 4,186,426 | 3,995,192 | 3,837,550 | 3,681,153 | 3,524,776 | | |
| Short Term Debt | (628) | (614) | (799) | (785) | (770) | (756) | (741) | (726) | (712) | 153,726 | 147,318 | 141,247 | 135,488 | 130,017 | 124,813 | 119,856 | 115,127 | 110,435 | 105,743 | | |
| Long Term Debt (Revenue Bonds) | | | | | | | | | | | | | | | | | | | | | |
| Taxable Debt | (10,795) | (10,577) | (10,368) | (10,159) | (10,010) | (9,822) | (9,633) | (9,444) | (9,255) | 1,988,433 | 1,915,129 | 1,836,211 | 1,761,398 | 1,690,221 | 1,622,567 | 1,558,125 | 1,496,645 | 1,435,850 | 1,374,963 | | |
| Preferred Stock | (276) | (271) | (266) | (253) | (237) | (252) | (247) | (242) | (237) | (242) | 51,242 | 49,106 | 47,082 | 45,183 | 43,338 | 41,604 | 39,952 | 38,376 | 36,812 | 35,248 | |
| Common Equity | (15,155) | (15,150) | (15,153) | (14,507) | (14,621) | (14,555) | (14,078) | (13,892) | (13,526) | 2,920,787 | 2,799,035 | 2,683,893 | 2,574,265 | 2,470,324 | 2,371,444 | 2,277,280 | 2,187,404 | 2,098,257 | 2,009,172 | | |
| Financing | (27,605) | (27,121) | (26,536) | (26,152) | (25,668) | (25,183) | (24,699) | (24,215) | (23,730) | 5,124,187 | 4,910,588 | 4,706,234 | 4,516,254 | 4,333,901 | 4,186,426 | 3,995,192 | 3,837,550 | 3,681,153 | 3,524,776 | | |
| Income Statement | | | | | | | | | | | | | | | | | | | | | |
| Revenue | 9,715 | 10,077 | 10,446 | 10,821 | 11,201 | 11,586 | 11,961 | 12,331 | 12,707 | 344,859 | 860,459 | 830,640 | 802,397 | 775,612 | 750,177 | 725,991 | 702,961 | 680,581 | 658,300 | | |
| Revenue Taxes | 843 | 695 | 928 | 961 | 995 | 1,030 | 1,065 | 1,100 | 1,136 | 30,641 | 76,452 | 73,802 | 71,293 | 68,913 | 66,653 | 64,504 | 62,458 | 60,470 | 58,490 | | |
| Income Before Dep't, Int, Inc Tax | 6,852 | 6,182 | 9,518 | 9,639 | 10,206 | 10,559 | 10,917 | 11,281 | 11,651 | 314,218 | 784,007 | 756,838 | 731,104 | 706,659 | 683,523 | 661,487 | 640,503 | 620,111 | 599,610 | | |
| Depreciation Expense | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | 39,638 | - | 108,822 | 108,822 | 108,822 | 108,822 | 108,822 | 108,822 | 108,822 | 108,822 | 108,822 | | |
| CIAC Amortization | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | (38,845) | - | - | - | - | - | - | - | - | - | - | | |
| O&M | 13,323 | 13,562 | 13,866 | 14,141 | 14,424 | 14,713 | 15,007 | 15,307 | 15,613 | 15,925 | 16,244 | 16,568 | 16,800 | 17,238 | 17,583 | 17,935 | 18,293 | 18,656 | 19,032 | | |
| Interest Expense | (784) | (780) | (766) | (752) | (738) | (725) | (711) | (697) | (683) | 72,682 | 142,996 | 137,068 | 131,448 | 126,115 | 121,044 | 116,216 | 111,617 | 107,147 | 102,684 | | |
| Income Before Income Taxes | (4,473) | (4,423) | (4,373) | (4,323) | (4,272) | (4,222) | (4,172) | (4,122) | (4,071) | 264,436 | 515,946 | 494,379 | 473,033 | 454,524 | 436,074 | 416,512 | 401,771 | 385,486 | 365,271 | | |
| Income Taxes - Federal | (950) | (933) | (917) | (900) | (884) | (867) | (851) | (834) | (818) | 86,992 | 171,151 | 164,056 | 157,331 | 150,946 | 144,877 | 139,100 | 133,593 | 128,237 | 122,903 | | |
| Income Taxes - State | (174) | (171) | (168) | (165) | (162) | (159) | (156) | (153) | (150) | 15,907 | 31,296 | 29,091 | 28,769 | 27,602 | 26,492 | 25,435 | 24,429 | 23,449 | 22,474 | | |
| State ITC | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | (1,586) | - | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | (4,353) | | |
| Total Income Taxes | (2,709) | (2,690) | (2,670) | (2,650) | (2,631) | (2,611) | (2,592) | (2,572) | (2,553) | 102,899 | 198,094 | 189,702 | 181,747 | 174,195 | 167,018 | 160,183 | 153,669 | 147,333 | 141,023 | | |
| Preferred Dividends | (18) | (18) | (17) | (17) | (17) | (16) | (16) | (16) | (16) | 3,261 | 3,126 | 2,998 | 2,876 | 2,761 | 2,651 | 2,548 | 2,444 | 2,342 | | | |
| Net Income for Common | (1,748) | (1,716) | (1,685) | (1,655) | (1,625) | (1,594) | (1,564) | (1,533) | (1,503) | 159,899 | 314,590 | 301,550 | 289,188 | 277,452 | 266,297 | 255,879 | 245,556 | 235,711 | 225,906 | | |
| ROE ¹ | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | 11.0% | | |



November 17, 2014

Mr. Wren Wescoatt
Development Manager, First Wind
Waiawa PV, LLC
810 Richards Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Wescoatt:

Re: Waiawa PV 138kV Transmission Line Extension

In accordance with Hawaii Revised Statute 269-27.6(a)(3), Hawaiian Electric Company, Inc. is required to check with government agencies or other parties if they are willing to pay for the additional costs of under-grounding the electric lines for the subject project.

This project involves the overhead construction of approximately 2,034 circuit feet of a proposed new circuit tying into Hawaiian Electric's 138 kV transmission system to provide grid access for the Waiawa PV Project.

The estimated cost for the overhead portion of this project is \$1,943,250. The estimated cost for the underground alternative is \$ 2,969,116. The underground route essentially follows the same route as the overhead route, along a private parcel of land west of Interstate H-2. Please notify Hawaiian Electric by November 28, 2014, if First Wind is willing to pay for the costs of undergrounding the subject lines.

Thank you for your attention to this matter. If you have any questions, please contact me at 543-7194.

Sincerely,



Kathy Yonamine
Director, Project Management Division
Engineering Department
Hawaiian Electric Company, Inc.

cc: M. Chun
G. Hirose
R. Dayhuff-Matsushima
D. Jarocki
M. Colon
C. Chang
S. Takasato



November 18, 2014

Kathy Yonamine
Director, Project Management Division
Engineering Department
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, HI 96840-0001

Re: Waiau PV 138 kV Transmission Line Extension

Dear Kathy Yonamine,

First Wind received your letter inquiring about the undergrounding of the 138 kV line extensions for the Project. Since the proposed new HECO switchyard will be located less than 150 feet from the existing 138 kV transmission lines, it is not feasible to underground such a short span of line. This short overhead extension will have no significant impact on EMF levels, compared to undergrounding, and will likely go unnoticed because of the remote location of the project.

Additionally, because of the low power price offered with this Project, increasing the interconnection costs from \$13.5 million to \$15.5 million to bury this short line extension underground cannot be accommodated without increasing the current PPA price. The estimated cost of Company Owned Interconnection Facilities is significantly higher than was anticipated for the Project, and undergrounding the line would increase the cost even further. Given these reasons, First Wind is not willing to pay the additional cost to underground the subject lines.

Sincerely,

A handwritten signature in black ink, appearing to read "Wren Wescoatt".

Wren Wescoatt
Director, Development
First Wind Energy, LLC

● Waiawa and Mililani Solar Farm Projects 138-kV Interconnection Lines and Substation/Switchyard

Magnetic Fields and Audible Noise

Prepared for

First Wind



CH2M HILL
1132 Bishop Street, Suite 1100
Honolulu, HI 96813

November 2014

Introduction

First Wind is proposing to develop two independent solar farm projects on Oahu's central plain – the 47 megawatt (MW) Waiawa Solar Farm Project and the 35 MW Mililani Solar Farm Project. Each solar farm will require an interconnection to the electrical grid by connecting to an existing Hawaiian Electric Company, Inc. (HECO) 138 kilovolt (kV) transmission line. The connection to each existing transmission line will be made via a new connector tap line and substation/switchyard.

The Hawaii Public Utilities Commission (PUC) requires an analysis that compares the electric and magnetic field (EMF) levels of an overhead (OH) configuration and an underground (UG) configuration of new 138 kV transmission lines. Since the only transmission lines that are new for these two projects are the connector tap lines that link the existing transmission lines to the new substation/switchyards, those are the lines that were modeled. The tap lines were modeled in both an overhead and an underground configuration. In addition, each project requires the construction of new substations and switchyards to connect each solar farm to the electric grid. These too were modeled.

This report describes the modeling of EMF and audible noise produced from corona for the proposed connecting tap lines to the existing 138 kV transmission lines for both projects. The report also describes three dimensional magnetic field modeling results for the substation/switchyard for the Waiawa Solar Farm Project, which is the larger of the two projects. The modeling results for Waiawa will also conservatively represent those fields that would be modeled from the smaller Mililani Substation/Switchyard.

Configuration of Project

The proposed Waiawa Solar Farm project is a 47 MW project located on Oahu's central plain just east of Mililani town. The proposed substation/switchyard would be located adjacent to HECO's existing Kahe-Wahiawa 138 kV transmission line, which traverses the site. The project will consist of a First Wind substation that takes the 34.5 kV electric power from the solar farm and converts it to 138 kV transmission voltage. The 138 kV power is then sent to an adjacent HECO switchyard where a connection is made to the HECO transmission system via a transmission tap line. The interconnecting 138 kV transmission tap line connecting the substation/switchyard to the transmission line would be approximately 166 feet long. The location and configuration of the proposed Waiawa facilities are shown in Figure 1. The electrical configuration of the Waiawa Substation/Switchyard is shown in Figure 2. Note that the existing transmission line is cut and each end is connected to a tap line that runs into the switchyard/substation.

The proposed Mililani Solar Farm project is a 35 MW project located just south of Mililani town. The proposed substation/switchyard would be located immediately proximate to HECO's existing Kahe-Wahiawa 138 kV transmission line, which traverses the site. The interconnecting 138 kV transmission tap line would be approximately 166 feet long. The

location and configuration of the proposed facilities are shown in Figure 3; the transmission structure configuration used for the modeling is shown in Appendix A.

Consistent with the PUC requirements, the EMF levels of the proposed 138 kV transmission tap lines were modeled, based on both an overhead and underground configuration for each project. In addition, the 3D magnetic field levels associated with the proposed substation/switchyard were modeled for the Waiawa Solar Farm Project. Since the proposed substation/switchyard for the Mililani Solar Farm Project would be smaller (and thus would produce less EMF), the results for the Waiawa Solar Farm Project have been assumed as a conservative estimate for the Mililani Solar Farm Project.

Figure 1. Aerial photo of Waiawa Substation/Switchyard project with the existing HECO 138 kV transmission line shown in red.

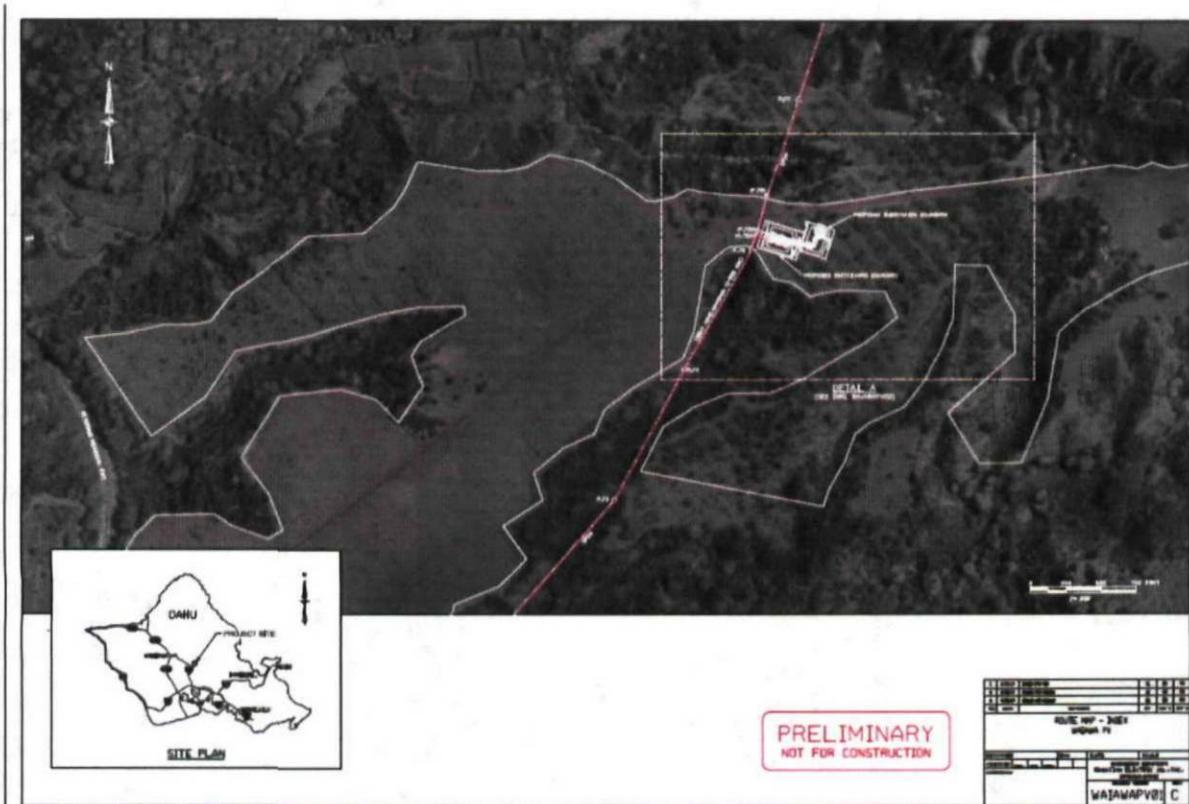


Figure 2. Schematic diagram of Waiawa Substation/Switchyard project with the tap line to the existing HECO 138 kV transmission line to the left.

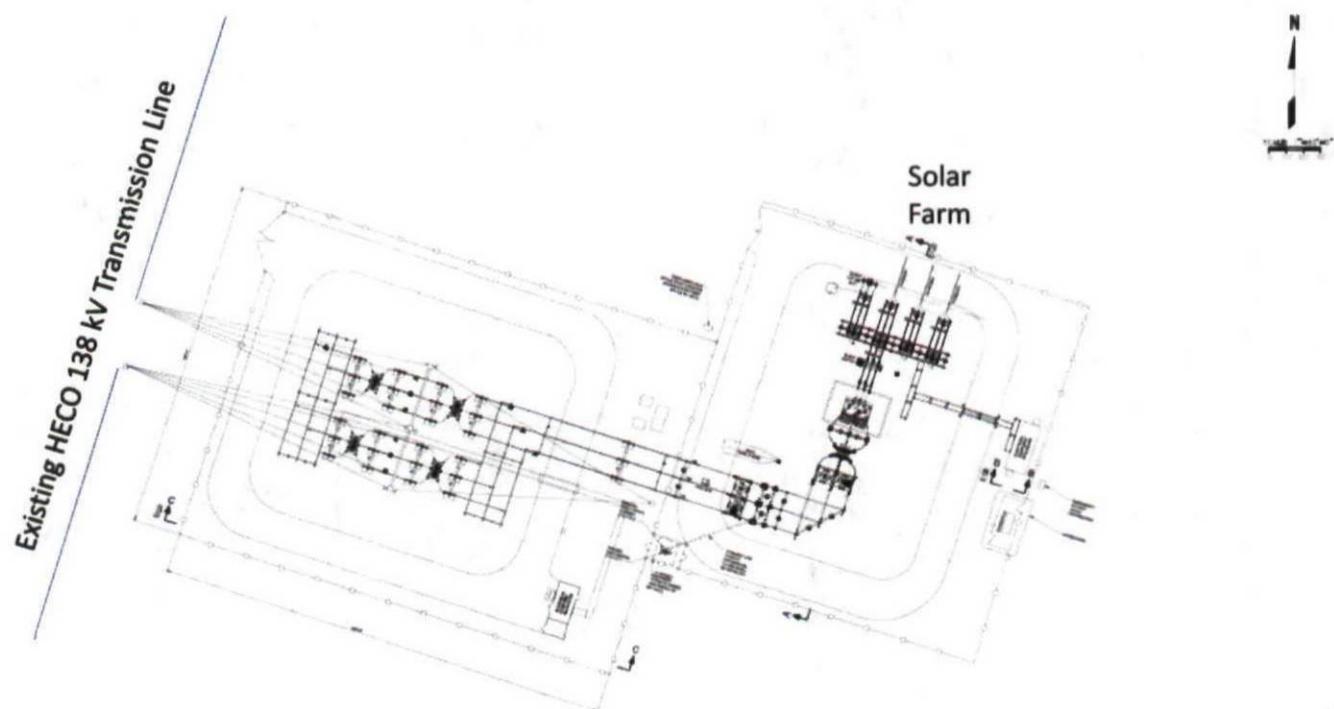
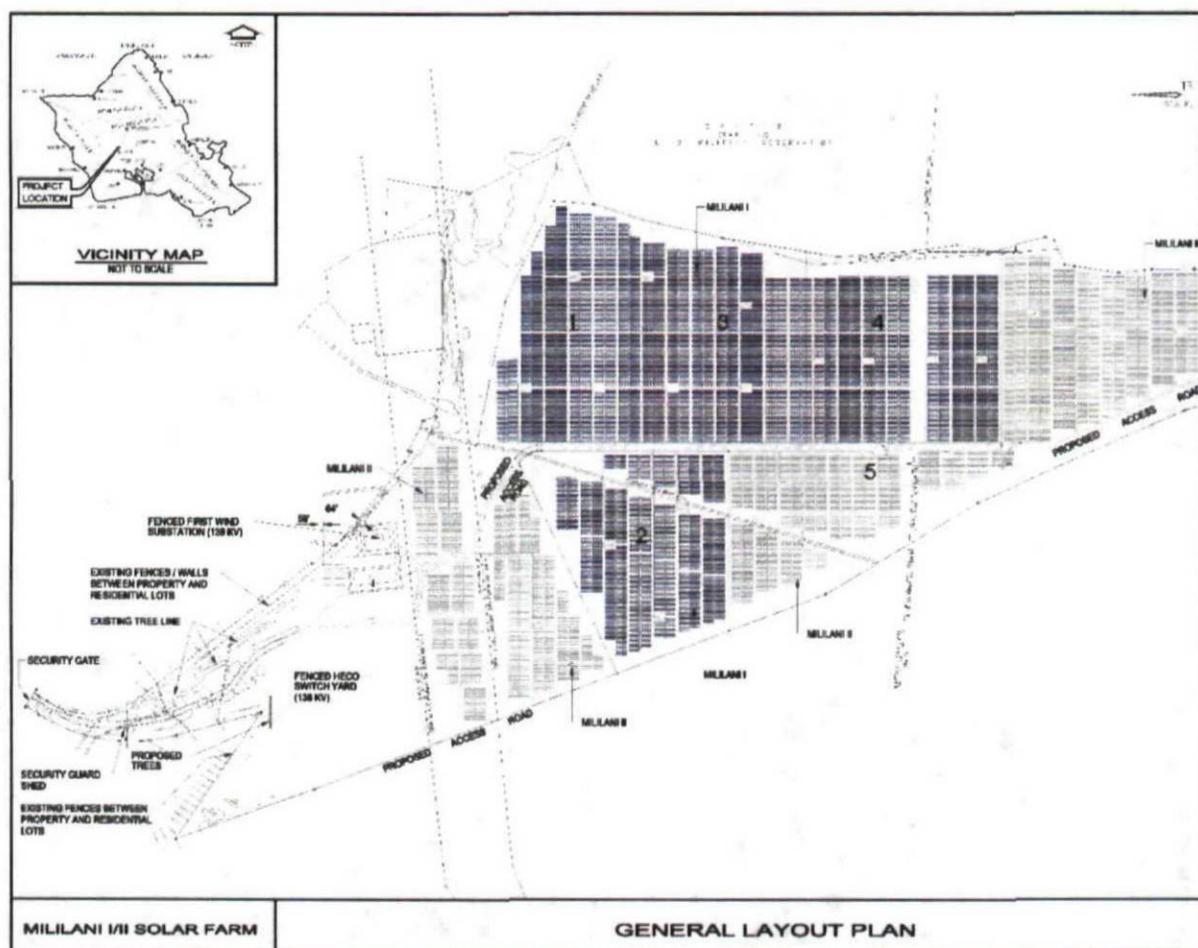


Figure 3. General layout showing Mililani Substation/Switchyard project.



Electric and Magnetic Fields from Mililani and Waiawa Interconnection Tap Lines

Electric transmission lines produce EMF when they are in operation. EMF is a term that refers to electric and magnetic fields. These fields are caused by different aspects of the operation of a transmission line and can be evaluated separately.

Electric fields are produced whenever a conductor is connected to a source of electrical voltage. An example of this is the plugging of a lamp into a wall outlet in a home. When the lamp is plugged in, a voltage is induced in the cord to the lamp which causes an electric field to be created around the cord. No electric field is detected at the surface of the ground over underground lines since the soil that overlies the underground line absorbs the electric fields.

Magnetic fields are produced whenever an electrical current flows in a conductor. In the lamp example, if the lamp is turned on allowing electricity to flow to the lamp, a magnetic field is created around the lamp cord in addition to the electric field. Magnetic fields are produced by both underground and overhead lines.

Modeling Methodology

The overhead tap lines of the Mililani and Waiawa Solar Farm Projects were modeled for their resulting electric and magnetic fields using EMF Workstation: ENVIRO (Version 3.52), a Windows-based model developed by the Electric Power Research Institute (EPRI). It is a program that accurately predicts the electric and magnetic fields produced by linear transmission lines such as those in the Mililani and Waiawa Solar Farm Projects.

The underground lines of the Mililani and Waiawa Solar Farm Projects were modeled for their resulting electric and magnetic fields using FIELDS 2.0 program, a DOS-based model developed by Southern California Edison. This model was used since the ENVIRO model is not capable of analyzing underground lines.

The nearest residences for the Mililani project are located approximately 490 feet northeast of the overhead tap line. For Waiawa, the nearest residence is located approximately 1800 feet to the east. As a result, both overhead tap lines were modeled at the lowest height of the conductors at mid span with ENVIRO as a conservative representation of the OH configuration. For the UG configuration, the tap lines were modeled with the conductors running in a single trench from the turning poles directly into the substation/switchyard.

To perform this modeling, detailed information was received from First Wind on the design of each of these tap lines and substation/switchyards, which included projected electrical power flows, operating voltage, tower configuration, conductor size and type, the height and horizontal location of each conductor, conductor sag, and conductor phasing. The modeling was conducted with the power flow on each side of the tap line representing peak power flow.

The installation of the tap lines requires HECO to cut their existing transmission line and connect a tap line to each side (Figure 2). The tap line is routed into one side of the substation/switchyard and then out the other side of the substation/switchyard forming an electrical loop. In this way the electric current that once was flowing straight along the existing HECO 138 kV transmission line now loops through the substation/switchyard. We estimated this power flow in the existing HECO transmission line to be 140 MW resulting in 586 amperes of current. On one side of the tap line the existing power flow of 586 amperes flows from the HECO transmission line into the substation/switchyard. There the current from the solar farm (47 MW or 196 amperes at Waiawa and 35 MW or 146 amperes at Mililani) is added resulting in a total return current of 782 amperes (Mililani) or 732 amperes (Waiawa) flowing out the other side of the tap line. These currents were modeled for the tap lines for both Mililani and Waiawa for both the overhead and underground configurations.

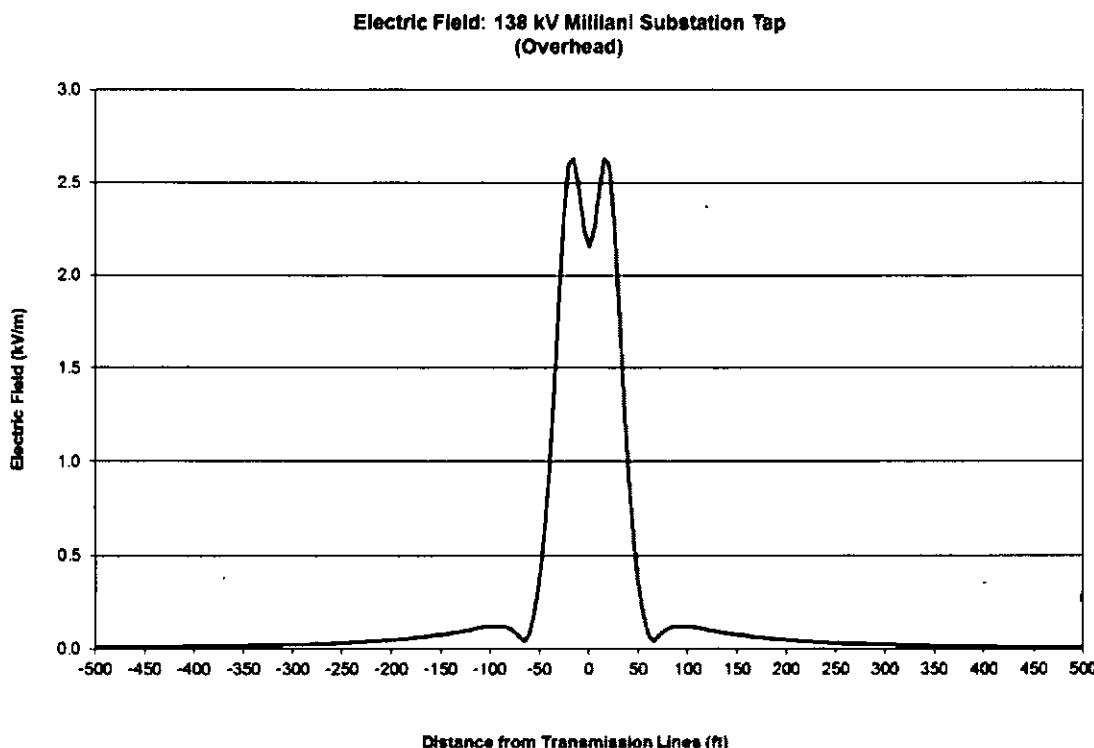
These data were input into both the ENVIRO and FIELDS programs which produced the lateral profiles of the electric and magnetic fields for each tap line. These profiles were then plotted to produce the graphs that are presented below. The accuracy of the modeling is dependent on the accuracy of the input data (i.e., if the average phase current is higher than

what was modeled, so will the resulting magnetic fields). The resulting field plots are within a few percent of the true value for the conditions modeled.

Modeling Results

Each overhead tap line was modeled at mid span with a single turning pole structural configuration. The electric field results for the Mililani Substation/switchyard are presented in Figure 4. The results of the electric field modeling show that the electric fields fall to background at a distance of 70 feet from the center of the tap lines. The maximum electric field between the tap line conductors is 2.7 kV/m.

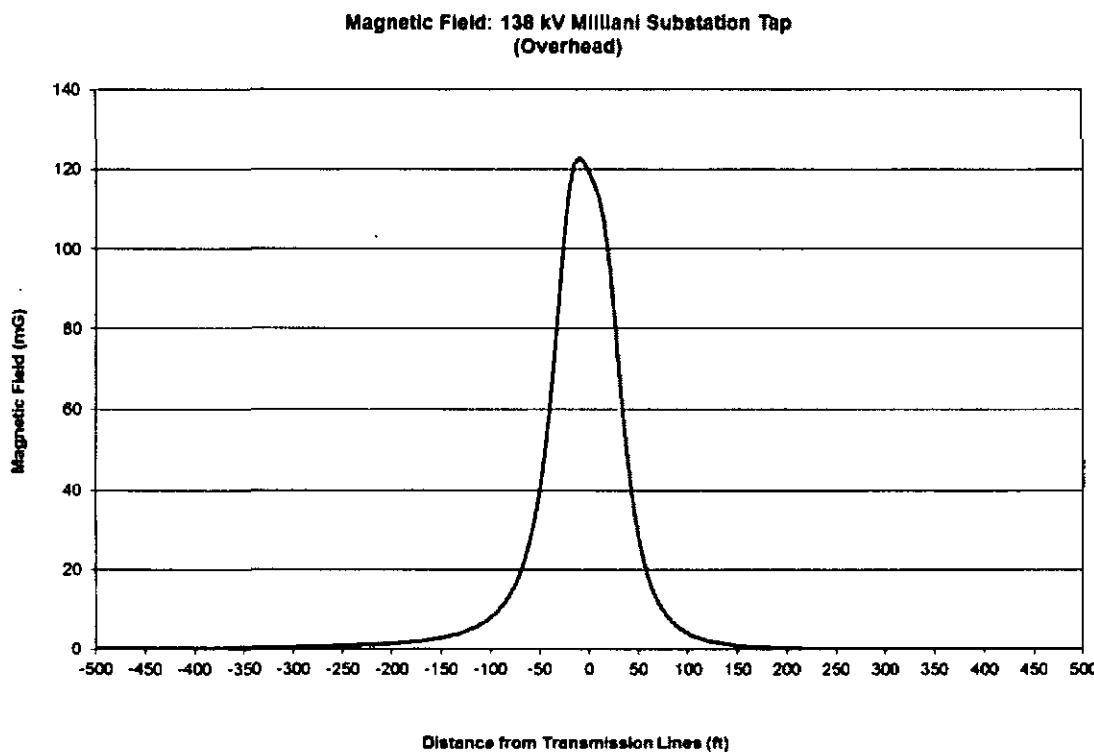
Figure 4. Electric field profile for the Mililani Substation/Switchyard Tap Line.



These values can be compared to typical electric field values for household appliances. At a distance of one foot, a coffee pot has a typical electric field of 0.03 kV/m. At a distance of one foot, an electric blanket has a typical electric field of 0.25 kV/m. Next to the blanket wires, an electric blanket has an electric field range of 1 to 10 kV/m.

The magnetic field results for the Mililani tap line are presented in Figure 5. The results of the magnetic field modeling show that the magnetic fields falls to background at about 150 feet from the center of the tap lines. The maximum magnetic field between the tap lines is approximately 125 mG.

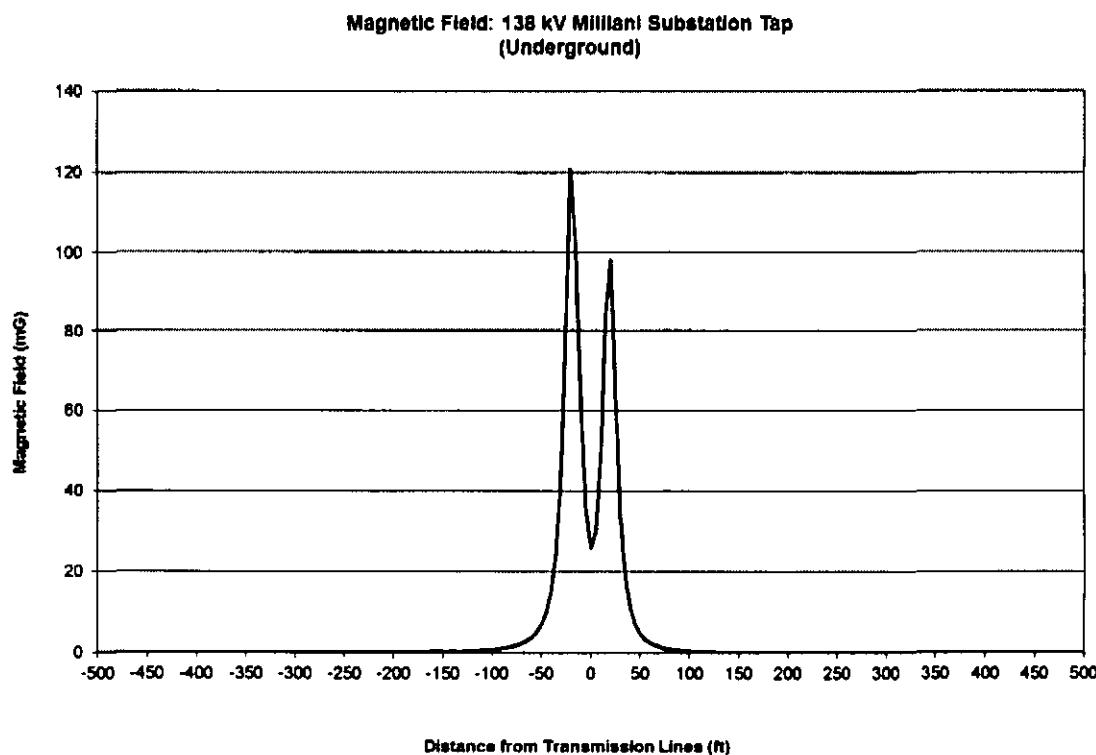
Figure 5. Magnetic Field Profile for the Mililani Substation/Switchyard Tap Line.



These values can be compared to typical magnetic field values for household appliances. At a distance of one foot, a refrigerator has a magnetic field range of 0.3 to 3 mG. At a distance of one foot, a hair dryer has a magnetic field range of 1 to 70 mG.

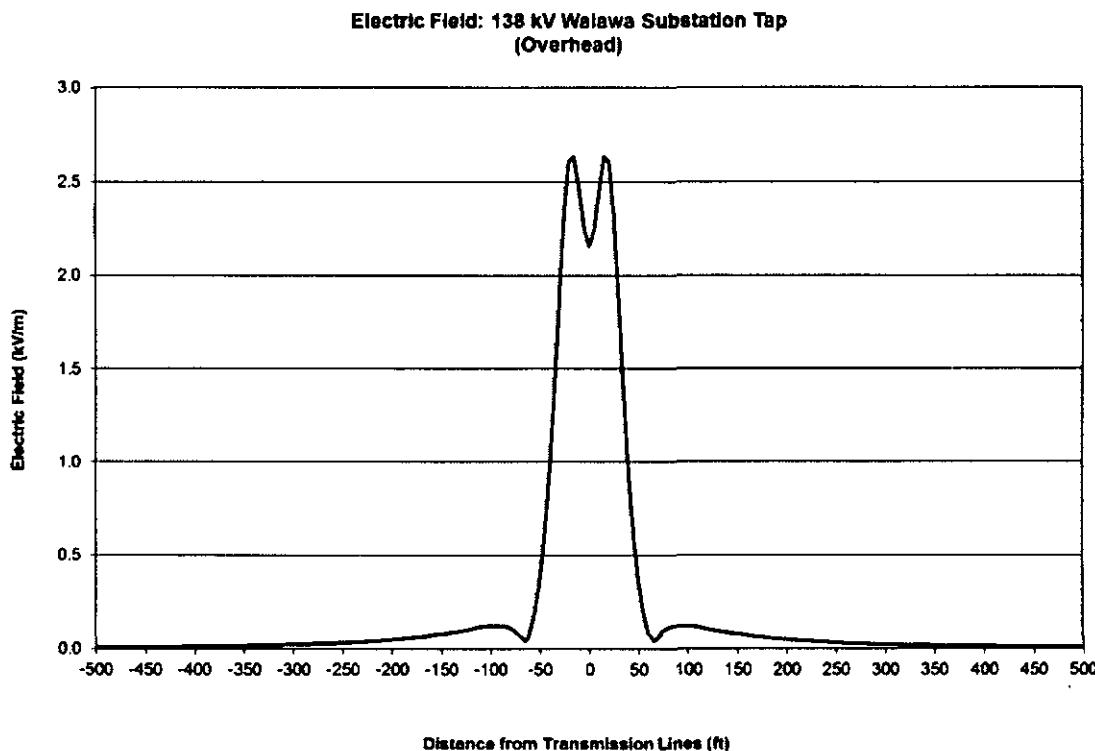
The underground tap line was modeled with a single trench configuration. The magnetic field results for this segment are presented in Figure 6. These results show that the magnetic fields drop to background within 50 feet. The fields peak at 120 mG about 30 feet from the center of the underground trench for the underground tap lines.

Figure 6. Magnetic field profile for the UG option Mililani Substation/Switchyard Tap Line.



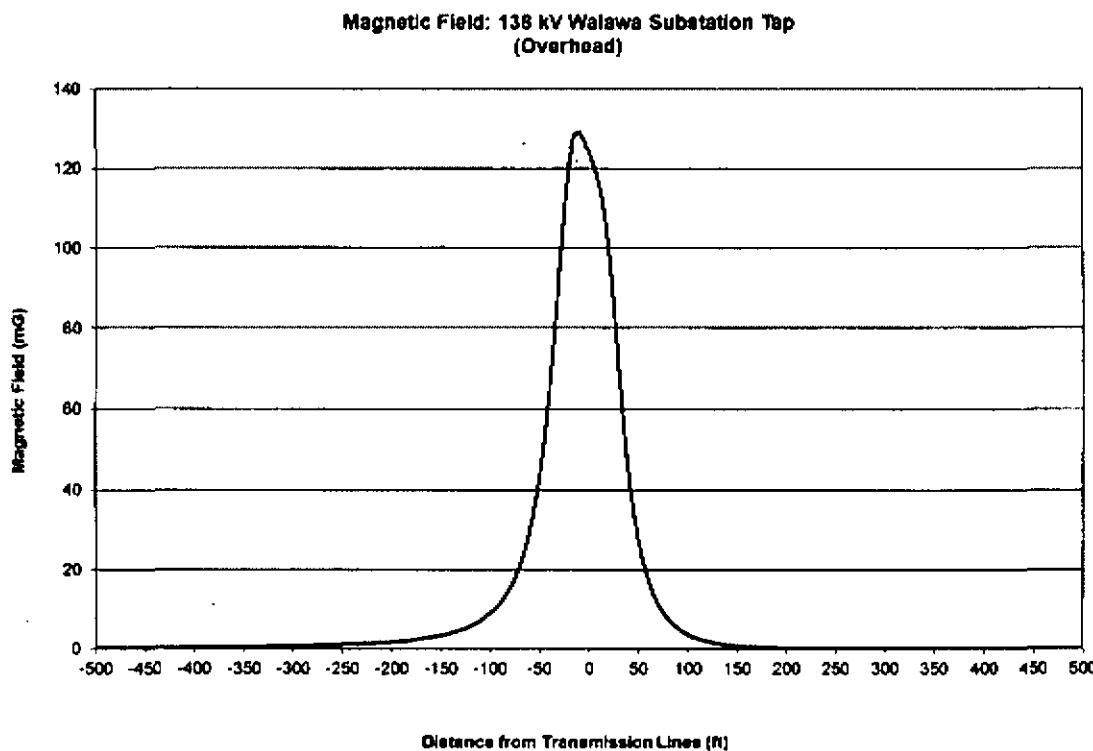
The results of the electric field modeling for the overhead Waiawa tap line are plotted in Figure 7. The electric fields fall to background at a distance of 70 feet from the center of the tap lines. The maximum electric field between the tap line conductors is 2.7 kV/m.

Figure 7. Electric field profile for the overhead Waiawa Substation/Switchyard Tap Line.



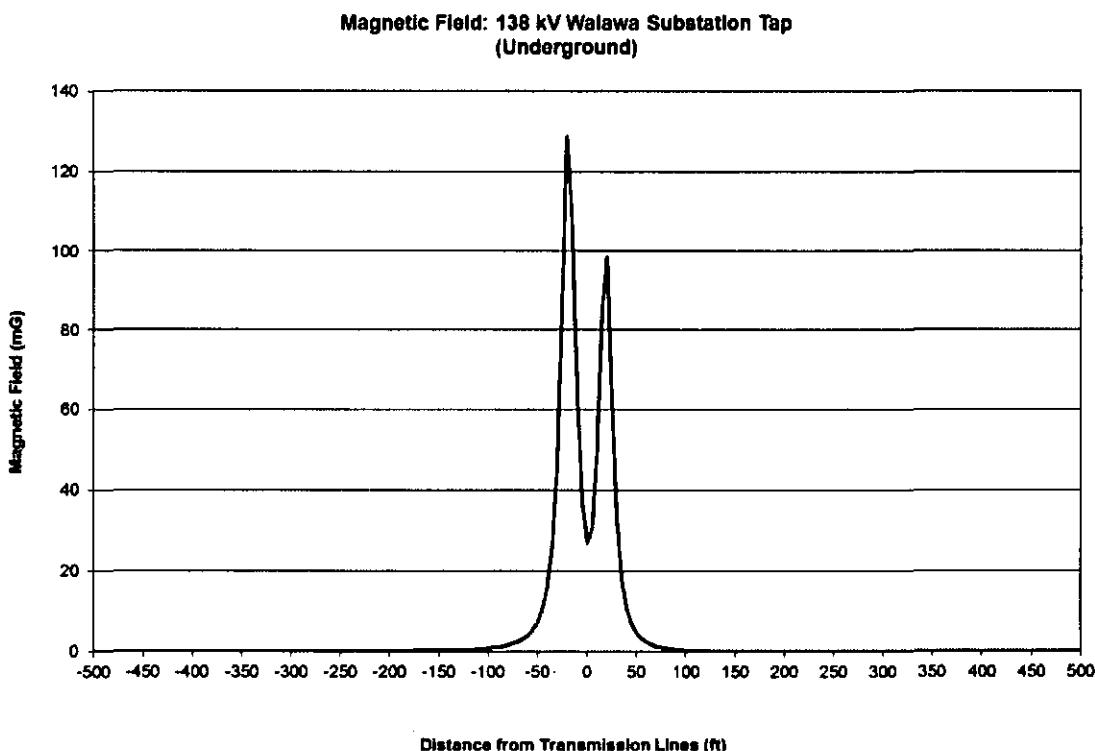
The magnetic field results for the overhead Waiawa tap line are presented in Figure 8. The results of the magnetic field modeling show that the magnetic fields falls to background at about 150 feet from the center of the tap lines. The maximum magnetic field between the tap lines is approximately 130 mG.

Figure 8. Magnetic field profile for the overhead Waiawa Substation/Switchyard Tap Line.



The magnetic field results for the underground Waiawa tap line are presented in Figure 9. The underground tap line was modeled with a single trench configuration. These results show that the magnetic fields drop to background within 50 feet. The fields peak at 130 mG about 30 feet from the center of the underground trench for the underground tap lines

Figure 9. Magnetic field profile for the underground portion of the Waiawa Substation/Switchyard Tap Line.



Corona Audible Noise from Mililani and Waiawa Solar Farm Project

Corona is the electrical ionization of the air that occurs near the surface of the energized conductor and suspension hardware due to very high electric field strength. Corona may result in audible noise being produced by the transmission lines.

The amount of corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions. The two tap lines were modeled only for the OH configuration since no corona noise is produced by underground lines. Corona typically becomes a design concern for transmission lines at 345 kV and above and is less noticeable from lines like these that are operated at lower voltages.

The electric field gradient is greatest at the surface of the conductor. Large-diameter conductors have lower electric field gradients at the conductor surface and, hence, lower corona than smaller conductors, everything else being equal. The conductors chosen for the Mililani and Waiawa Solar Farm Projects' transmission tap lines were selected to have large diameters and thus a reduced potential to create audible noise.

Irregularities (such as nicks and scrapes on the conductor surface or sharp edges on suspension hardware) concentrate the electric field at these locations and thus increase the electric field gradient and the resulting corona at these spots. Similarly, foreign objects on the conductor surface, such as dust, sea salt crystals or insects, can cause irregularities on the surface that are a source for corona.

Corona also increases at higher elevations where the density of the atmosphere is less than at sea level. Audible noise will vary with elevation with the relationship of $A/300$ where A is the elevation of the line above sea level measured in meters (EPRI 2005). Audible noise at 600 meters elevation will be twice the audible noise at 300 meters, all other things being equal. The Mililani and Waiawa Solar Farm Projects' transmission lines were modeled with an elevation of 510 feet and 890 feet, respectively.

Raindrops, fog, and condensation accumulated on the conductor surface are also sources of surface irregularities that can increase corona. During fair weather, the number of these condensed water droplets is usually small and the corona effect is also small. However, during wet weather, the number of these sources increases (for instance due to rain drops standing on the conductor) and corona effects are therefore greater. During wet or foul weather conditions, the conductor will produce the greatest amount of corona noise. However, during heavy rain the noise generated by the falling rain drops hitting the ground will typically be greater than the noise generated by corona and thus will mask the audible noise from the transmission line.

Corona produced on a transmission line can be reduced by the design of the transmission line and the selection of hardware and conductors used for the construction of the line. For instance the use of conductor hangers that have rounded rather than sharp edges and no protruding bolts with sharp edges will reduce corona. The conductors themselves can be made with larger diameters and handled so that they have smooth surfaces without nicks or burrs or scrapes in the conductor strands. The transmission lines proposed here are designed to reduce corona generation.

Modeling Methodology

The audible noise from the proposed transmission lines was predicted using EMF Workstation: ENVIRO (Version 3.52), a Windows-based model developed by the Electric Power Research Institute (EPRI).

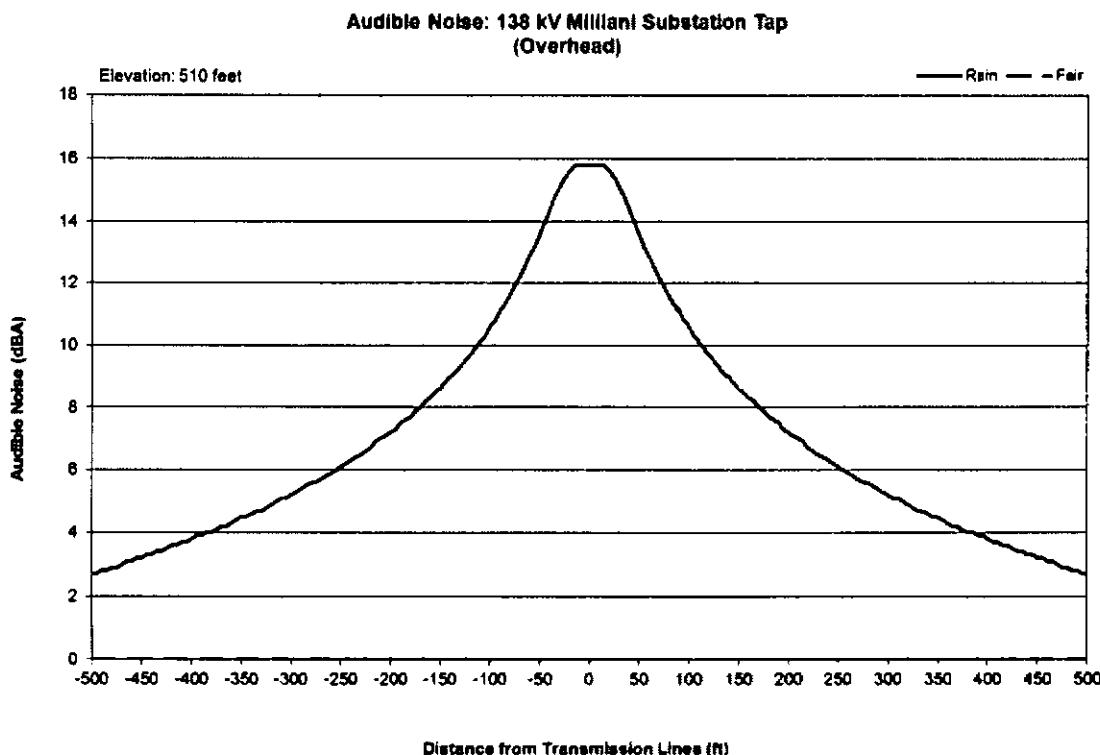
The data presented in Appendix C were input into the ENVIRO program to calculate the corona audible noise, with the addition of elevation of the line above sea level. The project transmission tap lines for Mililani and Waiawa were modeled with an elevation of 510 feet and 890 feet, respectively. Because the equations that predict audible noise were created from empirical measurements, the accuracy of the model is as good as these measurements that produced the original equations. In addition, the model is as good as the accuracy of the parameters input to the model (e.g. the actual elevation of the transmission line at a particular location rather than the average elevation of the entire project). Therefore given these

potential uncertainties, the resulting field plots are within a few percent of the true value for the conditions modeled.

Modeling Results

The corona audible noise plot for the Mililani overhead segment is presented in Figure 10. The figure shows two conditions, fair and rain. This is to show the range in corona effects due to changing weather.

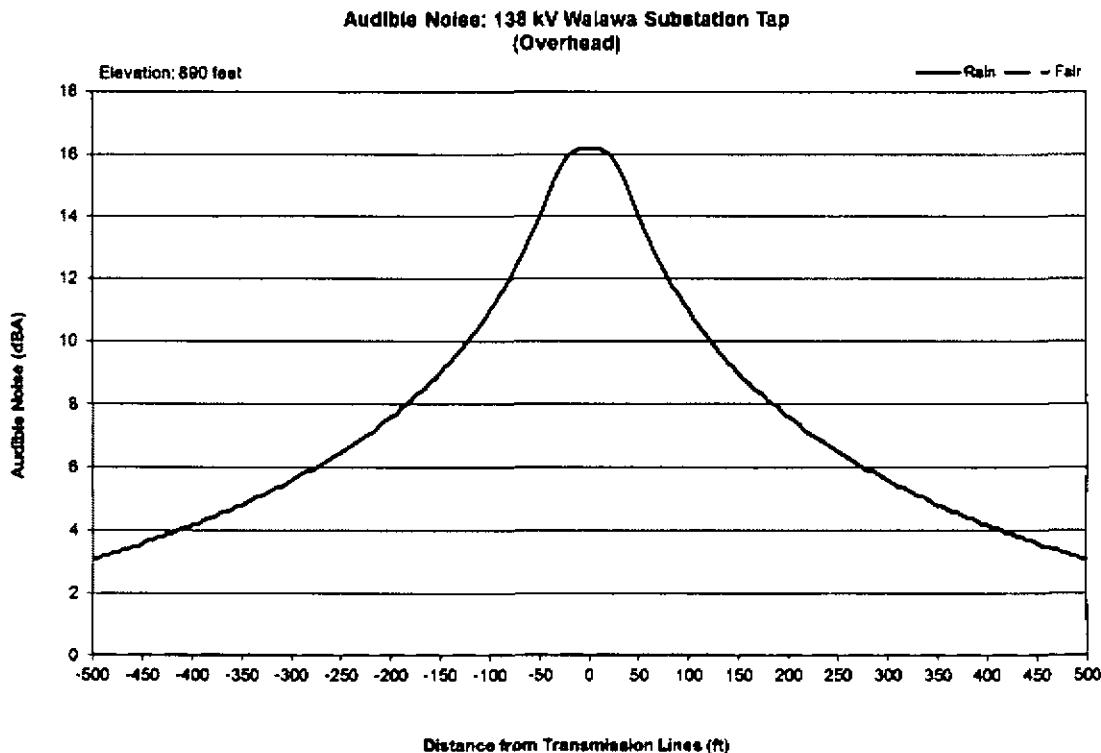
Figure 10. Corona noise profile for the Mililani overhead tap line.



The results of the corona audible noise modeling plotted in Figure 10 show that at the center of the tap lines, the audible noise is approximately 0 dBA in fair weather and 15.7 dBA in wet weather. At 500 feet from the tap line the audible noise is approximately 0 dBA in fair weather and 2.3 dBA in wet weather. At the nearest residence at a distance of 490 feet the audible noise is approximately 2.4 dBA in both fair and wet weather. These values can be compared to 20 dBA which is the level of noise from leaves rustling or a person whispering and 10 dBA which is the level of a person breathing that is barely audible.

The corona audible noise plot for the Waiawa overhead tap line is presented in Figure 11. The figure shows two conditions, fair and rain. This is to show the range in corona effects due to changing weather.

Figure 11. Corona noise profile for the Waiawa overhead tap line.



The results of the corona audible noise modeling plotted in Figure 11 show that at the center of the tap lines, the audible noise is approximately 0 dBA in fair weather and 15.7 dBA in wet weather. At 500 feet from the tap line the audible noise is approximately 0 dBA in fair weather and 2.3 dBA in wet weather. At the nearest residence at a distance of 1800 feet the audible noise is 0 dBA in both fair and wet weather.

Three Dimensional Magnetic Field Modeling Of Waiawa Substation/Switchyard

The magnetic field analysis for the Waiawa Substation/Switchyard was conducted using the 3D-FIELDS program. The Waiawa Substation/Switchyard was chosen since it will have a higher current flow compared to the Mililani Substation/Switchyard. Thus the Waiawa magnetic field results are considered worst case for both projects.

The 3D-FIELDS program, written by the Southern California Edison Company, is designed to calculate and plot in three dimensions the magnetic fields produced by any wiring configuration such as those used in substation/switchyards and other similar electrical facilities. The magnetic fields that will be generated by the proposed substation/switchyard expansions were calculated using the Grid mode in 3D-FIELDS at an elevation of three feet above the ground within the substation/switchyard. The accuracy of the modeling is dependent on the accuracy of the input data (i.e., if the average phase current is higher than what was modeled, so will the resulting magnetic fields). The resulting field plots are within a few percent of the true value for the conditions modeled.

The 3-D magnetic field analysis was conducted with 586 ampere current flow from the existing HECO transmission line, 196 amperes from the solar farm and 782 amperes combined current returned to the HECO transmission line. This represents the maximum expected current flow in each of the buss conductors to depict the highest possible magnetic fields that would be produced by the Waiawa Substation/Switchyard. The entering and exiting transmission tap lines in the analyses of the substation/switchyards were modeled at 586 and 782 amperes, the same current flow that was modeled in the separate Waiawa transmission tap line analyses discussed above.

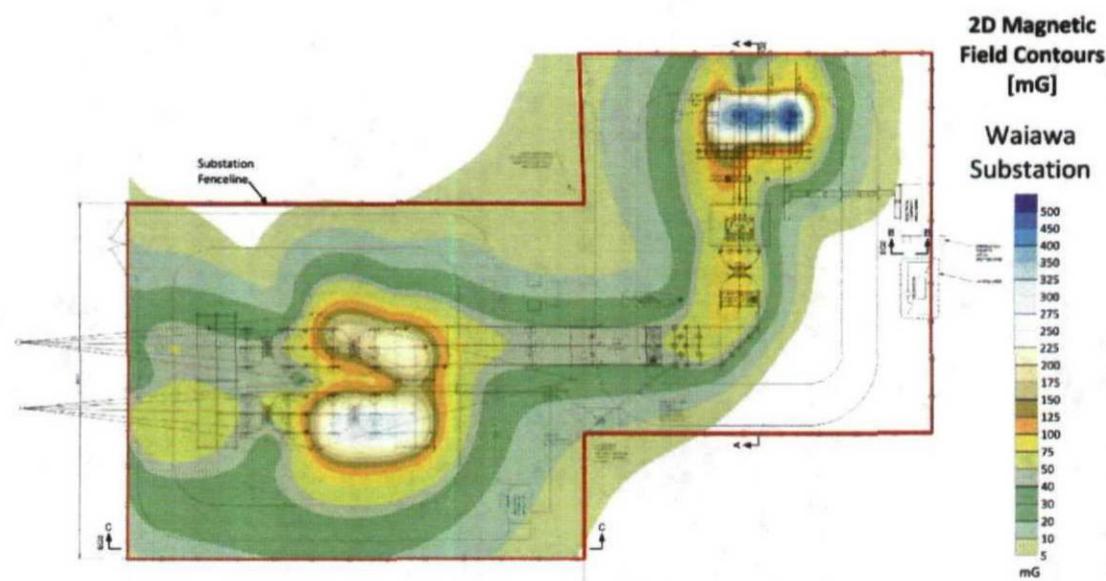
The transformers and other items of discrete electrical equipment in the substation/switchyard were not modeled since they comprise point sources of magnetic fields which will have a very rapid "cube of the distance" decay. For example if a magnetic field of 100 mG is predicted at five feet from a transformer the field level becomes approximately one eighth of this or 12.5 mG at twice the distance (ten feet) and 1.6 mG at 20 feet.

The gridded magnetic field values from the buss and transmission tap line conductors computed by 3D-FIELDS are then plotted using the 3-D graphing program Surfer available from Golden Software. Surfer creates a two-dimensional contour line representation of the magnetic field levels across the substation/switchyard.

The magnetic fields that will be generated by the proposed Waiawa Substation/Switchyard were plotted as shown in Figure 12. The contour lines shown in the white and blue colors are the locations where the magnetic field is the highest and the lowest levels shown in green are approaching zero mG field strength.

The figure shows that the magnetic field strength decreases to background levels at the new substation/switchyard fence on the northwest, and southeast sides of the new substation/switchyard. The fields are elevated at the fence where the transmission lines enter the new substation/switchyard yard from the west and the 34.5 kV lines that go to the solar farm to the northeast. Those fields where the transmission lines enter the new substation/switchyard yard are about 125 mG; however, those transmission lines are within the First Wind easements. The magnetic field strength from the Waiawa substation/switchyard will be zero at the closest house located 1800 feet to the east. When these results are applied to Mililani Substation/Switchyard, the magnetic field strength will also be zero at the nearest residence located at 275 feet.

Figure 12. 2 Dimensional Contour Plots of Waiawa Substation/Switchyard Magnetic Fields.



Conclusions

The EMF modeling developed for this study shows that outside the site boundaries, there is no significant difference in the electric or magnetic fields between the overhead and the underground configuration for the transmission tap lines. The magnetic field profiles for the underground configuration are a bit narrower than for the overhead configuration but are at about the same peak field level. For the Waiawa Switchyard/Substation, the magnetic fields are essentially contained within the substation/switchyard fence except where the power lines go in and out.

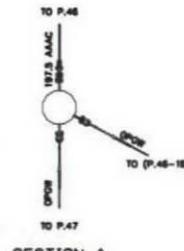
At the distance to the nearest homes the electric and magnetic fields will essentially be zero for both sites for both the tap lines (490 feet at Mililani and 1800 feet at Waiawa) and the substation/switchyard (275 feet at Mililani and 1800 feet at Waiawa). This is because the electric and magnetic fields decrease quickly with distance and in both cases they are insignificant outside the solar farm site limits.

The corona noise produced by the overhead configurations at both locations are very similar, with a maximum noise level beneath the tap line of 15 dBA in wet weather and 0 in dry weather. At the nearest house for both the Mililani and the Waiawa substation/switchyard tap lines the level of noise will be 0 dB(A) or very close to 0 dB(A) for both wet and dry conditions (2.3 dB(A) at the nearest residence to the Mililani substation/switchyard tap line).

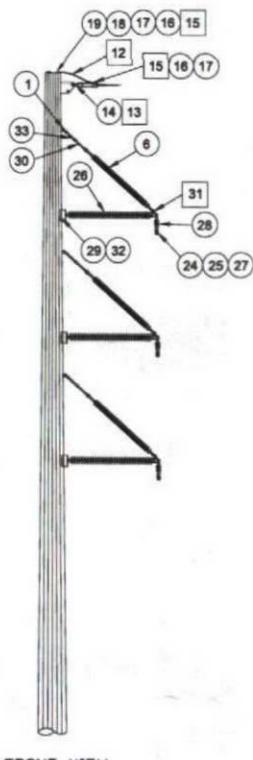
APPENDIX A
OH and UG Configurations

| DETAIL D SMU LIST | | | |
|-------------------|------------|---|------|
| DETAIL NO. | ITEM NO. | DESCRIPTION | QTY. |
| 1 | BBB0105361 | SHACKLE, ANCHOR, GALV. BUBBLE 1.5# (MACLEAN) | 3 |
| 6 | BBB0122244 | 138kV SUSP. INSULATOR (MACLEAN) | 3 |
| 11 | BBB0128345 | SIGN - HIGH VOLTAGE, ADHESIVE, 10X3.5" | 2 |
| 12 | - - - | NO. 2 AWG WELDING CABLE, ORANGE (GENERAL CABLE) | 5 FT |
| 13 | - - - | FIBERGLASS DEADEND FOR 8.64# OPGW (PREFORMED) | 2 |
| 14 | BBB0105345 | SHACKLE, ANCHOR, GALV. BUBBLE (MACLEAN) | 4 |
| 15 | - - - | GROUNDING TERMINAL PAD (BUNCIY) | 4 |
| 16 | BBB0105148 | CAPSCREW, SS 1/2-20 X 1-1/2" | 4 |
| 17 | BBB0105090 | WASHER, BELLEVILLE, 15L, 1/2" (BB) | 5 |
| 18 | BBB0106146 | MUT, HEX HEAD, SS 1/2", 13 THREAD | 3 |
| 19 | BBB0106104 | WASHER, FLAT, SS 1/2" 35 ALLOY | 3 |
| 20 | BBB0105122 | THIMBLE, DEADEND, ALV. COTTER BOLT (BETHLEHEM) | 1 |
| 21 | BBB0107162 | GRIP, GUY, AL-3/4" (PREFORMED) | 1 |
| 22 | - - - | JUMPER TERMINAL, 197.5 AAC, COMPRESSION, STRAIGHT (HUBBELL) | 1 |
| 23 | BBB0106147 | CAPSCREW, SS 1/2-20 X 1-1/2" | 1 |
| 24 | BBB0107161 | CLAMP, SUSP AL ALLOY, CLAMP, BODY ANDERSON | 6 |
| 25 | BBB0103195 | ROD ARMOR FOR 550KV, DAHLIA (PREFORMED) | 6 |
| 26 | BBB0126158 | 138 KV HORIZ. LINE POST INSULATOR (MACLEAN) | 3 |
| 27 | BBB0107123 | CLEVIS EYE, GALV, 1/16" HOLE WITH 5/16" GAL BOLT (MACLEAN) | 3 |
| 28 | BBB0102149 | LINK EXTENSION, ALUMINUM 12" CENTER TO CENTER (BETHLEHEM) | 3 |
| 29 | BBB0121986 | BOLT, HEX, GALV, 3/4" X 3", W/ NUT (USW) | 12 |
| 30 | BBB0102163 | LINK, BALL, Y-CLEVIS, GALVANIZED (BETHLEHEM) | 3 |
| 31 | - - - | SOCKET, Y-CLEVIS (MACLEAN) | 3 |
| 32 | BBB0104146 | WASHER, LOCK SPLIT, 3/4" (USW) | 12 |
| 33 | - - - | TURNBUCKLE (MACLEAN) | 3 |

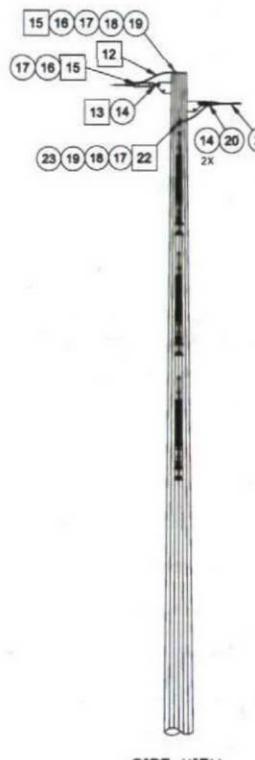
*QUANTITIES SHOWN ARE FOR A SINGLE POLE (DETAIL D)



SECTION A

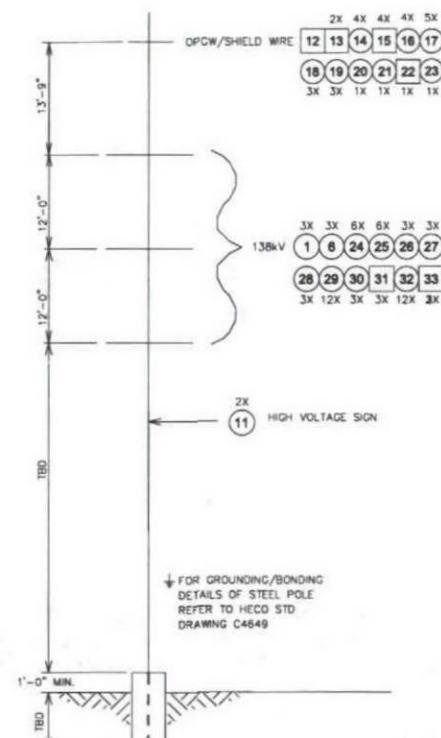


FRONT VIEW



SIDE VIEW

DETAIL D
NTS
138kV TANGENT
SELF SUPPORTING STEEL POLE



FRAMING DETAIL

(P.46A)
SEE DETAIL D

PRELIMINARY
NOT FOR CONSTRUCTION

| | | | | | |
|---|-----------|-----------------|-----------|----------|-----------|
| B | 6/26/14 | RE-10202 FOR RD | RE | TD | PM |
| A | 4/25/14 | RE-002 FOR RD | RE | TD | PM |
| RE. DATE | REVISIONS | RE. DATE | REVISIONS | RE. DATE | REVISIONS |
| ROUTE MAP - DETAILS MILILANI SOUTH | | | | | |
| DRAWN BY: DATE: CHECKED BY: APPROVED BY: DATE: | | | | | |
| ENGINEERING DEPARTMENT HAWAIIAN ELECTRIC CO., INC. HONOLULU, HAWAII | | | | | |
| DRAWING NUMBER: MILILANI03 D | | | | | |

APPENDIX B
Modeling Inputs

FWM0000A

===== GENERAL PARAMETERS =====

Title.....: OH Mililani v2
System of measurement.....: ENGLISH.
Field sensor height (feet)....: 3.28
Altitude (meters above sea level): 510
Earthresistivity (ohm-meters)....: 100.00

===== BUNDLE SPECIFICATIONS =====

| Bnd | Cir | Voltage | Current | No. of Reg | Coordinates |
|-----|-----|----------------|---------|--------------|----------------------|
| No. | No. | Phase (kV L-L) | (Amps) | Angle Subcnd | Bnd x(ft) Y(ft) |
| 1 | 1 | G0 | 0.00 | 0 | 1 YES 19.00 62.75 |
| 2 | 1 | A | 138.00 | 586.00 | 0 YES 19.00 49.00 |
| 3 | 1 | B | 138.00 | 586.00 | 120 YES 19.00 37.00 |
| 4 | 1 | C | 138.00 | 586.00 | 240 YES 19.00 25.00 |
| 5 | 2 | G0 | 0.00 | 0.00 | 0 YES -19.00 62.75 |
| 6 | 2 | A | 138.00 | -732.00 | 0 YES -19.00 49.00 |
| 7 | 2 | B | 138.00 | -732.00 | 120 YES -19.00 37.00 |
| 8 | 2 | C | 138.00 | -732.00 | 240 YES -19.00 25.00 |

===== SUBCONDUCTOR SPECIFICATIONS (REGULAR BUNDLES) =====

| Bnd. | Subconductor | Subcnd. | Subcnd. | DC Res. | 60Hz Res. | 60Hz | |
|------|--------------|---------|---------|-----------|-----------|-----------|---------|
| No. | Name | Spacing | Diam. | at 25°C | at 25°C | Reactance | |
| | | (in) | (in) | (ohms/mi) | (ohms/mi) | (ohms/mi) | |
| 1 | DAHLIA | | 0.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 2 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 3 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 4 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 5 | DAHLIA | | 0.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 6 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 7 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |
| 8 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 | 0.43800 |

===== SUBCONDUCTOR SPECIFICATIONS (IRREGULAR BUNDLES) =====

===== LATERAL PROFILE SPECIFICATIONS =====

| Interval | Start (feet) | Stop (feet) | Increment (feet) |
|----------|--------------|-------------|------------------|
| 1 | -500.00 | 500.00 | 5.00 |
| 2 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 |

===== WEATHER MODEL DATA =====

Fog information

Starting time (military time)....: 0000
Duration (hours).....: 9.00

DAY NIGHT
--- ---

Rain information:

Duration (hours).....: 2.50 1.50
Periods.....: 3 2
Median rate (in/hour).....: 0.15 0.08
L5 rate (in/hour).....: 0.75 0.40

FWM0000A

Snow information:

Duration (hours).....: 0.00 0.00

FWW0000A

===== GENERAL PARAMETERS =====

Title..... OH Waiawa First Wind v3
System of measurement..... ENGLISH
Field sensor height (feet)..... 3.28
Altitude (meters above sea level)..... 890
Earthresistivity (ohm-meters)..... 100.00

===== BUNDLE SPECIFICATIONS =====

| Bnd | Cir | Voltage | Current | No. of Reg | Coordinates |
|-----|-----|----------------|---------|--------------|----------------------|
| No. | No. | Phase (kV L-L) | (Amps) | Angle Subcnd | Bnd x(ft) Y(ft) |
| 1 | 1 | G0 | 0.00 | 0 | 1 YES 19.00 62.75 |
| 2 | 1 | A | 138.00 | 586.00 | 0 YES 19.00 49.00 |
| 3 | 1 | B | 138.00 | 586.00 | 120 YES 19.00 37.00 |
| 4 | 1 | C | 138.00 | 586.00 | 240 YES 19.00 25.00 |
| 5 | 2 | G0 | 0.00 | 0.00 | 0 YES -19.00 62.75 |
| 6 | 2 | A | 138.00 | -782.00 | 0 YES -19.00 49.00 |
| 7 | 2 | B | 138.00 | -782.00 | 120 YES -19.00 37.00 |
| 8 | 2 | C | 138.00 | -782.00 | 240 YES -19.00 25.00 |

===== SUBCONDUCTOR SPECIFICATIONS (REGULAR BUNDLES) =====

| Bnd. | Subconductor | Subcnd. | Subcnd. | DC Res. | 60Hz Res. | 60Hz |
|------|--------------|---------|---------|-----------|-----------|-----------|
| No. | Name | Spacing | Diam. | at 25°C | at 25°C | Reactance |
| | | (in) | (in) | (ohms/mi) | (ohms/mi) | (ohms/mi) |
| 1 | DAHLIA | | 0.00 | 0.855 | 0.16740 | 0.16900 |
| 2 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |
| 3 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |
| 4 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |
| 5 | DAHLIA | | 0.00 | 0.855 | 0.16740 | 0.16900 |
| 6 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |
| 7 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |
| 8 | DAHLIA | | 12.00 | 0.855 | 0.16740 | 0.16900 |

===== SUBCONDUCTOR SPECIFICATIONS (IRREGULAR BUNDLES) =====

===== LATERAL PROFILE SPECIFICATIONS =====

| Interval | Start (feet) | Stop (feet) | Increment (feet) |
|----------|--------------|-------------|------------------|
| 1 | -500.00 | 500.00 | 5.00 |
| 2 | 0.00 | 0.00 | 0.00 |
| 3 | 0.00 | 0.00 | 0.00 |

===== WEATHER MODEL DATA =====

Fog information

Starting time (military time)....: 0000
Duration (hours).....: 9.00

DAY NIGHT
==== =====

Rain information:

Duration (hours).....: 2.50 1.50
Periods.....: 3 2
Median rate (in/hour).....: 0.15 0.08
L5 rate (in/hour).....: 0.75 0.40

FWW0000A

Snow information:

Duration (hours).....: 0.00 0.00



MILILANI/WAIPIO/ MELEMANU NEIGHBORHOOD BOARD NO. 25

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 406 • HONOLULU, HAWAII, 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: <http://www.honolulu.gov>

**DRAFT- REGULAR MEETING MINUTES
WEDNESDAY, JANUARY 22, 2014
MILILANI RECREATION CENTER III**

CALL TO ORDER: Chair Dick Poirier called the meeting to order at 7:35 p.m., with a quorum of 15 members present; and led those present in the pledge of allegiance. Note: This 23 member Board requires 12 members to establish quorum and to take official Board action.

Board Members Present: Pauline Arellano, Danielle Bass (Arrived at 8:17 p.m.), William 'Bill' Bass, Michael Dau, Ann Freed (Arrived at 7:37 p.m.), Corrine Gallardo-Mata (Appointed tonight), Sabrina Gustafson, Barbara "Pua" Iuli, Josie Kaanehe, Marilyn Lee, Trevor Nagamine (Appointed tonight), Rodney Park, Richard Poirier, Charles Remington, Mary Segura (Arrived at 7:41 p.m.), Carole Siegel, Emil Svcrina, Sr. Douglas Thomas and Alvin Wong.

Board Members Absent: Linda "Fritz" Campbell, Shaun Kawakami, and Joy Marshall.

Guests: Marion Poirier; Carson Turner, Representative Lauren Matsumoto, Isis Usborne, Mikayia Fisher, and Cindy Vaillancourt (Office of Representative Lauren Matsumoto); Duke Chung (Board of Water Supply); Masrin Segovia; Representative Beth Fukumoto, Stephanie Burgess (Office of Representative Beth Fukumoto); Glenn Moir (City Department of Transportation Services); Firefighter 3 Keith Marrero and Firefighter 1 Derek Takita (Honolulu Fire Department); Lieutenant Mike Serrao (Honolulu Police Department, District 2-Wahiawa); Senator Michelle Kidani; Wren Westcoatt and Crystal Kua (First Wind Solar); Corrine Gallardo-Mata (Office of Councilmember Ron Menor); Trevor Nagamine; Heidi Tsuneyoshi (Office of Council Chair Ernie Martin); Tracy Kubota (Office of the Mayor/Deputy Director Enterprise Services); Leighton Ah Cook (Hawaii Hazards Awareness and Resilience Program); Captain Richard Barker (25th Infantry Division, U.S. Army); David Jones (Video Recorder); and Nola J. Frank (Neighborhood Commission Office staff).

Board member Ann Freed arrived at 7:37 p.m.; 16 members present.

Filling of Vacancies:

- **At-Large:** Chair Poirier asked if there was anyone present interested in filling the at-large vacancy. Corrine Gallardo-Mata offered to fill the vacancy and gave a short background about herself and interests in the community.
- **Sub District 4:** Chair Poirier asked if there was anyone present interested in filling the vacancy in sub district 4. Trevor Nagamine offered to fill the vacancy and gave a short background about his interests in the community. **Remington moved nominating Gallardo-Mata and Nagamine to fill the Board's vacancies. Without objections, Gallardo-Mata and Nagamine were APPOINTED to fill the vacancies, 16-0-0.** Residency verification was done prior to convening of the meeting.

The Neighborhood Assistant administered the oath of office; 18 members present.

APPROVAL OF REGULAR MEETING MINUTES OF OCTOBER 23, 2013: The July 24, 2013 regular meeting minutes were APPROVED as amended by UNANIMOUS CONSENT, 18-0-0 (Aye: Arellano, B. Bass, D. Bass, Dau, Freed, Gallardo-Mata, Gustafson, Iuli, Kaanehe, Lee, Loomis, Nagamine, Park, Poirier, Remington, Segura, Siegel, Svcrina, Thomas, and Wong). Correction to the January 22, 2014 agenda: should read,

- Page 2, Announcements should read Next Board Meeting will be at Mililani Recreation Center III on Wednesday, February 26, 2014 at 7:30 p.m.

COMMUNITY FORUM:

Honolulu Fire Department (HFD): Firefighter 3 Keith Marrero reported the following:



MILILANI/WAPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTES

WEDNESDAY, JANUARY 22, 2014
PAGE 2 OF 8

- December 2013 Fire Statistics: There were 7 structure fires, 1 rubbish fire, 2 vehicle fires, 64 medical emergencies, 3 search and rescues, and 6 miscellaneous calls for service. There were two (2) major incidents with four (4)/ two (2) companies and one (1) Battalion Chief responding.
- Fire Safety Tip-Electrical Safety: Ensure that electrical work is performed by a qualified electrician. Ensure only one (1) heat-producing appliance is plugged into a receptacle outlet at a time. Plug major appliances directly into wall receptacle outlets. Extension cords and power strips should not be used. Do not run electrical cords across doorways or under carpets. Extension cords are intended for temporary use. Have a qualified electrician add more receptacle outlets to avoid using extension cords. Use light bulbs that match the recommended wattage on the lamp or fixture. A sticker on a lamp or fixture should indicate the maximum wattage light bulb to use.

Honolulu Police Department (HPD): Lieutenant Mike Serrao announced that HPD has changed the statistics report to a uniform format process for all districts.

- Statistics for the District 2: Included 14 motor vehicle thefts, 32 burglaries, 79 thefts, and 59 unauthorized entries into motor vehicles (UEMV).
- Other Statistics – There were 6 auto thefts, 6 burglaries, 20 thefts, 14 unauthorized entries into motor vehicles; 1,047 calls out of a total 3,423 district calls for service.

Board member Mary Segura arrived at 7:42 p.m.; 19 members present.

Military: Captain Richard Barker reported the following:

- 8TH Theater Sustainment Command: The Command currently has two (2) units/detachments deployed and approximately 170 personnel deployed in support of overseas contingency operations and off-island missions.
- 130th Engineer Brigade: Approximately 140 soldiers from the 130th Engineer Brigade Headquarters and 240 soldiers from the 65th Engineer Battalion are deployed to Afghanistan in support of Operation Enduring Freedom.
- Army Natural Resources Volunteer Opportunities: The U.S. Army Garrison-Hawaii, Natural Resources Program staff, leads monthly volunteer service trips to protect rare and endangered plants and animals on army managed lands. To register for volunteer service trips visit <http://oanrp.volunteer.com>. The next volunteer service trip is scheduled for Thursday, January 30, 2014 from 8:30 a.m. to 5:00 p.m. to Kalua`a.
- Marine Resources Study Update: The Army is continuing work on the Marine Resources Study at Makua Beach.
- Army, State Partners to Protect Oahu's Watershed: On December 5, 2013 soldiers from the 25th Infantry Division's Combat Aviation Brigade joined resources with the Army, and State of Hawaii's Department of Land and Natural Resources (DLNR) staff to transport 200,000 pounds of fencing into the Ko'olau Mountains, as part of an airlift operation to protect Oahu's watersheds.
- 50-Megawatt Biofuel-Capable Power Generation Plant: The U.S. Army is seeking comments from now until March 3, 2014, on the scope of a future Environmental Impact Statement (EIS) for the construction and operation of a 50-megawatt biofuel-capable power generation plant at Schofield Barracks. The public is invited to participate in the process at two (2) scoping meeting on Wednesday, February 5, 2014 from 6:30 p.m.-9:00 p.m. at Mililani Mauka Elementary School Cafeteria; and on Thursday, February 6, 2014 from 6:30 p.m. to 9:00 p.m. at Wahiawa District Park. Contact the U.S. Army Garrison-Hawaii Public Affairs office at (808) 656-3152 with any question regarding the scoping process.
- Noise and Dust Complaints: To report loud or low-flying Army aircraft call the Noise Concern Hotline at 656-3487.

Questions, comments and concerns: Vehicle Decals: Freed asked and Barker clarified that decals are no longer necessary, but identification must be provided.

Board of Water Supply (BWS): Duke Chung announced that 2014 BWS calendars and copies of the Xeriscape Garden workshop schedule, synopsis of water announcements October through December 2013, Board of Water Supply Snapshot, and a letter from the Commander, Navy Region Hawaii and Naval Surface Group regarding the gas leak at Red Hill were available on the back table. Chung highlighted the following:

- Water Main Breaks: No water main breaks or construction projects during the month of December 2013.

MILILANI/WAPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTESWEDNESDAY, JANUARY 22, 2014
PAGE 3 OF 8

- Water Conservation Contests: The BWS is launching its 36th Annual Water Conservation Week Poster Contest and 6th Annual Poetry Contest. This year's theme, "Conserve Water: No Effort is Too Small," inspires students to demonstrate through illustrations and poetry that small and simple actions contribute greatly to our efforts to preserve water resources for generations to come. The poster contest is open to Oahu students in grades Kindergarten to grade 6, and the poetry contest for students in grades 7 through 12. The deadline to enter these contests is Wednesday, March 12, 2014; winners will be announced in May, receive prizes, and be featured in the BWS 2015 Water Conservation calendar.
- 'Olelo Youth Xchange Video Competition: The BWS is pleased to sponsor a category in the Youth Xchange Video Competition, which is a statewide student video competition coordinated by 'Olelo Community Media. The BWS's sponsored category, "Xeriscaping: Saving H20utdoors," challenges Hawaii's youth to come up with a 30-second Public Service Announcement that expresses the importance of Xeriscape and water conservation outdoors. The competition is open to students in grades Kindergarten through 12. The entry deadline is Saturday, March 1, 2014.

Questions, comments and concerns:

1. BWS Road Re-paving: Iuli reported that streets in her area were repaved and several weeks later were dug up by BWs and questioned why. Chung replied that road repaving may cause leaks. BWS checks the area and then repaves the roads.
2. Testing for Gas Leaks: Arellano asked and Chung noted that BWS continues to monitor the water in the Red Hill area. Arellano noted that she did not know that there was an underground electric train from Red Hill to Pearl Harbor.

Honolulu Rail Project: Scott Ishikawa reported the following:

- Four-Car Configuration: The Honolulu Authority for Rapid Transportation (HART) recently approved moving to a four-car configuration for the trains. HART had originally planned to open the system with a two-car train configuration, eventually increasing to four-car configurations. The four car trains will carry up to 800 passengers and have about 200 seats. Passengers, particularly those with disabilities or parents with strollers and small children who need more time to board and exit, will have more entry and exit points and an easier time boarding trains. HART will also see a cost savings in operations and maintenance costs.
- Stations and Platforms: Stations and platforms are already designed to accommodate four-car trains. The added benefits to customers and cost savings prompted the decision to go directly to a four-car configuration beginning opening day of rail service. Other incentives, including the 25 percent increase in seating and free Wi-Fi on trains, are also expected to boost ridership.
- Construction: It's been about four months since construction resumed on the Honolulu rail project. Nearly forty of the columns that will be built to support the elevated guideway have now been completed. Work on more of the column foundations continues in Ewa. In addition, soil testing, utility relocation and demolition is underway at several other locations all along the twenty mile rail route to Kakaako.
- Safety: As safety is a main priority for HART, motorists are advised to use caution when entering a construction zone, observe posted signs for detours and construction activity and keep a safe distance from workers and equipment. Motorists should anticipate some possible delays in traffic and proceed with caution through the work areas.
- Information: For more information, please visit the website www.honolulutransit.org, call the project hotline at 566-2299 or email a question at info@honolulutransit.org.
- Rail Station Design Community Informational Meeting #2: The meeting will be held on Wednesday, January 29, 2014, Highlands Intermediate School Cafeteria; 6:00 p.m., registration and open house, 6:30 p.m. program begins, and 8:30 p.m. meeting ends.

Questions, comments and concerns:

1. Blocking of Lanes: Dau noted the blocking of lanes to install the columns. Ishikawa replied that blocking of lanes is occurring in the Aiea/Pearl City areas. Test shock work is happening. Test columns are being built to determine the foundation depths. Dau asked if lanes would be blocked for the next five (5) years.
2. HECO Power Plant: Dau asked and Ishikawa noted that equipment is being dismantled by HECO. Dau reiterated the lanes are closed off in the HECO section of the highway. Ishikawa added that when drill work is being done is when the lanes are pushed out.

MILILANI/WAPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTES

WEDNESDAY, JANUARY 22, 2014
 PAGE 4 OF 8

Other Community Concerns: None.

Recognition Awards:

- Councilmember Ron Menor: Councilmember Ron Menor was presented with a lei and certificate of recognition for truly representing the community's interest in recent deliberations granting county zoning for the Koa Ridge development. His efforts to adopt conditions mitigating adverse impacts, to expand the definition of affordable housing, and to assure the developer's fair share contribution in providing for regional transportation infrastructure are greatly appreciate by the Mililani/Waipio/Melemanu Neighborhood Board No. 25.
- Board Member Pua Iuli: Senator Kidani recognized Board member Pua Iuli for her work with the Pali Momi Hui Malama Kako'o Cancer Support Group. Chair Poirier presented Iuli with lei.

PUBLIC FORUM:

Mililani Trolley Service Discontinuation and TheBus Substitution Plan: Glen Moir, of the City Department of Transportation (DTS) Operations Branch, circulated copies of the Rider Alert handout, and reported the following: Conversion of the trolley routes have been absorbed into part of TheBus system. The community was notified of the changes and community feedback is welcome.

Questions, comments and concerns:

1. Transfers: Svcina asked if transfers would be accepted onto the regular routes. Moir replied yes. Buses on the former trolley route are called an access bus. People with special needs will be accommodated.

Board member D. Bass arrived at 8:17 p.m.; 20 members present.

2. Access Bus Schedule for School Children: A resident raised concern that the 10-15 minute schedule change makes a difference in wait time for kids waiting for the bus to go to school. The resident pointed out that there is no bus for the high school students on the makai side. It was stated that there is a one (1) hour gap between the 6:50 a.m. bus and the 7:50 a.m. bus. It was noted that this is a safety issue for people/students waiting in the dark. Moir noted a quick fix would be done and the schedule adjusted without disrupting other riders.
3. Modification Cost: Gallardo-Mata asked what the cost is to modify the bus routes. Moir replied the exact annual cost was not known, but follow up will be done. Moir noted that the Administration is doing its best to restore or modify services with limited funds.
4. Bus Route 503 to Waipio Acres: Iuli asked why the bus does not go through the entire Waipio Valley. Moir noted that there are some issues with turns and roadways. However, expansion can be considered. Iuli added that there are many seniors living in the community.

Update Regarding Hawaii Hazards Awareness and Resilience Program (HHARP): Leighton Ah Cook, Branch Manager Chief, Hawaii Civil Defense, presented the following:

- Program: The Hawaii Hazards Awareness Resilience Program (HHARP) is to help communities prepare to be self-resilient during and after natural hazard events, improve their ability to take care of their own needs, and reduce the negative impacts of disaster.
- HHARP Kit: The resources in the program and HHARP Resource Kit will help communities build resilience through increasing awareness of hazards, enhancing understanding of official warning information, educating residents about response actions, improving personal preparedness, helping communities identify useful skill and resources they already have, guiding communities in the developments of emergency plans and exercises, providing support for community outreach events; and identifying opportunities for additional training and education.
- Training Opportunities: Free independent study training course opportunities are available.

Questions, comments and concerns:

1. Food Supply: Lee reminded everyone to keep seven (7) days worth of food in case of a disaster.
2. North Shore: D. Bass noted that a good job was done on the North Shore today dealing with the high surf.

MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTES

WEDNESDAY, JANUARY 22, 2014
 PAGE 5 OF 8

Proposed solar Park Projects at Mililani and Waiawa: Wren Westcoatt, First Wind Solar Group Development Manager for Hawaii introduced Crystal Kua and presented the following:

- Wind Projects: There are two (2) wind projects on Maui. Energy projects are built and hooked up with Maui Electric Company (MECO). First Wind Solar Groups is a wholesale that will provide power to utility companies to sell to consumers. There are currently two (2) wind farms on Oahu.
- Renewable Energy: With this renewable energy HECO will burn less oil
- Solar Projects: Solar is cheaper, cleaner, provides energy at a low cost, and reduces the amount of fossil fuel use.
- Mililani Solar Project: The Mililani Solar project was conceived by Castle & Cooke.
- Solar PV Projects Construction and Operation: Posts are pounded into the ground surrounded by racks, and panels placed on the racks. The collections system is underground. A fenced yard connects to a transformer line, and connects to a voltage transmission. Panels are from four (4) to seven (7) feet in height.
- Construction Impacts to the Neighborhood: Include trucks and equipment, dust, and general construction noise. Once built, the area will be quiet.
- Location of Projects:
 - Mililani Solar will be located on 140 acres on Lanikuhana Avenue and the end of Meheula Parkway, and 120 acres of Mililani Agriculture Park. Phase I would contract with HECO, and get Public Utilities Commission (PUC) approval before proceeding.
 - Waiawa Solar will be located near the H-2 Freeway above the Pineapple overpass, mauka of Kipapa consisting of fix fill systems, that don't move; each 47 megawatts each.
- Class D Agriculture Zoning: Permits cattle grazing.
- Legislative Bills: There are two (2) legislative bills relating to Class B and C zoned land allowing both agriculture and solar. Plans are to possibly raise sheep or goats.
- Tours: Tour programs are available.
- Long-Term: The developers plan is a long-term community partnership.

Questions, comments and concerns:

1. Waiawa/Koa Ridge Mauka: Dau noted that the Mililani area has farming and asked if the farmers would be moved out. Westcoatt replied that some farmers would be relocated.
2. Color of Windmills – Dau asked and Westcoatt noted that windmills are not painted earth tones for the safety of aircrafts and the birds.
3. Grid Scale – Freed asked and it was noted that the grid scale will have large brackets.

REPORTS OF PUBLIC OFFICIALS:

Governor Neil Abercrombie's Representative: A representative was not present. A report was not provided. Chair Poirier announced that a new governor's representative would be assigned to the Board.

Mayor Kirk Caldwell's Representative: Tracy Kubota reported the following:

- Mililani District Park Windscreen: Regarding a site visit with the Department of Parks and Recreation (DPR) staff, it is noted to contact Lynette Kishimoto, Mililani Complex supervisor at 623-3170 to schedule a meeting.
- Complete Streets: The Department of Transportation Services (DTS) will be pleased to meet with the Board regarding complete streets for the Lanikuhana Street intersection area.
- Kuahelani Avenue Heading Towards Kamehameha Highway: DTS conducted a study and revised the lane use for west bound (Kamehameha Highway bound) Kuahelani Avenue motorists to increase capacity at the intersection by installing separate right turn, straight, and left turn lanes. This also facilitates the right turn on red movement onto Kipapa Drive.
- Mililani Waena Park Signage: DPR thanks the community for notifying them of the graffiti. DPR removed the graffiti and stickers that are on numerous signs and will replace the signs that are damaged beyond repair.

Questions, comments and concerns:

1. Thank You: Arellano thanked Mayor Caldwell and staff for the repaving of Keaoopua Street. The job was fantastic.

MILILANI/WAIPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTES

WEDNESDAY, JANUARY 22, 2014
PAGE 6 OF 8

2. ORI Settlement: Arellano noted that per a January 11, 2014 newspaper article \$2.88 million was returned to the federal government and asked if it was taxpayer money. Follow up will be done.
3. Meheula Parkway Repaving: Freed asked what the schedule for the Meheula Parkway repaving is. Kubota noted that it was reported earlier March 2013.
4. Homeless: An update will be provided next month.
5. Kipapa Drive and Kuahelani Avenue Reconfiguration: Thomas raised safety concerns noting that drivers are now forced onto the first left lane onto Kamehameha Highway and move over to another lane to cross Kamehameha Highway. A solution would be using the far left lane for left turns or going straight ahead crossing Kamehameha Highway. Thomas pointed out that basically something not broken was taken and is now broke. Remington noted that the far right hand lane has changed to right turn only. Kaanehe added that due to too many accidents changes had to be made.

Councilmember Ron Menor: Councilmember Menor circulated his written report and highlighted the following:

- Congratulations: The newly appointed Board members were congratulated.
- Council Schedule: Copies of the 2014 City Council meeting schedule were distributed.
- City Council Priorities: 1) One of the Council's priorities will be to review the City's budget for Fiscal Year 2014-2015. Mayor Caldwell is expected to submit his proposed budget to the City Council early in March. 2) On Thursday, February 6, 2014 Resolution 13-168 will be heard by the Zoning & Planning Committee at 10:00 a.m.
- Meheula Parkway Update: On January 10, 2014, Councilmember Menor sent an email to Director Chris Takashige of the City Department of Design and Construction (DDC) requesting an update on the project. According to Director Takeshige, the contractor is preparing and submitting work schedules, traffic control plans and other required documents to DDC. When the documents are approved, the City will allow construction to start. DDC anticipates that the contractor would start work in February or March 2014.
- Central Transportation Study Update: The Oahu Metropolitan Planning Organization (OMPO) has received federal funding for the study. The problem is that the State Department of Transportation (DOT) is not willing to match the \$50,000 until the project is defined.
- Written Report: Included in the written report are Lanikuhana Avenue Crosswalk; Kipapa Drive overgrown grass; weekly road work report for Mililani; City affordable housing sale; and opening day ceremony at the 2014 Legislature.
- Mililani High School Football Team: The Mililani High School football team won the OIA 2013 championship and will be honored by the City Council with certificates of merit on Wednesday, January 29, 2014.

Questions, comments and concerns:

1. Koa Ridge Unilateral Agreement: Dau asked and Menor replied that the agreement is a binding legal document. Implementation by DOT before the final subdivision included adequate relating to transportation. It was noted that Ka Uka Boulevard infrastructure would be improved first.
2. Thank You – Arellano thanked Grace Pacific for the repaving and requested for an ORI update. Menor noted he is anticipating a report in the coming months.
3. Bill 69, Relating to Advertising on City Buses – Nagamine asked if the advertising would be on the exterior of the buses. Menor replied that this is a difficult issue. Meetings have been held with DTS Director Formby. Nagamine added that the issue was discussed last year. Menor noted that the revenues could end up in the general fund. Remington relayed that generated funds should go back into the fund (100% guaranteed); a watch dog would be needed. Freed asked if the City and County has special accounts. Menor answered that conditions were incorporated in the bill relating to bus fares.

Senator Michelle Kidani: Senator Michele Kidani circulated her written report and noted that a list of bills she introduced were included in the written report.

Representative Ryan Yamane: Representative Yamane stood on his written report. Representative Yamane noted that focus this session will include the building industry and homes 50 years and older, disaster preparedness and Capital Improvement Projects (CIP) policy issues.

Questions, comments and concerns:

1. Central Transportation Study Update: Lee asked and Yamane noted that he is working with the DOT and the City regarding DOT matching the funding. DOT is committed to partner with the City regarding a traffic

MILILANI/WAPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTESWEDNESDAY, JANUARY 22, 2014
PAGE 7 OF 8

study. However, the scope needs more defining. Chair Poirier asked that the Board be consulted prior to decisions on the scoping being made.

2. OMPO: It was recommended that the Board submit a list for area CIP projects.
3. Kamehameha Highway Projects: A Board member noted that the area was surveyed. A far right lane is being added to the H-1 east/west bound. The Pearl City to Waipahu off-ramp to Waikiki. The freeway foundation and rebar are being redone.

Representative Beth Fukumoto: Representative Fukumoto circulated her written report and highlighted traffic, Meheula Parkway and noted that a list of her proposed legislation would be provided next month.

Representative Lauren Matsumoto: Representative Matsumoto introduced her staff and highlighted the following:

- Interns: Representative Matsumoto announced that her office has three (3) interns this session.
- Submitting Testimony: Included in the written report were instructions on how to submit testimony.
- Women in Government Group: Board member Freed was thanked for her involvement with this group.

COMMITTEE AND OTHER REPORTS:

Treasurer's Report: Treasurer Remington reported expenditures of \$26.75 for printing and postage, leaving a balance of \$579.64. The report was filed.

Civil Defense/Military: D. Bass reported that the power plan proposal meeting is scheduled for Wednesday, February 5, 2014 from 6:30 p.m. to 9:30 p.m.

Health & Safety/Public Health: Iuli announced that people 65+ can participate in the YMCA's Silver Sneakers at no cost.

Friends of Mililani Library: Lee announced the Friends of Mililani Library is in need of one (1) board member.

There were no other committee and other reports.

NEW BUSINESS:

Resolution Regarding Mililani Solar South I & II and Waiawa Solar Projects: Thomas read the following: Be it resolved that Mililani/Waipio/Melemanu Neighborhood Board No. 25 supports First Wind's Mililani I and Mililani II and Waiawa solar energy projects, providing that the property used for energy generation remain in agriculture zoning, that the projects support compatible agricultural uses, and that the solar energy equipment is decommissioned and removed within 12 months of the conclusion of operation. **Thomas moved and D. Bass seconded in support of First Wind Solar Group's Planned Solar Energy Facilities in Mililani and Waiwa. The motion was ADOPTED UNANIMOUSLY, 20-0-0 (Aye: Arellano, D. Bass, W. Bass, Dau, Freed, Gallardo-Mata, Gustafson, Iuli, Kaanehe, Lee, Loomis, Nagamine, Park, Poirier, Remington, Segura, Siegel, Svcina, Thomas, and Wong). (See attached).**

Motion: Arellano moved and Lee seconded requesting that the street signage abutting three (3) driveways on Keaoopua Street servicing the entrances to the Opua Hale Patio Homes condominium be installed to permit cars to exit the development safely and without visual hindrance caused by cars parked too close to the driveway entrances

Discussion followed: Remington asked and Arellano clarified that the streets are under City jurisdiction. Arellano added that the red curbing is faded.

The motion requesting that the street signage abutting three (3) driveways on Keaoopua Street servicing the entrances to the Opua Hale Patio Homes condominium be installed to permit cars to exit the development safely and without visual hindrance caused by cars parked too close to the driveway entrances was ADOPTED UNANIMOUSLY, 20-0-0 (Aye: Arellano, D. Bass, W. Bass, Dau, Freed, Gallardo-Mata, Gustafson, Iuli, Kaanehe, Lee, Loomis, Nagamine, Park, Poirier, Remington, Segura, Siegel, Svcina, Thomas, and Wong).

MILILANI/WAPIO/MELEMANU NEIGHBORHOOD BOARD NO. 25
DRAFT-REGULAR MEETING MINUTES

WEDNESDAY, JANUARY 22, 2014
PAGE 8 OF 8

ANNOUNCEMENTS:

- Next Meeting: The next Board meeting will be at Mililani Recreation Center II on Wednesday, February 26, 2014 at 7:30 p.m.
- Video Recordings: Video recordings of Board meeting are scheduled to be shown on 'Olelo Focus 49 every second Thursday at 9:00 a.m.; and on 'Olelo Views 54 every first and third Saturday at 9:00 a.m.

ADJOURNMENT: The meeting adjourned at 9:50 p.m.

Submitted by: Nola J. Frank, Neighborhood Assistant

Reviewed by: Catherine Proctor, Public Relations I

Final Review by: Chair Dick Poirier

RESOLUTION IN SUPPORT OF FIRST WIND SOLAR GROUP'S PLANNED SOLAR ENERGY FACILITIES IN
MILILANI AND WAIAWA

WHEREAS, increasing local renewable energy productions greatly benefits Hawaii's economy, energy sustainability, and the environment; and

WHEREAS, utility-scale solar energy facilities can generate clean energy at significantly lower cost and with less environmental impact than conventional generation; and

WHEREAS, First Wind Solar Group has executed a purchase power agreement with Hawaiian electric to develop a 20-megawatt utility-scale solar energy generation facility know as "Mililani South Solar I"; and

WHEREAS, First Wind Solar Group has also been selected by HECO to develop two (2) other solar energy projects near Mililani, including the 15-megawatt "Mililani South Solar II" and the 47-megawatt "Waiawa Solar"; and

WHEREAS, these three (3) solar energy projects will save O'ahu residents approximately \$200 million on electricity over 20 years through federal tax credits if the projects are completed by 2016; now therefore,

BE IT RESOLVED, that Mililani-Waipio-Melemanu Neighborhood Board No. 25 supports First Wind's Mililani I, Mililani II and Waiawa solar energy projects, providing that the property is used for energy generation in remain in agricultural zoning, that the projects support compatible agriculture uses, and that the solar energy equipment is decommission and removed with in 12 months of the conclusion of operation; and

BE IT FURTHER RESOLVED that copies of this resolution be transmitted to the Governor of the State of Hawaii; members of the Hawaii State Legislature; the Director of the Department of Agriculture; the Director of the Department of Business, Economic Development and Tourism; the Mayor of the City and County of Honolulu; all City Council members; the City and County of Honolulu Departments of Planning and Permitting; First Wind Solar Group; Castle & Cooke; all members of the Mililani Mauka/Launani Valley Neighborhood Board No. 35; and all neighborhood board chairs.

Adopted by Mililani-Waipio-Melemanu Neighborhood Board No. 25 at its regular meeting of January 22, 2014, by a vote of 20-0-0.

Chun, Marisa

From: Wren Wescoatt <[REDACTED]>
Sent: Friday, November 07, 2014 3:05 PM
To: Chang, Corinne
Cc: Yonamine, Kathy; Colon, Michael; Kelly O'Brien; Crystal Kua
Subject: Communicaiton and Outreach

Corinne,

Below is a summary of First Wind's extensive community outreach and communication conducted over the past 12 months to support the solar projects. Please include, as appropriate, in the upcoming PPA filings. Please contact me if I can provide any further information.

Thanks,

Wren

First Wind held more than 100 meetings or presentations with stakeholders – individuals and organizations – since October 2013 to provide information on the development of its planned utility-scale solar projects in Mililani, Waiawa and Kawaiola. This communication program is intended to inform people about the projects and their effects in communities, as well as to gather ideas and suggestions from stakeholders that may improve the projects. Since beginning our wind energy projects on Maui, First Wind has focused on early communication with community members, organizations and representatives. We have found small meetings to be most effective in sharing project information and discussing the importance of renewable energy, and many people have expressed an appreciation for being consulted early about projects that have the potential to affect nearby residents and surrounding communities. This type of communication will expand to include additional groups and individuals, and will continue during the planning and construction of each solar project. As First Wind does with its operating wind energy projects, we will continue to provide periodic updates to the surrounding community throughout the operational life of the project.

First Wind has met with the following stakeholders to discuss the proposed solar projects, grouped into categories below:

Government – Gov. Neil Abercrombie's staff; state Senate and House Energy, Agriculture, and Water/Land Committee chairs and members; individual members of the Hawai'i State Legislature; individual members of the Honolulu City Council Chairs and Committees; state Senate and House Agriculture Committee chairs and members, committees, committee chairs and members of the Hawai'i State Legislature; State Department of Business, Economic Development and Tourism; Land Use Commission Staff; Office of State Planning, City Department of Planning and Permitting, Hawai'i County Research and Development Department.

Community and Business – North Shore Chamber of Commerce, individual members of the North Shore Neighborhood Board, chairs and members of the Mililani Mauka-Launani Valley Neighborhood Board and the Mililani-Waipio Neighborhood board, community associations, Waialua High and Intermediate Foundation, Mililani Middle School STEM Night 2014, Pacific Resource Partnership, North Shore Economic Vitality Partnership.

Native Hawaiian Organizations and Leaders – Office of Hawaiian Affairs, state Department of Hawaiian Home Lands, Waialua Hawaiian Civic Club, Waimea Valley.

Agriculture – Director and staff of the State Department of Agriculture, Dean and faculty of the University of Hawai'i College of Tropical Agriculture, Hawai'i Farm Bureau North Shore Chamber of Commerce Agriculture Committee, North Shore Neighborhood Board Agriculture Committee,

Media – Reporters and editors representing the Honolulu Star-Advertiser, Pacific Business News and Hawai'i News Now.
Environmental – Blue Planet Foundation, the Sierra Club of Hawai'i, Malama Pupukea, North Shore Land Trust.

On January 22, 2014, Neighborhood Board #25 (Mililani/Waipio/Melemanu) passed a resolution in support of all First Wind's proposed solar projects.

EXHIBIT 12
PAGE 64 OF 64

All's Place
1099 Alakea Street | Suite 2440 | Honolulu, HI 96813
O: 808.695.3310 | M: 808.265.6124
Email: ckua@firstwind.com
CLEAN ENERGY. MADE HERE.

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VERIFICATION

STATE OF HAWAII)
CITY AND COUNTY OF HONOLULU) ss.
)

Joseph P. Viola, being first duly sworn, deposes and says: That he is the Vice President-Regulatory Affairs of Hawaiian Electric Company, Inc., Applicant in the above proceeding; that he makes this verification for and on behalf of Hawaiian Electric Company, Inc. and is authorized so to do; that he has read the foregoing Application, and knows the contents thereof; and that the same are true of his own knowledge except as to matters stated on information or belief, and that as to those matters he believes them to be true.

JP Viola
Joseph P. Viola



Subscribed and sworn to before
me this 4th day of December, 2014.

Deborah Ichishita
Notary Public, First Circuit,
State of Hawai'i

My Commission expires July 18, 2016

| | | | |
|----------------------|---|----------|-----|
| Doc. Date: | 12/4/2014 | # Pages: | 403 |
| Name: | DEBORAH ICHISHITA, First Circuit | | |
| Doc. Description: | Application, Exhibits 1-12, Verification and Certificate of Service | | |
| Signature: | <u>Deborah Ichishita</u> 12/4/14 | | |
| Date: | | | |
| NOTARY CERTIFICATION | | | |



**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

**In the Matter of the Application of
HAWAIIAN ELECTRIC COMPANY,
INC.
For Approval of Power Purchase
Agreement for Renewable As-Available
Energy with WAIWA PV, LLC.**

DOCKET NO.

CERTIFICATE OF SERVICE

I hereby certify that I have this date served two copies of the foregoing Application, together with this Certificate of Service, by making personal service to the following and at the following address:

Division of Consumer Advocacy
Department of Commerce and Consumer Affairs
335 Merchant Street, Room 326
Honolulu, Hawai'i 96813

DATED: Honolulu, Hawai'i, December 4, 2014

HAWAIIAN ELECTRIC COMPANY, INC.

Marisa K. Chun

Marisa K. Chun