DRAFT REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

ISLAND OF HAWAI'I

FEBRUARY 2, 2018

Docket No. 2017-0352

Model PV RDG PPA

Attachment B

[Note: The body of the Companies' RDG PPAs for both PV and wind are the same for all three Companies and are therefore not reproduced as part of this exhibit. Some of the attachments to the RDG PPA for both PV and wind are island specific and such island specific attachments for Hawai'i are provided in Exhibit 8 of this Transmittal Letter]

Hawai'i Electric Light

[ATTACHMENT B WILL BE REVISED TO REFLECT THE RESULTS OF IRS]

ATTACHMENT B
FACILITY OWNED BY SELLER

1. The Facility.

(a) Drawings, Diagrams, Lists, Settings and As-Builts.

(i) Single-Line Drawing, Interface Block Diagram, Relay List, Relay Settings and Trip Scheme. A preliminary single-line drawing (including notes), Interface Block Diagram, 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 Interface Block Diagram) and Attachment F (Relay List and Trip Scheme). A final single-line drawing (including notes), Interface Block Diagram, relay list and trip scheme of the Facility shall, after having obtained prior written consent from Company, be labeled "Final" Single-Line Drawing, the "Final" Interface Block Diagram and "Final" Relay List and Trip Scheme and shall supersede Attachment E (Single-Line Drawing and Interface Block Diagram) and Attachment F (Relay List and Trip Scheme) to this Agreement and shall be made a part hereof on the Commercial Operations Date. After the Commercial Operations Date, no changes shall be made to the "Final" Single-Line Drawing, the "Final" Interface Block Diagram and the "Final" Relay List and Trip Scheme without the prior written consent of Seller and Company. The single-line drawing shall expressly identify the Point of Interconnection of Facility to Company System.

(ii) As-Builts. Seller shall provide final as-built drawings of the Seller-Owned Interconnection Facilities within 30 Days of the successful completion of the Acceptance Test.

(iii) No Material Changes. Seller agrees that no material changes or additions to Facility as reflected in the "Final" Single-Line Drawing (including notes), the "Final" Interface Block Diagram and the "Final" Relay List and Trip Scheme, shall be made without Seller first having obtained prior written consent from Company. The foregoing are subject to changes and additions as part of any Performance Standards Modifications. If Company directs any changes in or additions to the Facility, records and operating procedures that are not part of any Performance Standards Modifications, 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 Company System. The Facility shall be accessible at all times to authorized Company personnel.

(ii) The Facility shall include:

[LIST OF THE FACILITY

Examples may include, but not limited to:

- **Seller-Owned Interconnection Facilities**
- **Substation**
- **Control and monitoring facilities**
- **Transformers**
- **Generators (as described in Attachment A)**
- **"lockable" cabinets or housings suitable for the installation of the Company-Owned Interconnection Facilities located on the Site**
- **relays and other protective devices**

- **leased telephone line and/or equipment to facilitate microwave communication]**

(iii) The Facility shall comply with the following **[includes excerpts of language that may be requested by Company]**:

A. Seller shall install a ____ kV disconnect switch and all other items for its switching station (relaying, control power transformers, high voltage circuit breaker). Bus connection shall be made to a manually and automatically (via protective relays) operated high-voltage circuit breaker. The high-voltage circuit breaker shall be fitted with bushing style current transformers for metering and relaying. Downstream of the high-voltage circuit breaker, a structure shall be provided for metering transformers. From the high-voltage circuit breaker, another bus connection shall be made to another pole mounted disconnect switch, with surge protection.

B. Seller shall provide within the Seller-Owned Interconnection Facilities a separate, fenced area with separate access for Company. Seller shall provide all conduits, structures and accessories necessary for Company to install the Revenue Metering Package. Seller shall also provide within such area, space for Company to install its communications, supervisory control and data acquisition ("SCADA") remote terminal unit ("RTU") and certain relaying if necessary for the interconnection. Seller shall also provide AC and DC source lines as specified later by Company. Seller shall provide a telephone line for Company-owned meters. Seller shall 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 cabinet for switching station relaying equipment. Seller shall select and install relaying equipment acceptable to Company. 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 (86), which in turn will trip the main circuit breaker and not allow it to be reclosed without reset.

D. **[RESERVED]**

E. Seller's equipment also shall provide at a minimum:**[COMPANY TO REVISE THIS SECTION PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(i) Interface with Company's RTU, or designated communications and control interface, to provide telemetry of electrical quantities such as total Facility net MW, MVar, power factor, voltages, currents, and other quantities as identified by the Company;

(ii) Interface with Company's RTU, or designated communications and control interface, to provide status for circuit breakers, reactive devices, switches, and other equipment as identified by the Company;

(iii) Interface with Company's RTU, or designated communications and control interface, to provide

control to incrementally raise and lower the voltage target at the point of regulation operating in automatic voltage regulation control. If Company's RTU, or designated communications and control interface, is unavailable, due to loss of communication link, RTU failure, or other event resulting in 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 change in voltage regulation target as directed by the Company System Operator;

(iv) Interface with Company's RTU, or designated communications and control interface, to provide active power control to limit net real power export from the Facility and to remove the limit on net real power export from the Facility. and

(v) For Variable Energy Facilities: Interface with Company's RTU, or designated communications and control interface, to provide telemetry of equipment e availability and meteorological and production data required under Section 8 (Data and Forecasting) of this Attachment B (Facility Owned by Seller) and the Facility's Power Possible.

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 shall be required to obtain Company's prior written approval. If an analysis to revise parts of the IRS is required, Seller shall 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. Critical Infrastructure Protection.

(i) Documentation. Seller shall submit documentation describing the approach, methodology and design to provide physical and cyber security with its submittal of the design drawings pursuant to Section 1(c) (Design Drawings, Bill of Materials, Relay Settings and Fuse Selection) of Attachment B (Facility Owned by Seller) which shall be at least sixty (60) Days prior to the Acceptance Test.

- The design shall meet industry standards and best practices, as indicated by NERC CIP guidelines and requirements for critical generation facilities. The system shall be designed with the criteria to meet applicable industry standards and guidelines (at the time of this writing, NERC CIP, or any future standard adopted by the industry in its place) compliance requirements and identify areas that are not consistent with NERC CIP guidelines and requirements.

- The cyber-security documentation shall include a block diagram of the control system with all external connections clearly described.

- Seller shall provide such additional information as Company may reasonably request as part of a security posture assessment.

- Company shall be notified in advance when there is any condition that would compromise physical or cyber security, or if any breaches in security, or security incidents are detected.

(ii) Malware. Seller shall (consistent with the following sentence) ensure that no malware or similar items are coded or introduced into any aspect of the Facility, Interconnection Facilities, the Company Systems interfacing with the Facility and Interconnection Facilities, and any of Seller's critical control systems or processes used by Seller to provide energy, including the information, data and other materials delivered by or on behalf of Seller to Company, (collectively, the "Environment"). Seller will continue to review, analyze and implement improvements to and upgrades of its Malware prevention and correction programs and processes that are commercially reasonable and consistent with the then current technology industry's standards and, in any case, not less robust than the programs and processes implemented by Seller with respect to its own information systems. If Malware is found to have been introduced into the Environment, Seller will promptly notify Company and Seller shall take immediate action to eliminate and remediate the effects of the Malware, at Seller's expense. Seller shall not modify or

otherwise take corrective action with respect to the Company Systems except at Company's request. Seller will promptly report to Company the nature and status of all Malware elimination and remediation efforts.

(iii) Security Breach. In the event that Seller discovers or is notified of a breach, potential breach of security, or security incident at Seller's Facility or of Seller's systems, Seller shall immediately (i) notify Company of such potential, suspected or actual security breach, whether or not such breach has compromised any of Company's confidential information, (ii) investigate and promptly remediate the effects of the breach, whether or not the breach was caused by Seller, (iii) cooperate with Company with respect to any such breach or unauthorized access or use; (iv) comply with all applicable privacy and data protection laws governing Company's or any other individual's or entity's data; and (v) to the extent such breach was caused by Seller, provide Company with reasonable assurances satisfactory to Company that such breach, potential breach, or security incident shall not recur. Seller shall provide documentation to Company evidencing the length and impact of the breach. Any remediation of any such breach will be at Seller's sole expense.

(iv) Monitoring and Audit. Seller's shall provide information on available audit logs and reports relating to cyber and physical and security. Company may audit Seller's records to ensure Seller's compliance with the terms of this

Section 1(b)(iii)G (Critical Infrastructure Protection) of this Attachment B (Facility Owned by Seller), provided that Company has provided reasonable notice to Seller and any such records of Seller's will be treated by Company as confidential.

H. Seller's available power production considering equipment and resource availability (Potential Energy)Power Possible will be determined at any given time using the best-available data and methods for an accurate representation of the amount of active power at the point of interconnection. To the extent available, the Parties shall use Seller's real time Potential Energy (Power Possible) communicated to Company through the SCADA System except to the extent that the Potential Energy does not accurately reflect the actual available active power at the point of interconnection (plus or minus 0.1 MW.) During those periods of time when the SCADA derived (Power Possible) Potential Energy is unavailable, or does not accurately represent Potential Energy, the Parties shall use the best available data obtained through Commercially Reasonable methods to determine the Power Possible. Follow up actions to resolve the discrepancy will be as provided in Section 1(j) (Demonstration of Facility) of this Attachment B (Facility Owned by Seller).

I. Seller shall reserve space within the Site for possible future installation of Company-owned meteorological equipment (such as wind speed, direction and relative humidity monitors, SODAR and irradiance monitors) and AC and DC source lines for such equipment. In the event Company decides to install such meteorological equipment: (i) Seller shall work with Company to determine an acceptable location for such equipment and any associated wiring, interface or other components; and (ii) Company shall pay for the needed equipment, and installation of

such equipment, unless otherwise agreed to by the Parties. Company and Seller shall use commercially reasonable efforts to facilitate installation and minimize interference with the operation of the Facility.

J. The Facility shall, at a minimum, satisfy the wind load and seismic load requirements of the International Building Code and any more stringent requirements imposed under applicable Laws.

(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 and 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) [RESERVED]

(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. **[COMPANY TO REVISE THIS SECTION 1(E) PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(f) Maintenance Plan. Seller shall maintain Seller-Owned Interconnection Facilities in accordance with the following maintenance plan:

Transmission line: _____

___ kV Facility switching station: _____

Relay protection equipment: _____

Other equipment as identified: _____

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

(g) Active Power Control Interface. **[COMPANY TO REVISE THIS SECTION PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(i) Seller shall provide and maintain in good working order all equipment, computers and software associated with the control system (the "Active Power Control Interface") necessary to interface the Facility active power controls with the Company System Operations Control Center for real power control of the Facility by the Company System Operator. The Active Power Control Interface will be used to control the net real power export from the Facility as required under this Attachment B (Facility Owned by Seller). The implementation of the Active Power Control Interface will allow Company System Operator to initiate the active power limiting, vary the level of limiting, and remove the limiting 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 Active Power Control Interface to ensure compatibility with Company's centralized control systems. In order to ensure such continued compatibility, Seller shall not materially change the approved design without Company's prior review and prior written approval.

(iii) The Active Power 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, located in Company's portion of the Facility switching station which shall provide the control signals to the Facility and send feedback status to the Company System Operations Control Center. The control type shall be analog output (set point) or raise/lower controls and will be mutually agreed to prior to final design approval.

(iv) The Active Power Control Interface shall also include provision for feedback points from the Facility indicating when active power limiting is in effect and the analog value of the MW limit(s). The Facility shall provide the feedback to the Company SCADA system immediately upon receiving the respective control signal from the Company.

(v) Seller shall provide to the telemetry interface an analog signal for the MW gross production of each individual generating unit, and an analog signal for the total net MW production at the Point of Interconnection.

(vi) The Active Power Control Interface shall provide for remote control of the real-power output of the Facility by the Company at all times. If the Active Power Control Interface is unavailable or disabled, the Facility shall not export electric energy to Company, unless the Company, in its sole discretion, agrees to accept electric energy and Seller

and Company agree on an alternate means of dispatch. If Seller fails to provide such remote control capability (whether temporarily 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 derate or disconnect the entire Facility during those periods that such control capability is not provided.

(vii) The rate at which the Facility changes net real power export in response to active power control shall not be less than the greater of 2 MW per minute or such faster ramp as the installed equipment can support. The Facility's Active Power Control Interface will control the rate at which electric energy is changed to achieve the active power limit. The Facility will respond to the active power control request immediately with an echo of the set point and measurable change within the 4 second control cycle. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY TO REFLECT SYSTEM REQUIREMENTS]**

(viii) The Active Power Control Interface shall accept the following active power control(s) from the Company centralized central system:

- Maximum Power Limit: The Facility is not allowed to exceed this setting under any circumstances. The frequency response control specified in Section 3(m) (Frequency Response) of Attachment B (Facility Owned by Seller) is not allowed to increase the Facility's net real power export above this limit. When the Maximum Power Limit is set to zero, the Facility's WTGS(s) must be shutdown. **[Applicability subject to Company review].**
- Available maximum capacity: (see above, instantaneous limit for available energy, represents max level the Facility can produce (lfcmx, ecomx).

- Minimum sustained limit: minimum output level the Facility can be reduced to continuously without delay (ecomn).
- Minimum transient limit (for frequency response, regulation) (lfcmn).
- Maximum dispatchable ramp rate – controlled ramp rate available for controlled changes in output.

(ix) Seller shall not override Company's active power controls without first obtaining specific approval to do so from the Company System Operator unless there is a system emergency. , Disabling of the remote Active Power Control shall initiate telemetry notification to the Company.

(x) The requirements of the Active Power Control Interface may be modified as mutually agreed upon in writing by the Parties.

Active Power Communications between Company and Seller

Company will receive and send AGC Set-Point and related data over an analog or digital line. The data points covered under this PPA, as described below, may overlap data requirements described elsewhere..

AGC Data Points to be sent from Seller to Company via SCADA

The following data points will be transmitted via SCADA from Seller to Company and represent Facility level data:

Description	Units
AGC Set-Point (echo)	MW
Power demand	MW
Actual power	MW
Park Potential	MW
Actual reactive power	Mvars
Average Voltage	kV

AGC Status	Remote/Local

Response times and limitations of Facility in regards to Active Power Control

The following protocols outline the expectations for responding to the AGC Set-Point.

Range of AGC Set-Point. The range of set point values can be between 0% and 100% of Power Possible (Available Power, or whatever term is selected).

Backup Communications

In the event of an AGC failure, Company and Seller shall communicate via telephone in order to correct the failure.

DATA COLLECTION

Seller shall install at least _____ meteorological tower(s), spaced so as to provide the data points set forth below for the entire Facility. At least two months prior to the Commercial Operation Date, Seller shall deliver to Company a report showing (i) manufacturer, model and year of all panels, inverters and meteorological instrumentation, and (ii) the latitude and longitude of the center of the solar panels for every inverter and every meteorological tower. Beginning upon COD, Seller shall transmit and provide to Company the real-time data set forth below, refreshed as frequently as allowed by the SCADA System, not to exceed sixty (60) second intervals:

- Two (2) data points from each inverter:
  - Inverter generation (kW)
  - Inverter availability
- Five (5) data points from each meteorological tower:
  - Direct normal solar insolation (solar intensity)
  - Temperature
  - Barometric pressure
  - Wind speed (meters per second)
  - Wind direction (degrees relative to true north)

Seller shall provide a map and key for each inverter sufficient to allow Company to correlate the data received through Company's data historian system to each individual inverter.

* * * *

(h) Control System Acceptance Test Procedures.

(i) Conditions Precedent. The following conditions precedent must be satisfied prior to the conduct of the Control System Acceptance Test:

- Successful Completion of the Acceptance Test.
- Facility has been successfully energized.
- All of the Facility's generators have been fully commissioned.
- The control system computer has been programmed for normal operations.
- All equipment that is relied upon for normal operations (including ancillary devices such as capacitors/inductors, energy storage device, statcom, etc.) shall have been commissioned and be operating within normal parameters.

(ii) Facility Generators. Unless all of the Facility's generators are available for the duration of the Control System Acceptance Test, the Control System Acceptance Test will have to be re-run from the beginning unless Seller demonstrates to the satisfaction of the Company that the test results attained with less than all of the Facility's generators are consistent with the results that would have been attained if all of the Facility's generators had been available for the duration of the test.

(i) Procedures. The Control System Acceptance Test will be conducted on Business Days during normal working hours on a mutually agreed upon schedule. No Control System Acceptance Test will be scheduled during the final 21 Days of a calendar year. 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 completion of the Control System Acceptance Test, Company shall notify Seller in writing whether the Control System Acceptance Test(s) has been passed and, if so, the date upon which such Control System Acceptance Test(s) was passed. If any changes have been made to the technical specifications of the Facility or the design of the Facility in accordance with Section 5(f) of Attachment A (Description of Generation and Conversion Facility), such changes shall be reflected in an amendment to this Agreement, and the written protocol for the Control Systems Acceptance Test shall be based on the Facility as modified. Such Amendment shall be executed prior to conducting the Control System Acceptance Test and Company shall have no obligation for any delay in performing the Control Systems Acceptance Test due to the need to complete and execute such amendment.

(i) Facility Security and Maintenance. Seller is responsible for securing the Facility. Seller shall have personnel available to respond to all calls related to security incidents and shall take commercially reasonable efforts to prevent any security incidents. Seller is also responsible for maintaining the Facility, including vegetation management, to prevent security breaches. Seller shall comply with all commercially reasonable requests of Company to update security and/or maintenance if required to prevent security breaches.

(j) Demonstration of Facility. Company shall have the right at any time, other than during maintenance or other special conditions communicated by Seller, to notify Seller in writing of Seller's failure, as observed by Company and set forth in such written notice, to meet the operational and performance requirements specified in Section 1(b)(iii)(H), Section 1(g) (Active Power Control Interface) and Section 3 (Performance Standards) of this Attachment B (Facility Owned by Seller), and to require

documentation or testing to verify compliance with such requirements. Upon receipt of such notice, Seller shall promptly investigate the matter, implement corrective action and provide to Company, within thirty (30) Days of such notice, a written report of both the results of such investigation and the corrective action taken by Seller. If the Seller's report does not resolve the issue to Company's satisfaction, the Parties shall promptly commission a study to be performed by one of the engineering firms then included on the OEPR Consultants List to evaluate the cause of the non-compliance and to make recommendations to remedy such non-compliance. Seller shall pay for the cost of the study. The study shall be completed within ninety (90) days, unless otherwise agreed to in writing by Seller and Company. The consultant shall send the study to Company and Seller. Seller (and/or its Third-Party consultants and contractors), at Seller's expense, shall take such action as the study shall recommend with the objective of resolving the non-compliance. Such recommendations shall be implemented by Seller to Company's reasonable satisfaction no later than forty-five (45) Days from the Day the completed study is issued by the consultant, unless otherwise agreed to in writing by Company. Failure to implement such recommendations within this period shall constitute a material breach of this Agreement.

2. Operating Procedures. **[NOTE: NUMERICAL SPECIFICATIONS IN THIS SECTION 2 MAY VARY DEPENDING ON THE SPECIFIC PROJECT AND THE RESULTS OF THE PROJECT SPECIFIC INTERCONNECTION REQUIREMENT STUDY.]**

(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 Company deems 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 Company System whenever requested to do so by the Company System Operator pursuant to Article 8 (Company Dispatch) 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 six (6) years.

(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) Reserved.

(f) Reserved.

(g) Critical Infrastructure Protection. Seller shall comply with the critical infrastructure protection 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 the [_____] circuit is in normal operating configuration served by breaker [_____] at [____] Substation. **[TO BE DETERMINED BY COMPANY BASED ON THE RESULTS AND REQUIREMENTS OF THE IRS]**

3. Performance Standards.

(a) Reactive Power Control. Seller shall control its reactive power by automatic voltage regulation control. Seller shall automatically regulate voltage at a point, the point of regulation, between the 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 to the extent allowed by the Facility reactive power capabilities as defined in Section 3(b)(Reactive Amount) of this Attachment B (Facility Owned by Seller).

(b) Reactive Amount. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS.**]

(i) The Facility must deliver power up to the Allowed Capacity at a power factor between 85% lagging and 90% leading to the Company System as illustrated in the **[generator capability]** curve(s) attached to this Agreement as Exhibit B-2 (Generator Curve(s)). The Facility generators must be capable of automatically adjusting reactive control to maintain the bus voltage at the Point of Interconnection to meet the scheduled voltage set point target specified by the Company System Operator. The voltage target will be specified remotely by the Company System Operator through the SCADA/EMS. The Facility's voltage set point target must reflect the Company voltage set point target controlled from the SCADA/EMS, without delay. The generator should not normally operate on a fixed var or fixed power factor unless agreed by Company. The voltage setpoint target, and present Facility minimum and maximum reactive power limits based on the Facility real power export and the generator capability curve(s) shall be provided to the Company EMS through the RTU telemetry interface The Facility must deliver power up to the Allowed Capacity at a power factor between 85% lagging and 90% leading to the Company System as illustrated in the **[generator capability]** curve(s) attached to this Agreement as Exhibit B-2 (Generator Curve(s)). The Facility generators must be capable of automatically adjusting reactive control to maintain the bus voltage at the Point of Interconnection to meet the scheduled voltage set target specified by the Company System Operator. The voltage target will be specified remotely by the Company System Operator through the SCADA/EMS. The Facility's voltage must reflect the Company voltage target controlled from the SCADA/EMS, without delay. The generator should not normally operate on a fixed var or fixed power factor unless agreed by Company. The voltage target, and present Facility minimum and maximum reactive power limits based on the Facility real power export and the generator capability curve(s)

shall be provided to the Company EMS through the RTU telemetry interface

(ii) 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 changes. 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 voltage control target will be achieved within 1 second following a step change.

(iii) If the Facility does not operate in accordance with Section 3(b)(i) of this Attachment B (Facility Owned by Seller), Company may 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.

(i) Seller shall ensure that the ramp rate of the Facility is less than the following limits for all conditions other than those under control of the Company System Operator or those due to desired frequency response, including start up, changes in the solar resource, 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 of uncoordinated changes in output in response to changes in resource.

- Maximum Ramp Rate Downward of 2 MW/minute for all periods of uncoordinated changes in output in response to changes in resource.

- Maximum ramp rate for shutdown/startup other than requested by System Operator (such as high wind speed shutdown, startup due to resource availability) 2 MW/minute. Plant operator should notify System Operator of equipment startup/shutdown by method agreed by Company.

(ii) Upon receiving a command from the Company active power limit control(s) described in Section 1(g)(viii) of this Attachment B (Facility Owned by Seller), Seller shall adjust the Facility's net real power export to the extent allowed by the solar resource without exceeding such ramp without intentional delay.

(iii) 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 response control described in Section 3(m) (Frequency Response) of this Attachment B (Facility Owned by Seller).

(d) Ride-Through.

Ride-Through requires that the resource continues to inject current within the “No Trip” zone of the voltage and frequency ride-through regions. Unless approved during the Interconnection Requirements Study analysis, resources should not use “momentary cessation” within the ride-through regions.

(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). For alarm conditions the Facility should not disconnect from the Company System unless the Facility’s equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System. **[THESE VALUES MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS. WITHOUT LIMITATION, FOR A DISTRIBUTION-CONNECTED FACILITY, UPON COMPLETION OF THE IRS THE COMPANY MAY SPECIFY REQUIREMENTS FOR A MANDATORY DISCONNECTION FROM THE COMPANY SYSTEM.]**:

$0.80 \text{ pu} \leq V \leq 1.00 \text{ pu}$	The Facility remains connected to the Company System and in continuous operation.

0.00 pu ≤ V < 0.80 pu	The Facility remains connected to the Company System and in continuous operation for a minimum of 600 milliseconds per event(while “V” remains in this range). The Facility may initiate an alarm if “V” remains in this range for more than _600_ milliseconds; the duration of the event is measured from the point at which the voltage drops below 0.80 pu. and ends when the voltage is at or above 0.80 pu. The 600 milliseconds represents a delayed clearing time of 30 cycles plus breaker opening time.

Protective Undervoltage Relaying (27) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility’s equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

Seller shall have sufficient capacity to fulfill the above mentioned requirements to ride-through subsequent events 300 cycles or more apart, between which the voltage at the POI recovers above 0.80 p.u.

[THE ACTUAL RIDE-THROUGH TIMES WILL BE DETERMINED BY COMPANY IN CONNECTION WITH THE IRS]:

(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). For alarm conditions the Facility should not disconnect from the Company System unless the Facility’s equipment is at risk of damage. This is

necessary in order to coordinate with the existing Company System. **[THESE VALUES MAY BE CHANGED BY THE COMPANY UPON COMPLETION OF THE IRS. WITHOUT LIMITATION, FOR A DISTRIBUTION-CONNECTED FACILITY, UPON COMPLETION OF THE IRS THE COMPANY MAY SPECIFY REQUIREMENTS FOR A MANDATORY DISCONNECTION FROM THE COMPANY SYSTEM AT V > 1.2 pu.] RIDE-THROUGH REQUIREMENTS FOR OTHER SYSTEMS WILL BE DETERMINED IN THE IRS.]**:

1.00 pu < V ≤ 1.10 pu	The Facility remains connected to the Company System.
1.10 pu < V ≤ 1.15 pu	The Facility remains connected to the Company System and in continuous operation no less than 30 seconds; the duration of the event is measured from the point at which the voltage increases at or above 1.1 pu and ends when voltage is at or below 1.1 pu.
V > 1.15 pu	The Facility remains connected to the Company System and in continuous operation for as long as possible as allowed by the equipment operational limitations (i.e.; the generator manufacturer's recommended time interval).

Protective Overvoltage Relaying (59) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

(g) Transient Stability Ride-Through.

The Facility shall be designed such that the transient stability of Company System is maintained for normally cleared and secondarily cleared faults. The Facility will be required to remain connected through anticipated

rates of change of frequency **[TO BE PROVIDED UPON COMPLETION OF IRS].**

(h) [RESERVED]

(i) Underfrequency ride-through.

The Facility shall meet the following underfrequency ride-through requirements during an underfrequency disturbance, and export of power shall continue with output adjusted as appropriate for Facility droop response specified in Section 3(m) (Frequency Response) of this Attachment B (Facility Owned by Seller) ("f" is the Company System frequency at the Point of Interconnection):

57.0 Hz ≤ f ≤ 60.0 Hz	The Facility remains connected to the Company System and in continuous operation.
56.0 Hz ≤ f < 57.0 Hz	The Facility remains connected to the Company System and in continuous operation for at least six (6)] seconds per event. The duration of the event is from the point at which the frequency is below 57 Hz and ends when the frequency is at or above 57 Hz. The Facility may initiate an alarm if frequency remains in this range for more than six (6)] seconds.
f < 56.0 Hz	The Facility remains connected to the Company System and in continuous operation for the duration allowed by the equipment operational limitations. The Facility may initiate an alarm immediately.

Protective Underfrequency Relaying (81U) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage.

This is necessary in order to coordinate with the existing Company System.

(j) Overfrequency ride-through.

The Facility will behave as specified below for overfrequency conditions, and export of power shall continue with output adjusted as appropriate for Facility droop response specified in Section 3 (m) (Frequency Response) ("f" is the Company System frequency at the Point of Interconnection):

60.0 Hz ≤ f ≤ 61.5 Hz	The Facility remains connected to the Company System and in continuous operation.
61.5 Hz ≤ f ≤ 63.0 Hz	The Facility remains connected to the Company System for at least ten_(10) seconds. After ten seconds the Facility may initiate an alarm and the Facility remains connected and producing power for the duration allowed by the equipment operational limitations. The duration of condition is from the point at which the frequency is above 61.5 Hz and ends when the frequency is at or below 61.5 Hz.
f > 63.0 Hz	The Facility remains connected to the Company System for the duration allowed by the equipment operational limitations. The Facility may initiate an alarm immediately.

Protective Overfrequency Relaying (81O) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility’s equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

(k) Voltage Flicker.

Any voltage flicker on the Company System caused by the Facility shall not exceed the limits stated in IEEE Standard 1453-2011, or latest version "Recommended Practice – Adoption of IEC 61000-4-15:2010, Electromagnetic compatibility (EMC) – Testing and measurement techniques – Flickermeter – Functional and design specifications".

(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 Response.

Seller Facility shall provide a primary frequency response with a frequency droop characteristic reacting to system frequency at the Point of Interconnection in both the overfrequency and underfrequency directions except as limited by the minimum and maximum available capacity at the time of the event. Minimum operational limit for each online turbine is to be supplied.

(i) Nominal System Frequency is 60.00 Hz.

(ii) The droop setting should permit a setting from 0.1 to 10%. This setting shall be changed upon Company’s written request as necessary for grid droop response coordination. The droop setting shall be tunable and may be specified during commissioning, the nominal setting is 4%. The Seller shall make commercially reasonable efforts to provide frequency response without an intentional deadbandbut in any case is not to exceed +/- 0.0166 Hz . The droop response shall provide [80-100%] of expected (proportional) active power output at the end of a linear ramp change in frequency of [1% (0.6 Hz)] over a [5] second period starting at the initial frequency deviation. . [80%] of the

desired response has to be delivered within [2] seconds after disturbance, and full response must be deployed within an additional [3] seconds after an initial [2] seconds for a total response within [5] seconds after the disturbance. When operating in parallel with the Company System, the Facility shall operate with its speed governor control in automatic operation. Notification of changes in the status of the speed/load governing controls must be provided to the Company System Operator immediately preferably through SCADA.

(iii) The Facility frequency response control shall adjust, without intentional delay and without regard to the ramp rate limits in Section 3(c)(Ramp Rates) of this Attachment B (Facility Owned by Seller), the Facility's net real power export when system frequency is not 60 Hz based on frequency deadband and frequency droop settings specified by the Company.

(iv) The Facility frequency response control shall be allowed to increase the net real power export above the Power Reference Limit set under Section 1(g)(viii) of this Attachment B (Facility Owned by Seller) or further decrease the net real power export from the Power Reference Limit in its operations.

(v) The Facility frequency response control shall be in continuous operation when the Facility is exporting energy to the Company unless directed otherwise by the Company.

(n) Provision of Synthetic Inertia.

[TO BE DETERMINED BASED ON IRS.]

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 the removal of __ MW or more from Company System and/or disconnection of the Facility from the Company's System through the interconnecting

breakers that is not the result of Company dispatch, frequency droop response, or isolation of the Facility resulting from designed protection fault clearing.

(b) For every disconnection from the Company System Seller shall investigate the cause . Within three (3) Business Days Seller shall provide, in writing to Company, an incident report that summarizes the sequence of events and probable cause. A disconnection from the Company System of _ mw is considered a Disconnection Event.

(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 dispatch 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 Hawai‘i (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. Within 30 Days of Company's written request, but 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 WTGS(s) and any other equipment within the

Facility identified in the IRS which utilizes Source Code (such as energy storage system, STATCOM or DVAR equipment), including, but not limited to, integrated and validated power flow and transient stability models (such as PSS/E models), a short circuit model (such as an ASPEN model), and an electro-magnetic transient model (such as a PSCAD model) of the WTGS(s) and any additional equipment identified in the IRS as set forth above, applied assumptions, and pertinent data sets (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 (i) Company's written request, or (ii) Seller obtaining knowledge or notice that any Required Model has been modified, updated or superseded by the Source Code Owner.

(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 ensure that 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. Seller shall be responsible for all costs associated with establishing and maintaining the Source Code Escrow. 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 ensure 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 ensure the update of the deposited Source Code and relevant documentation for Major Releases and Minor Releases of the Required Models as soon as reasonably possible after they are made generally available.

(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 Company finds that Seller failed to arrange for and ensure the update the Source Code Escrow with the modified and/or updated Source Code and relevant documentation for Major Releases and Minor Releases of the Required Models as provided in Section 6(b)(i) (Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller) or that the Source Code for the Required Models is incomplete or otherwise unusable, Seller shall be liable to Company for liquidated damages in the amount of $500 per day for each day Seller fails to provide such Source Code to Company or such update to the Source Code to Company from the date such Major Release or Minor Release was first made available by the Source Code Owner to customers of the Source Code Owner. Failure to provide the updated Source Code of the Required Models within 30 Days' notice from Company of a breach of Section 6(b)(i)(A)

(Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller) shall constitute an Event of Default pursuant to Section 15.2(F) (Events of Default by a Party) under the Agreement.

(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 Hawaii Electric Light Company, Inc. ("Hawaii Electric Light"), and (ii) Hawaii 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 Hawaii Electric Light.

(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 the Required Models and their relevant Source Code are not provided to the Company in the form of Source Code pursuant to Section 6(a) (Seller's Obligation to Provide Models) 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 provide an irrevocable standby letter of credit with no documentation requirement in the amount of Two Hundred Fifty Thousand Dollars ($250,000) per Required Model (and its relevant Source Code)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 . Such letter of credit 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. The letter of credit shall include a provision for at least thirty (30) Days advance notice to Company of any expiration or earlier termination of the letter of credit so as to allow Company sufficient time to exercise its rights under said security if Seller fails to extend or replace the 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.

(B) Release Conditions. Company shall have the right to draw on the letter of credit the funds necessary to develop and recreate the Required Model or Required Models upon Company's request 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) Extend Letter of Credit. If the letter of credit is not renewed or extended no later than thirty (30) Days prior to its expiration or earlier termination, Company shall have the right to draw immediately upon the full amount of the letter of credit and to place the proceeds of such draw (the "Proceeds"), at Seller's cost, in an escrow account in accordance with Section 6(b)(ii)(D) (Proceeds Escrow), until and unless Seller provides a substitute form of letter of credit meeting the requirements of this Section 6(b)(ii) (Monetary Escrow) of this Attachment B (Facility Owned by Seller).

(D) Proceeds Escrow. If Company draws on the letter of credit pursuant to Section 6(b)(ii)(C) (Extend Letter of Credit) of this Attachment B (Facility Owned by Seller), Company shall, in order to avoid comingling the Proceeds, have the right but not the obligation to place the Proceeds in an escrow account as provided in this Section 6(b)(ii)(D) (Proceeds Escrow) of this Attachment B (Facility Owned by Seller) with a reputable escrow agent acceptable to Company ("Escrow Agent"). Without limitation to the generality of the foregoing, a federally-insured bank shall be deemed to be a "reputable escrow agent." Company shall have the right to apply the Proceeds as necessary to recover amounts Company is owed pursuant to this Section 6 (Modeling) of this Attachment B (Facility Owned by Seller). To that end, the documentation governing such escrow account shall be in form and content satisfactory to Company and shall give Company the sole authority to draw from the account. Seller shall not be a party to such documentation and shall have no rights to the Proceeds. Upon full satisfaction of Seller's obligations under Section 6 (Modeling) of this Attachment B (Facility Owned by Seller), Company shall instruct the Escrow Agent to remit to the bank that issued the letter of credit that was the source of the Proceeds the remaining balance (if any) of the Proceeds. If there is more than one escrow account with Proceeds, Company may, in its sole discretion, draw on such accounts in any sequence Company may select. Any failure to draw upon the Proceeds for any damages or other amounts due Company shall not prejudice Company's rights to recover such damages or amounts in any other manner.

(E) Seller's Obligation. If the letter of credit is 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.

(F) 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 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.

(G) Certification. The terms of the letter of credit shall provide for a release of the funds, or in the event the funds have been placed into a Proceeds Escrow, the 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 Hawaii Electric Light Company, Inc. ("Hawaii Electric Light"), and (ii) Hawaii Electric Light 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 Hawaii Electric Light.

(H) Authorized Use. If Company becomes entitled to a release of funds from escrow, 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. Testing Requirements.

(a) Testing Requirements. Once the Control System Acceptance Test has been successfully passed, Seller shall not replace and/or change the configuration of the Facility Control, **inverter control settings** and/or ancillary device controls, without prior written notice to Company. In the event of any such replacement and/or change, the relevant test(s) of the Control System Acceptance Test shall be redone and must be successfully passed before the replacement or altered equipment is allowed to be placed in normal operations. In the event that Company reasonably determines that such replacement and/or change of controls makes it inadvisable for the Facility to continue in normal operations without a further Control Systems Acceptance Test, the Facility shall be deemed to be in Seller-Attributable Non-Generation status until the new relevant tests of the Control System Acceptance Test have been successfully passed.

(b) Periodic Testing. Seller shall coordinate periodic testing of the Facility with Company to ensure that the Facility is meeting the performance standards specified under this Agreement.

8. Data and Forecasting.

Seller shall provide Site, meteorological and production data in accordance with the terms of Article 6 (Forecasting) of this Agreement and the following requirements:

(i) Physical Site Data: Seller shall provide Company with an accurate description of the physical Site,

including but not limited to the following, which may not be changed during the Term without Company's prior written consent:

A. Location Facility Map showing the layout of the Facility (coverage area or footprint) and the coordinates (latitude and longitude), elevation (above ground), 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 each field measurement device located on such MMS.

C. Inverter type, power rating, array configuration to inverters and DC rating of the Facility at the following standard test conditions: irradiance of 1000 W/m^2, air mass 1.5, and cell temperature 25° C.

D. Solar generation technology employed at the Facility with temperature dependence, mounting and module type.

(ii) Meteorological and Production Data:

A. Seller shall install and maintain a minimum of one MMS for facilities with a Contract Capacity of less than 5 MW and a coverage area of not more than one square kilometer.

B. Seller shall install and maintain a minimum of two MMS for facilities that have either (i) a DC rating of the Facility of 5 MW or greater or (ii) a coverage area greater than one square kilometer.

C. Placement of each MMS should account for the microclimate of the area and Facility coverage area and shall be oriented with respect to the primary wind direction.

D. For purposes of calculating the Measured Performance Ratio, the Seller shall provide (i) Plane of Array irradiance, (ii) back of panel temperature at array height, and (iii)

the power production at the transducer on the Seller's side of the Point of Interconnection.

E. Seller shall provide to Company, via SCADA communication and protocol acceptable to Company to support operations and forecasting needs at a continuous scan, all meteorological and production data required under this Agreement updated every 2 seconds.

F. Seller shall arrange for a dedicated 12 kV line to provide separate service from Company, or for such other independent, backup power source as approved by Company in writing, to temporarily store and record the meteorological data from the field measuring devices at the MMSs. Any such backup power source must be capable of providing power for the field measurement devices for a reasonable period of time until primary power is restored. The same backup power source can serve multiple MMSs as needed by the Facility.

(iii) Units and Accuracy:

A. The Table below shows minimum required solar irradiance measurements for various types of solar generation technology. **[DRAFTING NOTE:** This value may not be derived.

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

Table of Units and Accuracy of Meteorological and Production Data (PV)

Parameter	Data Source	Unit	Range	Accuracy
Global Horizontal Irradiance at MMS	Pyranometer or equivalent	W/m^2	0 to 1500 W/m^2	Secondary standard per ISO 9060 or <= 3% from 100 W/m^2 to 1500 W/m^2 if using a PV Reference Cell
Plane of Array Irradiance on same axis as array	Pyranometer or equivalent	W/m^2	0 to 1500 W/m^2	Secondary standard per ISO 9060 or <= 3% from 100 W/m^2 to 1500 W/m^2 if using a PV Reference Cell
Back of Panel temperature at array height	Temperature probe	ºC	-20 to +50 ºC	+/-1 ºC
Ambient air temperature at MMS	Temperature probe	ºC	-20 to +50 ºC	+/-1 ºC
Ambient air pressure at MMS	Piezoresistive transducer or equivalent	mbar	150 to 1150 mbar	+/-60 mbar (0 to +50ºC)
Wind speed at MMS	Anemometer, sonic device or equivalent	mph	0 to 134 mph	+/-1 mph
Wind direction at MMS	Vane, sonic device or equivalent	Degrees (from True North)	360º	+/-5º
Set point for each inverter	Reported by Seller	MW	0 to inverter name plate	Not applicable
Power production of Facility	Measured at Facility's analog transducers on Seller's side of	MW	-20% to 120% of Allowed Capacity	The lesser of the tolerances of the

	POI			communication / telemetry equipment or 2% of measurement
Facility power production ratio	Ratio of Facility's power production (MW)/Allowed Capacity (MW)	%	0 to 100%	+/-0.1%
Inverters Available	NA	NA	Up to the number installed inverters	
Facility Inverter Availability	Ratio of inverters online/number of inverters	%	0 to 100%	
Power Possible	Seller’s Model	MW	0 to 120% of Allowed Capacity	+/0.1 MW

(iv) Status of Inverters for Purposes of Calculating Facility Availability:

For each inverter, Seller shall, unless agreed otherwise by Company and Seller in writing, provide to Company, via SCADA communication and protocol acceptable to Company at a continuous scan updated not less frequently than every 2 seconds, a signal as to whether such inverter is available or unavailable.

9. Technology Specific Requirements.

(a) Three-Phase Synchronous Generators.

The generating facility circuit breakers shall be 3-phase devices with electronic or electromechanical control. The Seller shall be responsible for properly synchronizing its generating facility with the Company System by means of either a manual or automatic synchronizing function. Automatic synchronizing is required for all synchronous generators which have an short circuit current rating ("SCCR") greater than 5%. For a generating facility whose SCCR exceeds 5%, the Facility shall provide protective equipment suitable for detecting loss of synchronism and automatically disconnecting the generating facility from the Company

System. Unless otherwise agreed to between the Company and Seller, synchronous generators shall automatically regulate power factor, not voltage, while operating in parallel with the Company System.

(b) Induction Generators.

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

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

(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. Operating Committee and Operating Procedures

Company and Seller shall each appoint one representative and one alternate representative to act as the Operating Committee in matters relating to the Parties' performance obligations under this PPA and to develop operating arrangements for the generation, delivery and receipt of Renewable Energy from the Facility. The Parties' initial representatives on the Operating Committee are set forth in XXXX

The Operating Committee may develop mutually agreeable written Operating Procedures consistent with the requirements of this PPA, to address matters such as day-to-day communications; key personnel; operations-center interface; metering, telemetering, telecommunications, and data acquisition procedures; operations and maintenance scheduling and reporting; reports; operations log; testing procedures; and such other matters as may be mutually agreed upon by the Operating Committee.

The Operating Committee shall review the requirements for Active Power Control and the Data Collection and Telemetry from time to time after the date hereof and may agree on modifications thereto to the extent necessary or convenient for operation of the Facility in accordance with this PPA.

The Operating Committee shall have authority to act in all technical and day-to-day operational matters relating to performance of this PPA and to attempt to resolve potential disputes, provided, however, that except as explicitly provided herein, the Operating Committee shall have no authority to amend or waive any provision of this PPA.

EXHIBIT B-1
REQUIRED MODELS

PSS/E

ASPEN

PSCAD

EXHIBIT B-2
GENERATOR CAPABILITY CURVE(S)

DRAFT REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

ISLAND OF HAWAI'I

FEBRUARY 2, 2018

Docket No. 2017-0352

Model Wind RDG PPA

Attachment B

[Note: The body of the Companies' RDG PPAs for both PV and wind are the same for all three Companies and are therefore not reproduced as part of this exhibit. Some of the attachments to the RDG PPA for both PV and wind are island specific and such island specific attachments for Hawai'i are provided in Exhibit 8 of this Transmittal Letter]

Hawai'i Electric Light

[ATTACHMENT B WILL BE REVISED TO REFLECT THE RESULTS OF IRS]

ATTACHMENT B
FACILITY OWNED BY SELLER

1. The Facility.

(a) Drawings, Diagrams, Lists, Settings and As-Builts.

(i) Single-Line Drawing, Interface Block Diagram, Relay List, Relay Settings and Trip Scheme. A preliminary single-line drawing (including notes), Interface Block Diagram, 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 Interface Block Diagram) and Attachment F (Relay List and Trip Scheme). A final single-line drawing (including notes), Interface Block Diagram, relay list and trip scheme of the Facility shall, after having obtained prior written consent from Company, be labeled "Final" Single-Line Drawing, the "Final" Interface Block Diagram and "Final" Relay List and Trip Scheme and shall supersede Attachment E (Single-Line Drawing and Interface Block Diagram) and Attachment F (Relay List and Trip Scheme) to this Agreement and shall be made a part hereof on the Commercial Operations Date. After the Commercial Operations Date, no changes shall be made to the "Final" Single-Line Drawing, the "Final" Interface Block Diagram and the "Final" Relay List and Trip Scheme without the prior written consent of Seller and Company. The single-line drawing shall expressly identify the Point of Interconnection of Facility to Company System.

(ii) As-Builts. Seller shall provide final as-built drawings of the Seller-Owned Interconnection Facilities within 30 Days of the successful completion of the Acceptance Test.

(iii) No Material Changes. Seller agrees that no material changes or additions to Facility as reflected in the "Final" Single-Line Drawing (including notes), the "Final" Interface Block Diagram and the "Final" Relay List and Trip Scheme, shall be made without Seller first having obtained prior written consent from Company. The foregoing are subject to changes and additions as part of any Performance Standards Modifications. If Company directs any changes in or additions to the Facility, records and operating procedures that are not part of any Performance Standards Modifications, 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 Company System. The Facility shall be accessible at all times to authorized Company personnel.

(ii) The Facility shall include:

[LIST OF THE FACILITY

Examples may include, but not limited to:

- **Seller-Owned Interconnection Facilities**
- **Substation**
- **Control and monitoring facilities**
- **Transformers**
- **Generators (as described in Attachment A)**
- **"lockable" cabinets or housings suitable for the installation of the Company-Owned Interconnection Facilities located on the Site**
- **relays and other protective devices**

- **leased telephone line and/or equipment to facilitate microwave communication]**

(iii) The Facility shall comply with the following **[includes excerpts of language that may be requested by Company]**:

A. Seller shall install a ____ kV disconnect switch and all other items for its switching station (relaying, control power transformers, high voltage circuit breaker). Bus connection shall be made to a manually and automatically (via protective relays) operated high-voltage circuit breaker. The high-voltage circuit breaker shall be fitted with bushing style current transformers for metering and relaying. Downstream of the high-voltage circuit breaker, a structure shall be provided for metering transformers. From the high-voltage circuit breaker, another bus connection shall be made to another pole mounted disconnect switch, with surge protection.

B. Seller shall provide within the Seller-Owned Interconnection Facilities a separate, fenced area with separate access for Company. Seller shall provide all conduits, structures and accessories necessary for Company to install the Revenue Metering Package. Seller shall also provide within such area, space for Company to install its communications, supervisory control and data acquisition ("SCADA") remote terminal unit ("RTU") and certain relaying if necessary for the interconnection. Seller shall also provide AC and DC source lines as specified later by Company. Seller shall provide a telephone line for Company-owned meters. Seller shall 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 cabinet for switching station relaying equipment. Seller shall select and install relaying equipment acceptable to Company. 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 (86), which in turn will trip the main circuit breaker and not allow it to be reclosed without reset.

D. **[RESERVED]**

E. Seller's equipment also shall provide at a minimum:**[COMPANY TO REVISE THIS SECTION PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(i) Interface with Company's RTU, or designated communications and control interface, to provide telemetry of electrical quantities such as total Facility net MW, MVar, power factor, voltages, currents, and other quantities as identified by the Company;

(ii) Interface with Company's RTU, or designated communications and control interface, to provide status for circuit breakers, reactive devices, switches, and other equipment as identified by the Company;

(iii) Interface with Company's RTU, or designated communications and control interface, to provide

control to incrementally raise and lower the voltage target at the point of regulation operating in automatic voltage regulation control. If Company's RTU, or designated communications and control interface, is unavailable, due to loss of communication link, RTU failure, or other event resulting in 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 change in voltage regulation target as directed by the Company System Operator;

(iv) Interface with Company's RTU, or designated communications and control interface, to provide active power control to limit net real power export from the Facility and to remove the limit on net real power export from the Facility. and

(v) For Variable Energy Facilities: Interface with Company's RTU, or designated communications and control interface, to provide telemetry of equipment e availability and meteorological and production data required under Section 8 (Data and Forecasting) of this Attachment B (Facility Owned by Seller) and the Facility's Power Possible.

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 shall be required to obtain Company's prior written approval. If an analysis to revise parts of the IRS is required, Seller shall 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. Critical Infrastructure Protection.

(i) Documentation. Seller shall submit documentation describing the approach, methodology and design to provide physical and cyber security with its submittal of the design drawings pursuant to Section 1(c) (Design Drawings, Bill of Materials, Relay Settings and Fuse Selection) of Attachment B (Facility Owned by Seller) which shall be at least sixty (60) Days prior to the Acceptance Test.

- The design shall meet industry standards and best practices, as indicated by NERC CIP guidelines and requirements for critical generation facilities. The system shall be designed with the criteria to meet applicable industry standards and guidelines (at the time of this writing, NERC CIP, or any future standard adopted by the industry in its place) compliance requirements and identify areas that are not consistent with NERC CIP guidelines and requirements.

- The cyber-security documentation shall include a block diagram of the control system with all external connections clearly described.

- Seller shall provide such additional information as Company may reasonably request as part of a security posture assessment.

- Company shall be notified in advance when there is any condition that would compromise physical or cyber security, or if any breaches in security, or security incidents are detected.

(ii) Malware. Seller shall (consistent with the following sentence) ensure that no malware or similar items are coded or introduced into any aspect of the Facility, Interconnection Facilities, the Company Systems interfacing with the Facility and Interconnection Facilities, and any of Seller's critical control systems or processes used by Seller to provide energy, including the information, data and other materials delivered by or on behalf of Seller to Company, (collectively, the "Environment"). Seller will continue to review, analyze and implement improvements to and upgrades of its Malware prevention and correction programs and processes that are commercially reasonable and consistent with the then current technology industry's standards and, in any case, not less robust than the programs and processes implemented by Seller with respect to its own information systems. If Malware is found to have been introduced into the Environment, Seller will promptly notify Company and Seller shall take immediate action to eliminate and remediate the effects of the Malware, at Seller's expense. Seller shall not modify or

otherwise take corrective action with respect to the Company Systems except at Company's request. Seller will promptly report to Company the nature and status of all Malware elimination and remediation efforts.

(iii) Security Breach. In the event that Seller discovers or is notified of a breach, potential breach of security, or security incident at Seller's Facility or of Seller's systems, Seller shall immediately (i) notify Company of such potential, suspected or actual security breach, whether or not such breach has compromised any of Company's confidential information, (ii) investigate and promptly remediate the effects of the breach, whether or not the breach was caused by Seller, (iii) cooperate with Company with respect to any such breach or unauthorized access or use; (iv) comply with all applicable privacy and data protection laws governing Company's or any other individual's or entity's data; and (v) to the extent such breach was caused by Seller, provide Company with reasonable assurances satisfactory to Company that such breach, potential breach, or security incident shall not recur. Seller shall provide documentation to Company evidencing the length and impact of the breach. Any remediation of any such breach will be at Seller's sole expense.

(iv) Monitoring and Audit. Seller's shall provide information on available audit logs and reports relating to cyber and physical and security. Company may audit Seller's records to ensure Seller's compliance with the terms of this

Section 1(b)(iii)G (Critical Infrastructure Protection) of this Attachment B (Facility Owned by Seller), provided that Company has provided reasonable notice to Seller and any such records of Seller's will be treated by Company as confidential.

H. Seller's available power production considering equipment and resource availability (Potential Energy)Power Possible will be determined at any given time using the best-available data and methods for an accurate representation of the amount of active power at the point of interconnection. To the extent available, the Parties shall use Seller's real time Potential Energy (Power Possible) communicated to Company through the SCADA System except to the extent that the Potential Energy does not accurately reflect the actual available active power at the point of interconnection (plus or minus 0.1 MW.) During those periods of time when the SCADA derived (Power Possible) Potential Energy is unavailable, or does not accurately represent Potential Energy, the Parties shall use the best available data obtained through Commercially Reasonable methods to determine the Power Possible. Follow up actions to resolve the discrepancy will be as provided in Section 1(j) (Demonstration of Facility) of this Attachment B (Facility Owned by Seller).

I. Seller shall reserve space within the Site for possible future installation of Company-owned meteorological equipment (such as wind speed, direction and relative humidity monitors, SODAR and irradiance monitors) and AC and DC source lines for such equipment. In the event Company decides to install such meteorological equipment: (i) Seller shall work with Company to determine an acceptable location for such equipment and any associated wiring, interface or other components; and (ii) Company shall pay for the needed equipment, and installation of

such equipment, unless otherwise agreed to by the Parties. Company and Seller shall use commercially reasonable efforts to facilitate installation and minimize interference with the operation of the Facility.

J. The Facility shall, at a minimum, satisfy the wind load and seismic load requirements of the International Building Code and any more stringent requirements imposed under applicable Laws.

(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 and 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) [RESERVED]

(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. **[COMPANY TO REVISE THIS SECTION 1(E) PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(f) Maintenance Plan. Seller shall maintain Seller-Owned Interconnection Facilities in accordance with the following maintenance plan:

Transmission line: _____

___ kV Facility switching station: _____

Relay protection equipment: _____

Other equipment as identified: _____

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

(g) Active Power Control Interface. **[COMPANY TO REVISE THIS SECTION PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(i) Seller shall provide and maintain in good working order all equipment, computers and software associated with the control system (the "Active Power Control Interface") necessary to interface the Facility active power controls with the Company System Operations Control Center for real power control of the Facility by the Company System Operator. The Active Power Control Interface will be used to control the net real power export from the Facility as required under this Attachment B (Facility Owned by Seller). The implementation of the Active Power Control Interface will allow Company System Operator to initiate the active power limiting, vary the level of limiting, and remove the limiting 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 Active Power Control Interface to ensure compatibility with Company's centralized control systems. In order to ensure such continued compatibility, Seller shall not materially change the approved design without Company's prior review and prior written approval.

(iii) The Active Power 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, located in Company's portion of the Facility switching station which shall provide the control signals to the Facility and send feedback status to the Company System Operations Control Center. The control type shall be analog output (set point) or raise/lower controls and will be mutually agreed to prior to final design approval.

(iv) The Active Power Control Interface shall also include provision for feedback points from the Facility indicating when active power limiting is in effect and the analog value of the MW limit(s). The Facility shall provide the feedback to the Company SCADA system immediately upon receiving the respective control signal from the Company.

(v) Seller shall provide to the telemetry interface an analog signal for the MW gross production of each individual generating unit, and an analog signal for the total net MW production at the Point of Interconnection.

(vi) The Active Power Control Interface shall provide for remote control of the real-power output of the Facility by the Company at all times. If the Active Power Control Interface is unavailable or disabled, the Facility shall not export electric energy to Company, unless the Company, in its sole discretion, agrees to accept electric energy and Seller

and Company agree on an alternate means of dispatch. If Seller fails to provide such remote control capability (whether temporarily 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 derate or disconnect the entire Facility during those periods that such control capability is not provided.

(vii) The rate at which the Facility changes net real power export in response to active power control shall not be less than the greater of 2 MW per minute or such faster ramp as the installed equipment can support. The Facility's Active Power Control Interface will control the rate at which electric energy is changed to achieve the active power limit. The Facility will respond to the active power control request immediately with an echo of the set point and measurable change within the 4 second control cycle. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY TO REFLECT SYSTEM REQUIREMENTS]**

(viii) The Active Power Control Interface shall accept the following active power control(s) from the Company centralized central system:

- Maximum Power Limit: The Facility is not allowed to exceed this setting under any circumstances. The frequency response control specified in Section 3(m) (Frequency Response) of Attachment B (Facility Owned by Seller) is not allowed to increase the Facility's net real power export above this limit. When the Maximum Power Limit is set to zero, the Facility's WTGS(s) must be shutdown. **[Applicability subject to Company review].**
- Available maximum capacity: (see above, instantaneous limit for available energy, represents max level the Facility can produce (lfcmx, ecomx).

- Minimum sustained limit: minimum output level the Facility can be reduced to continuously without delay (ecomn).
- Minimum transient limit (for frequency response, regulation) (lfcmn).
- Maximum dispatchable ramp rate – controlled ramp rate available for controlled changes in output.

(ix) Seller shall not override Company's active power controls without first obtaining specific approval to do so from the Company System Operator unless there is a system emergency. , Disabling of the remote Active Power Control shall initiate telemetry notification to the Company.

(x) The requirements of the Active Power Control Interface may be modified as mutually agreed upon in writing by the Parties.

Active Power Communications between Company and Seller

Company will receive and send AGC Set-Point and related data over an analog or digital line. The data points covered under this PPA, as described below, may overlap data requirements described elsewhere..

AGC Data Points to be sent from Seller to Company via SCADA

The following data points will be transmitted via SCADA from Seller to Company and represent Facility level data:

Description	Units
AGC Set-Point (echo)	MW
Power demand	MW
Actual power	MW
Park Potential	MW
Actual reactive power	Mvars
Average Voltage	kV
[*wind only*] Number of turbines online and	Integer

running	
AGC Status	Remote/Local

Response times and limitations of Facility in regards to Active Power Control

The following protocols outline the expectations for responding to the AGC Set-Point.

Allowable Variances in Excess of Active Power Set-Point. Once the Facility has reached the Set-Point, there may be variances in excess of such set-point up to 0.1 MW on average as measured during a 10-minute period. This is due to changing wind conditions vs. the manufacturer's specifications for responding to those new conditions.

Frequency of Changes. Company may send a new AGC Set-Point to the Facility at up to the AGC control cycle (present 4 seconds).

Range of AGC Set-Point. The range of set point values can be between 0% and 100% of Power Possible (Available Power, or whatever term is selected).

Backup Communications

In the event of an AGC failure, Company and Seller shall communicate via telephone in order to correct the failure.

DATA COLLECTION

Data

Seller shall install at least _____ meteorological tower(s), spaced so as to provide the data points set forth below for the entire Facility. At least two months prior to the Commercial Operation Date, Seller will deliver to Company a report showing (i) manufacturer, model, and year of all Wind Turbines and meteorological instrumentation and (ii) the latitude, longitude and hub height at every Wind Turbine and meteorological tower.

Beginning upon COD, Seller shall transmit and provide to Company the real-time data set forth below, refreshed in approximately four-ten (4-10) second intervals with regard to its generation of Renewable Energy at the Facility:

- Five data points from each Wind Turbine:

- o Turbine generation (kW)
- o Wind Speed (meters per second – mps)
- o Turbine Availability
- o Wind Direction (in degrees relative to true north)
- o Temperature (Celsius)
- o Five data points from each Meteorological Tower:
  1. Wind Speed ** (mps)
  2. Wind Direction** (degrees relative to true north)
  3. Temperature (Celsius)
  4. Pressure (mb)
  5. Air Density (kg/m^3)

  ** = at all metered heights.

In addition to the other requirements for data collection, Seller shall install, maintain and operate at least one meteorological tower that is installed at hub height and is placed upstream of the prevailing wind path. The data stream from this meteorological tower to the Company's System must be reliable during periods of transmission-related curtailments and must include battery back-up at the meteorological tower and a local source of electricity to power the PI System and interconnectivity between the Facility and Company during transmission outages.

Seller shall provide a map and key for each Wind Turbine sufficient to allow Company to correlate the data received through the System to each individual Wind Turbine.

(h) Control System Acceptance Test Procedures.

(i) Conditions Precedent. The following conditions precedent must be satisfied prior to the conduct of the Control System Acceptance Test:

- Successful Completion of the Acceptance Test.
- Facility has been successfully energized.

- All of the Facility's generators have been fully commissioned.
- The control system computer has been programmed for normal operations.
- All equipment that is relied upon for normal operations (including ancillary devices such as capacitors/inductors, energy storage device, statcom, etc.) shall have been commissioned and be operating within normal parameters.

(ii) Facility Generators. Unless all of the Facility's generators are available for the duration of the Control System Acceptance Test, the Control System Acceptance Test will have to be re-run from the beginning unless Seller demonstrates to the satisfaction of the Company that the test results attained with less than all of the Facility's generators are consistent with the results that would have been attained if all of the Facility's generators had been available for the duration of the test.

(i) Procedures. The Control System Acceptance Test will be conducted on Business Days during normal working hours on a mutually agreed upon schedule. No Control System Acceptance Test will be scheduled during the final 21 Days of a calendar year. 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 completion of the Control System Acceptance Test, Company shall notify Seller in writing whether the Control System Acceptance Test(s) has been passed and, if so, the date upon which such Control System Acceptance Test(s) was passed. If any changes have been made to the technical specifications of the Facility or the design of the Facility in accordance with Section 5(f) of Attachment A (Description of Generation and Conversion Facility), such

changes shall be reflected in an amendment to this Agreement, and the written protocol for the Control Systems Acceptance Test shall be based on the Facility as modified. Such Amendment shall be executed prior to conducting the Control System Acceptance Test and Company shall have no obligation for any delay in performing the Control Systems Acceptance Test due to the need to complete and execute such amendment.

(i) Facility Security and Maintenance. Seller is responsible for securing the Facility. Seller shall have personnel available to respond to all calls related to security incidents and shall take commercially reasonable efforts to prevent any security incidents. Seller is also responsible for maintaining the Facility, including vegetation management, to prevent security breaches. Seller shall comply with all commercially reasonable requests of Company to update security and/or maintenance if required to prevent security breaches.

(j) Demonstration of Facility. Company shall have the right at any time, other than during maintenance or other special conditions communicated by Seller, to notify Seller in writing of Seller's failure, as observed by Company and set forth in such written notice, to meet the operational and performance requirements specified in Section 1(b)(iii)(H), Section 1(g) (Active Power Control Interface) and Section 3 (Performance Standards) of this Attachment B (Facility Owned by Seller), and to require documentation or testing to verify compliance with such requirements. Upon receipt of such notice, Seller shall promptly investigate the matter, implement corrective action and provide to Company, within thirty (30) Days of such notice, a written report of both the results of such investigation and the corrective action taken by Seller. If the Seller's report does not resolve the issue to Company’s reasonable satisfaction, the Parties shall promptly commission a study to be performed by one of the engineering firms then included on the OEPR Consultants List to evaluate the cause of the non-compliance and to make recommendations to remedy such non-compliance. Seller shall pay for the cost of the

study. The study shall be completed within ninety (90) days, unless otherwise agreed to in writing by Seller and Company. The consultant shall send the study to Company and Seller. Seller (and/or its Third-Party consultants and contractors), at Seller's expense, shall take such action as the study shall recommend with the objective of resolving the non-compliance. Such recommendations shall be implemented by Seller to Company's reasonable satisfaction no later than forty-five (45) Days from the Day the completed study is issued by the consultant, unless otherwise agreed to in writing by Company. Failure to implement such recommendations within this period shall constitute a material breach of this Agreement.

2. Operating Procedures. **[NOTE: NUMERICAL SPECIFICATIONS IN THIS SECTION 2 MAY VARY DEPENDING ON THE SPECIFIC PROJECT AND THE RESULTS OF THE PROJECT SPECIFIC INTERCONNECTION REQUIREMENT STUDY.]**

(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 Company deems 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 Company System whenever requested to do so by the Company System Operator pursuant to Article 8 (Company Dispatch) 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 six (6) years.

(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) Reserved.

(f) Reserved.

(g) Critical Infrastructure Protection. Seller shall comply with the critical infrastructure protection 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 the [_____] circuit is in normal operating configuration served by breaker [_____] at [____] Substation. **[TO BE DETERMINED BY COMPANY BASED ON THE RESULTS AND REQUIREMENTS OF THE IRS]**

3. Performance Standards.

(a) Reactive Power Control. Seller shall control its reactive power by automatic voltage regulation control. Seller shall automatically regulate voltage at a point, the point of regulation, between the 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 to the extent allowed by the Facility reactive power capabilities as defined in Section 3(b)(Reactive Amount) of this Attachment B (Facility Owned by Seller).

(b) Reactive Amount. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS.**]

(i) The Facility must deliver power up to the Allowed Capacity at a power factor between 85% lagging and 90% leading to the Company System as illustrated in the **[generator capability]** curve(s) attached to this Agreement as Exhibit B-2 (Generator Curve(s)). The Facility generators must be capable of automatically adjusting reactive control to maintain the bus voltage at the Point of Interconnection to meet the scheduled voltage set point target specified by the Company System Operator. The voltage target will be specified remotely by the Company System Operator through the SCADA/EMS. The Facility's

voltage set point target must reflect the Company voltage set point target controlled from the SCADA/EMS, without delay. The generator should not normally operate on a fixed var or fixed power factor unless agreed by Company. The voltage setpoint target, and present Facility minimum and maximum reactive power limits based on the Facility real power export and the generator capability curve(s) shall be provided to the Company EMS through the RTU telemetry interface The Facility must deliver power up to the Allowed Capacity at a power factor between 85% lagging and 90% leading to the Company System as illustrated in the **[generator capability]** curve(s) attached to this Agreement as Exhibit B-2 (Generator Curve(s)). The Facility generators must be capable of automatically adjusting reactive control to maintain the bus voltage at the Point of Interconnection to meet the scheduled voltage set target specified by the Company System Operator. The voltage target will be specified remotely by the Company System Operator through the SCADA/EMS. The Facility's voltage must reflect the Company voltage target controlled from the SCADA/EMS, without delay. The generator should not normally operate on a fixed var or fixed power factor unless agreed by Company. The voltage target, and present Facility minimum and maximum reactive power limits based on the Facility real power export and the generator capability curve(s) shall be provided to the Company EMS through the RTU telemetry interface

(ii) 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 changes. 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 voltage control target will be achieved within 1 second following a step change.

(iii) If the Facility does not operate in accordance with Section 3(b)(i) of this Attachment B

(Facility Owned by Seller), Company may 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.

(i) Seller shall ensure that the ramp rate of the Facility is less than the following limits for all conditions other than those under control of the Company System Operator or those due to desired frequency response, including start up, changes in the wind resource, and shut down (including high wind speed shut down in the case of wind facilities) 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 of uncoordinated changes in output in response to changes in resource.

- Maximum Ramp Rate Downward of 2 MW/minute for all periods of uncoordinated changes in output in response to changes in resource.

- Maximum ramp rate for shutdown/startup other than requested by System Operator (such as high wind speed shutdown, startup due to resource availability) 2 MW/minute. Plant operator should notify System Operator of equipment startup/shutdown by method agreed by Company.

(ii) Upon receiving a command from the Company active power limit control(s) described in Section 1(g)(viii) of this Attachment B (Facility Owned by Seller), Seller shall adjust the Facility's net real power export to the extent allowed by the wind resource without exceeding such ramp without intentional delay.

(iii) 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 response control described in Section 3(m)

(Frequency Response) of this Attachment B (Facility Owned by Seller).

(d) Ride-Through.

Ride-Through requires that the resource continues to inject current within the “No Trip” zone of the voltage and frequency ride-through regions. Unless approved during the Interconnection Requirements Study analysis, resources should not use “momentary cessation” within the ride-through regions.

(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). For alarm conditions the Facility should not disconnect from the Company System unless the Facility’s equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System. **[THESE VALUES MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS. WITHOUT LIMITATION, FOR A DISTRIBUTION-CONNECTED FACILITY, UPON COMPLETION OF THE IRS THE COMPANY MAY SPECIFY REQUIREMENTS FOR A MANDATORY DISCONNECTION FROM THE COMPANY SYSTEM.]**:

0.80 pu ≤ V ≤ 1.00 pu	The Facility remains connected to the Company System and in continuous operation.
0.00 pu ≤ V < 0.80 pu	The Facility remains connected to the Company System and in continuous operation for a minimum of 600 milliseconds per event(while “V” remains in this range). The Facility may initiate an alarm if “V” remains in this range for more than _600_ milliseconds; the duration of the event is measured from the point at which the voltage drops below 0.80 pu. and ends when the

voltage is at or above 0.80 pu. The 600 milliseconds represents a delayed clearing time of 30 cycles plus breaker opening time.

Protective Undervoltage Relaying (27) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

Seller shall have sufficient capacity to fulfill the above mentioned requirements to ride-through subsequent events 300 cycles or more apart, between which the voltage at the POI recovers above 0.80 p.u.

[THE ACTUAL RIDE-THROUGH TIMES WILL BE DETERMINED BY COMPANY IN CONNECTION WITH THE IRS]:

(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). For alarm conditions the Facility should not disconnect from the Company System unless the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System. **[THESE VALUES MAY BE CHANGED BY THE COMPANY UPON COMPLETION OF THE IRS. WITHOUT LIMITATION, FOR A DISTRIBUTION-CONNECTED FACILITY, UPON COMPLETION OF THE IRS THE COMPANY MAY SPECIFY REQUIREMENTS FOR A MANDATORY DISCONNECTION FROM THE COMPANY SYSTEM AT V > 1.2 pu.] RIDE-THROUGH REQUIREMENTS FOR OTHER SYSTEM WILL BE DETERMINED IN THE IRS.]**:

1.00 pu < V ≤ 1.10 pu	The Facility remains connected to the Company System.
1.10 pu < V ≤ 1.15 pu	The Facility remains connected to the Company System and in

	continuous operation no less than 30 seconds; the duration of the event is measured from the point at which the voltage increases at or above 1.1 pu and ends when voltage is at or below 1.1 pu.
V > 1.15 pu	The Facility remains connected to the Company System and in continuous operation for as long as possible as allowed by the equipment operational limitations (i.e.; the generator manufacturer's recommended time interval).

Protective Overvoltage Relaying (59) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

(g) Transient Stability Ride-Through.

The Facility shall be designed such that the transient stability of Company System is maintained for normally cleared and secondarily cleared faults. The Facility will be required to remain connected through anticipated rates of change of frequency **[TO BE PROVIDED UPON COMPLETION OF IRS].**

(h) [RESERVED]

(i) Underfrequency ride-through.

The Facility shall meet the following underfrequency ride-through requirements during an underfrequency disturbance, and export of power shall continue with output adjusted as appropriate for Facility droop response specified in Section 3(m) (Frequency Response) of this Attachment B (Facility Owned by Seller) ("f" is the Company System frequency at the Point of Interconnection):

57.0 Hz ≤ f ≤ 60.0 Hz	The Facility remains connected to the Company System and in continuous operation.
56.0 Hz ≤ f < 57.0 Hz	The Facility remains connected to the Company System and in continuous operation for at least six (6)] seconds per event. The duration of the event is from the point at which the frequency is below 57 Hz and ends when the frequency is at or above 57 Hz. The Facility may initiate an alarm if frequency remains in this range for more than six (6)] seconds.
f < 56.0 Hz	The Facility remains connected to the Company System and in continuous operation for the duration allowed by the equipment operational limitations. The Facility may initiate an alarm immediately.

Protective Underfrequency Relaying (81U) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

(j) Overfrequency ride-through.

The Facility will behave as specified below for overfrequency conditions, and export of power shall continue with output adjusted as appropriate for Facility droop response specified in Section 3 (m) (Frequency Response) ("f" is the Company System frequency at the Point of Interconnection):

60.0 Hz ≤ f ≤ 61.5 Hz	The Facility remains connected to the Company System and in continuous operation.

61.5 Hz ≤ f ≤ 63.0 Hz	The Facility remains connected to the Company System for at least ten_(10) seconds. After ten seconds the Facility may initiate an alarm and the Facility remains connected and producing power for the duration allowed by the equipment operational limitations. The duration of condition is from the point at which the frequency is above 61.5 Hz and ends when the frequency is at or below 61.5 Hz.
f > 63.0 Hz	The Facility remains connected to the Company System for the duration allowed by the equipment operational limitations. The Facility may initiate an alarm immediately.

Protective Overfrequency Relaying (81O) shall be set to alarm only to meet the above ride-through requirements, and should not initiate a disconnect from the Company System unless Seller reasonably determines based upon Good Engineering and Operating Practices that the Facility's equipment is at risk of damage. This is necessary in order to coordinate with the existing Company System.

(k) Voltage Flicker.

Any voltage flicker on the Company System caused by the Facility shall not exceed the limits stated in IEEE Standard 1453-2011, or latest version "Recommended Practice – Adoption of IEC 61000-4-15:2010, Electromagnetic compatibility (EMC) – Testing and measurement techniques – Flickermeter – Functional and design specifications".

(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 Response.

Seller Facility shall provide a primary frequency response with a frequency droop characteristic reacting to system frequency at the Point of Interconnection in both the overfrequency and underfrequency directions except as limited by the minimum and maximum available capacity at the time of the event. Minimum operational limit for each online turbine is to be supplied.

(i) Nominal System Frequency is 60.00 Hz.

(ii) The droop setting should permit a setting from 0.1 to 10%. This setting shall be changed upon Company's written request as necessary for grid droop response coordination. The droop setting shall be tunable and may be specified during commissioning, the nominal setting is 4%. The Seller shall make commercially reasonable efforts to provide frequency response without an intentional deadbandbut in any case is not to exceed +/- 0.0166 Hz . The droop response shall provide [80-100%] of expected (proportional) active power output at the end of a linear ramp change in frequency of [1% (0.6 Hz)] over a [5] second period starting at the initial frequency deviation. . [80%] of the desired response has to be delivered within [2] seconds after disturbance, and full response must be deployed within an additional [3] seconds after an initial [2] seconds for a total response within [5] seconds after the disturbance. When operating in parallel with the Company System, the Facility shall operate with its speed governor control in automatic operation. Notification of changes in the status of the speed/load governing controls must be provided to the Company System Operator immediately preferably through SCADA.

(iii) The Facility frequency response control shall adjust, without intentional delay and without regard to the ramp rate limits in Section

3(c)(Ramp Rates) of this Attachment B (Facility Owned by Seller), the Facility's net real power export when system frequency is not 60 Hz based on frequency deadband and frequency droop settings specified by the Company.

(iv) The Facility frequency response control shall be allowed to increase the net real power export above the Power Reference Limit set under Section 1(g)(viii) of this Attachment B (Facility Owned by Seller) or further decrease the net real power export from the Power Reference Limit in its operations.

(v) The Facility frequency response control shall be in continuous operation when the Facility is exporting energy to the Company unless directed otherwise by the Company.

(n) Provision of Synthetic Inertia.

[TO BE DETERMINED BASED ON IRS.]

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 the removal of __ MW or more from Company System and/or disconnection of the Facility from the Company's System through the interconnecting breakers that is not the result of Company dispatch, frequency droop response, or isolation of the Facility resulting from designed protection fault clearing.

(b) For every disconnection from the Company System Seller shall investigate the cause . Within three (3) Business Days Seller shall provide, in writing to Company, an incident report that summarizes the sequence of events and probable cause. A disconnection from the Company System of _ mw is considered a Disconnection Event.

(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 dispatch 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 Hawai‘i (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. Within 30 Days of Company's written request, but 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 WTGS(s) and any other equipment within the Facility identified in the IRS which utilizes Source Code (such as energy storage system, STATCOM or DVAR equipment), including, but not limited to, integrated and validated power flow and transient stability models (such as PSS/E models), a short circuit model (such as an ASPEN model), and an electro-magnetic transient model (such as a PSCAD model) of the WTGS(s) and any additional equipment identified in the IRS as set forth above, applied assumptions, and pertinent data sets (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 (i) Company's written request, or (ii) Seller obtaining knowledge or notice that any Required Model has been modified, updated or superseded by the Source Code Owner.

(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 ensure that 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. Seller shall be responsible for all costs associated with establishing and maintaining the Source Code Escrow. 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 ensure 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 ensure the update of the deposited Source Code and relevant documentation for Major Releases and Minor Releases of the Required Models as soon as reasonably possible after they are made generally available.

(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 Company finds that Seller failed to arrange for and ensure the update the Source Code Escrow with the modified and/or updated Source Code and relevant documentation for Major Releases and Minor Releases of the Required Models as provided in Section 6(b)(i) (Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller) or that the Source Code for the Required Models is incomplete or otherwise unusable, Seller shall be liable to Company for liquidated damages in the amount of $500 per day for each day Seller fails to provide such Source Code to Company or such update to the Source Code to Company from the date such Major Release or Minor Release was first made available by the Source Code Owner to customers of the Source Code Owner. Failure to provide the updated Source Code of the Required Models within 30 Days' notice from Company of a breach of Section 6(b)(i)(A) (Establishment of Source Code Escrow) of Attachment B (Facility Owned by Seller) shall constitute an Event of Default pursuant to Section 15.2(F) (Events of Default by a Party) under the Agreement.

(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 Hawaii Electric Light Company, Inc. ("Hawaii Electric Light"), and (ii)

Hawaii 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 Hawaii Electric Light.

(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 the Required Models and their relevant Source Code are not provided to the Company in the form of Source Code pursuant to Section 6(a) (Seller's Obligation to Provide Models) 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 provide an irrevocable standby letter of credit with no documentation requirement in the amount of Two Hundred Fifty Thousand Dollars ($250,000) per Required Model (and its relevant Source Code)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 . Such letter of credit 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. The letter of credit shall include a provision for at least thirty (30) Days advance notice to Company of any expiration or earlier termination of the letter of credit so as to allow Company sufficient time to exercise its rights under said security if Seller fails to extend or replace the 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.

(B) Release Conditions. Company shall have the right to draw on the letter of credit the funds necessary to develop and recreate the Required Model or Required Models upon Company's request 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) Extend Letter of Credit. If the letter of credit is not renewed or extended no later than thirty (30) Days prior to its expiration or earlier termination, Company shall have the right to draw immediately upon the full amount of the letter of credit and to place the proceeds of such draw (the "Proceeds"), at Seller's cost, in an escrow account in accordance with Section 6(b)(ii)(D) (Proceeds Escrow), until and unless Seller provides a substitute form of letter of credit meeting the requirements of this Section 6(b)(ii) (Monetary Escrow) of this Attachment B (Facility Owned by Seller).

(D) Proceeds Escrow. If Company draws on the letter of credit pursuant to Section 6(b)(ii)(C) (Extend Letter of Credit) of this Attachment B (Facility Owned by Seller), Company shall, in order to avoid comingling the Proceeds, have the right but not the obligation to place the Proceeds in an escrow account as provided in this Section 6(b)(ii)(D) (Proceeds Escrow) of this Attachment B (Facility Owned by Seller) with a reputable escrow agent acceptable to Company ("Escrow Agent"). Without limitation to the generality of the foregoing, a federally-insured bank shall be deemed to be a "reputable escrow agent." Company shall have the right to apply the Proceeds as necessary to recover amounts Company is owed pursuant to this Section 6 (Modeling) of this Attachment B (Facility Owned by Seller). To that end, the documentation governing such escrow account shall be in form and content satisfactory to Company and shall give Company the sole authority to draw from the account. Seller shall not be a party to such documentation and shall have no rights to the Proceeds. Upon full satisfaction of Seller's obligations under Section 6 (Modeling) of this Attachment B (Facility Owned by Seller), Company shall instruct the Escrow Agent to remit to the bank that issued the letter of credit that was the source of the Proceeds the remaining balance (if any) of the Proceeds. If there is more than one escrow account with Proceeds, Company may, in its sole discretion, draw on such accounts in any sequence Company may select. Any failure to draw upon the Proceeds for any damages or other amounts due Company shall not prejudice Company's rights to recover such damages or amounts in any other manner.

(E) Seller's Obligation. If the letter of credit is 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.

(F) 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 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.

(G) Certification. The terms of the letter of credit shall provide for a release of the funds, or in the event the funds have been placed into a Proceeds Escrow, the 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 Hawaii Electric Light Company, Inc. ("Hawaii Electric Light"), and (ii) Hawaii Electric Light 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 Hawaii Electric Light.

(H) Authorized Use. If Company becomes entitled to a release of funds from escrow, 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. Testing Requirements.

(a) Testing Requirements. Once the Control System Acceptance Test has been successfully passed, Seller shall not replace and/or change the configuration of the Facility Control, wind turbine controls and/or ancillary device controls, without prior written notice to Company. In the event of any such replacement and/or change, the relevant test(s) of the Control System Acceptance Test shall be redone and must be successfully passed before the replacement or altered equipment is allowed to be placed in normal operations. In the event that Company reasonably determines that such replacement and/or change of controls makes it inadvisable for the Facility to continue in normal operations without a further Control Systems Acceptance Test, the Facility shall be deemed to be in Seller-Attributable Non-Generation status until the new relevant tests of the Control System Acceptance Test have been successfully passed.

(b) Periodic Testing. Seller shall coordinate periodic testing of the Facility with Company to ensure that the Facility is meeting the performance standards specified under this Agreement.

8. Data and Forecasting.

Seller shall provide Site, meteorological and production data in accordance with the terms of Article 6 (Forecasting) of this Agreement and the following requirements:

(i) Physical Site Data: Seller shall provide Company with an accurate description of the physical Site, including but not limited to the following, which may not be changed during the Term without Company's prior written consent:

A. Location Facility map showing the layout of the Facility (coverage area or footprint), coordinates (latitude and longitude) and height above ground of each Wind Turbine hub.

B. Location (latitude and longitude) of each MMT and elevation (above ground) of each field measurement device for, e.g., air density, ambient air pressure and ambient air temperature, located at each MMT.

(ii) Meteorological and Production Data:

A. Seller shall install and maintain at least one multi-level MMT on the prevailing, upstream side of the Facility to elevate the field measurement devices for the "other meteorological conditions" identified in Section 6.2(ii) of this Agreement. At a minimum, such measuring devices shall be placed at approximately "hub height" of the Wind Turbines, typically using a boom extension off the MMT. Typically, additional measuring devices for such "other meteorological conditions" shall be placed on boom extensions off the MMT at appropriate heights above and below "hub height" as such "appropriate heights" are agreed to between Company and Seller. For facilities with a Contract Capacity of 5 MW and greater, Company may require Seller to install and maintain additional MMTs and additional field measurement devices.

B. For purposes of calculating Facility PBAF, the Seller shall provide (i) the wind speed and Actual WTGS Production at each WTGS within the Facility and (ii) the data on the other meteorological conditions (e.g. air density, ambient air pressure and ambient air temperature) at approximately "hub height" at each MMT.

C. Seller shall provide to Company, via SCADA communication and protocol acceptable to Company to support operations and forecasting needs at a continuous scan, all meteorological and production data required under this Agreement updated every 2 seconds.

D. Seller shall arrange for a dedicated 12 kV line to provide separate service from Company, or for such other independent, backup power source as approved by Company in writing, to temporarily store and record the meteorological data from both the nacelle anemometers at the WTGS(s) and the field measuring devices at the MMTs. Any such

backup power source must be capable of providing power for the field measurement devices for a reasonable period of time until primary power is restored. The same backup power source can serve multiple MMTs as needed by the Facility.

(iii) Units and Accuracy:

A. 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.

Table of Units and Accuracy of Meteorological and Production Data (Wind)

Parameter	Data Source	Unit	Range	Accuracy
Wind speed at nacelle of each WTGS	Cup or sonic anemometer	Mph	0 to 134 mph	+/-1 mph
Wind direction at nacelle of each WTGS	Vane, sonic device or equivalent	Degrees (from True North)	360º	+/-5º
Wind speed at MMT	Cup or sonic anemometer	Mph	0 to 134 mph	+/-1 mph
Wind direction at MMT	Vane, sonic device or equivalent	Degrees (from True North)	360°	+/-5°
Ambient air temperature at MMT (hub height)*	Temperature probe	ºC	-20 to +50 ºC	+/-1 ºC
Ambient air pressure at MMT (hub height)*	Piezoresistive transducer, barometer or equivalent	Mbar	150 to 1150 mbar	+/-60 mbar (0 to +50ºC)
Power production for each WTGS	Measured at WTGS	MW	-20% to 120% of WTGS name plate	+/-0.1 MW
Set point for each WTGS	Reported by Seller	MW	0 to 120% WTGS name plate	Not applicable
Power production of Facility	Measured at Facility's analog transducers on Seller's side of POI	MW	-20% to 120% of Allowed Capacity	The lesser of the tolerances of the communication / telemetry equipment or 2% of

* Plus such other "appropriate heights" as provided in Section 8(ii)(A) of this Attachment B (Facility Owned by Seller).

				measurement
Facility power production ratio	Ratio of Facility's power production (MW)/Allowed Capacity (MW)	%	0 to 100%	+/-0.1%
Power Possible	Seller’s Model	MW	0 to 120% of Allowed Capacity	+/0.1 MW

(iv) Status of WTGS(s) for Purposes of Calculating Facility PBAF:

For each WTGS, Seller shall, unless agreed otherwise by Company and Seller in writing, provide to Company, via SCADA communication or other protocol acceptable to Company at a continuous scan updated not less frequently than every 2 seconds, on each WTGS status itemized below:

- Full Dispatch
- Partial Dispatch
- Non-Generating
- Company-Attributable Non-Performance
- Seller-Attributable Non-Performance
- Force Majeure
- Information Unavailable

9. Technology Specific Requirements.

(a) Three-Phase Synchronous Generators.

The generating facility circuit breakers shall be 3-phase devices with electronic or electromechanical control. The Seller shall be responsible for properly synchronizing its generating facility with the Company System by means of either a manual or automatic synchronizing function. Automatic synchronizing is required for all synchronous generators which have an short circuit current rating ("SCCR") greater than 5%. For a generating facility whose SCCR exceeds 5%, the Facility shall provide protective equipment suitable for detecting loss of synchronism and automatically disconnecting the generating facility from the Company System. Unless otherwise agreed to between the Company and Seller, synchronous generators shall automatically

regulate power factor, not voltage, while operating in parallel with the Company System.

(b) Induction Generators.

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

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

(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. Operating Committee and Operating Procedures

Company and Seller shall each appoint one representative and one alternate representative to act as the Operating Committee in matters relating to the Parties' performance obligations under this PPA and to develop operating arrangements for the generation, delivery and receipt of Renewable Energy from the Facility. The Parties' initial representatives on the Operating Committee are set forth in XXXX

The Operating Committee may develop mutually agreeable written Operating Procedures consistent with the requirements of this PPA, to address matters such as day-to-day communications; key personnel; operations-center interface; metering, telemetering, telecommunications, and data acquisition procedures; operations and maintenance scheduling and reporting; reports; operations log; testing procedures; and such other matters as may be mutually agreed upon by the Operating Committee.

The Operating Committee shall review the requirements for Active Power Control and the Data Collection and Telemetry from time to time after the date hereof and may agree on modifications thereto to the extent necessary or convenient for operation of the Facility in accordance with this PPA.

The Operating Committee shall have authority to act in all technical and day-to-day operational matters relating to performance of this PPA and to attempt to resolve potential disputes, provided, however, that except as explicitly provided herein, the Operating Committee shall have no authority to amend or waive any provision of this PPA.

EXHIBIT B-1
REQUIRED MODELS

PSS/E

ASPEN

PSCAD

EXHIBIT B-2
GENERATOR CAPABILITY CURVE(S)

DRAFT REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

ISLAND OF HAWAIʻI

FEBRUARY 2, 2018

Docket No. 2017-0352

Model Wind and PV RDG PPAs

Attachment N

[Note: The body of the Companies' RDG PPAs for both PV and wind are the same for all three Companies and are therefore not reproduced as part of this exhibit. Some of the attachments to the RDG PPA for both PV and wind are island specific and such island specific attachments for Hawaiʻi are provided in Exhibit 8 of this Transmittal Letter]

Hawaiʻi Electric Light

ATTACHMENT N
ACCEPTANCE TEST GENERAL CRITERIA

[THIS ATTACHMENT WILL NEED TO BE MODIFIED BASED ON THE TYPE AND DESIGN OF THE FACILITY]

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 shall include, but not be limited to, the following:

1. Interconnection:

(A) A visual inspection of all Interconnection equipment and verification of as-built drawings.

(B) Phase rotation testing to verify proper phase connections.

(C) Based on manufacturer's specification, test the local operation of the Facility's generator breaker(s) and inter-tie breaker(s), and other other breaker(s) which connect the Facility equipment to Company System – must open and close locally using the local controls.

(D) 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, (Diagram of Interconnection) for the Facility

(E) All 69 kV breaker disconnects and other high voltage switches will be inspected to ensure they are properly aligned and operated manually or automatically (if designed).

(F) Step-Up Transformer Enclosure(s) inspections – The Step-Up Transformer Enclosure(s) may be inspected to test and ensure that the equipment that Seller has installed is installed and operating correctly based upon agreed to design. Wiringmay 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 Step-Up Transformer Enclosure(s) may be tested to make sure there is adequate grounding of equipment.

(G) 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 that tie the Facility to Company's communications system.

(H) 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 69 kV breakers, if any, open as they are designed to open. (Back up relay testing)

(I) Metering section inspection; verification of metering PTs, CTs, and cabinet and the installation of the two Company meters

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

(C) Verification of dial-up telephone connection for 69 kV metering cabinet.

4. Drawings, Documentation and Equipment Warranties:

The items below are required components of the Acceptance Test and must be satisfied for successful completion of this Test.

(A) Electronic and three (3) hard copies of all Switchyard construction drawings, specifications, calibrations, and settings including as-built drawings.

(B) Equipment operating and maintenance manuals, spare parts lists, commissioning notes, as-built equipment settings, and other information related to the switchyard equipment.

(C) Contractor construction warranties and equipment warranties

(D) Phase rotation testing to verify proper phase connections.

(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) If agreed by the Parties in writing, some requirements may be postponed to the Control Systems Acceptance Test.

DRAFT REQUEST FOR PROPOSALS

FOR

VARIABLE RENEWABLE DISPATCHABLE GENERATION

ISLAND OF HAWAI'I

FEBRUARY 2, 2018

Docket No. 2017-0352

Model Wind and PV RDG PPAs

Attachment O

[Note: The body of the Companies' RDG PPAs for both PV and wind are the same for all three Companies and are therefore not reproduced as part of this exhibit. Some of the attachments to the RDG PPA for both PV and wind are island specific and such island specific attachments for Hawai'i are provided in Exhibit 8 of this Transmittal Letter]

Hawai'i Electric Light

ATTACHMENT O
CONTROL SYSTEM ACCEPTANCE TEST CRITERIA

[THIS ATTACHMENT WILL NEED TO BE MODIFIED BASED ON THE TYPE AND DESIGN OF THE FACILITY]

a. The Acceptance Test for the Facility will be conducted, following installation ofthe Facility. The Acceptance Test procedures will be in accordance with criteria set forth herein. The Acceptance Test shall be performed in accordance with Good Engineering and Operating Practices and demonstrate to Company's satisfaction that the Facility and the interconnection portion of the Facility, including Company-Owned Interconnection Facilities, has met the provisions of Article 8 (Company Dispatch), Appendix B (Active Power Interface, Performance Standards) Attachment (Diagram of Interconnection), and the Interconnection Agreement.

b. Acceptance Test procedures will be developed by Company for the Seller's review at least sixty (60) Days in advance of performing the tests based on the date provided by Seller.

c. The procedures will include, but not be limited to, demonstration of the functional requirements of the Facility defined in Article 8 (Dispatch) and Appendix B Section 3 (Performance Standards) such as, but not limited to:

   i. Interconnection equipment and communications to support remote monitoring of the Facility and control of Facility breakers

   ii. Droop characteristic

   iii. Real power delivery under remote Company Dispatch, Active Power Dispatch

   iv. Accrate provision of limits for Minimum and Maximum Dispatch (Power Possible, Minimum load capability)

   v. Ramp rates for controlled actions

   vi. Control of Facility breakers

   vii. Voltage regulation

d. Testing of primary and redundant communications between Company System Operator and Facility Operator

e. The actual dynamic response of the unit will be confirmed to allow Company transient stability model to reflect the as-left conditions of the unit. During the commissioning the following will be required:

   i. A final review by Company engineers of the equipment installed to control the operation and protect the plant will be needed upon installation and prior to the start of commercial operation.

   ii. The review will include off-line tuning and testing results of the excitation and governor control system and the IEEE block diagram utilized for the PSS/E dynamics program.

   iii. During the commissioning of the actual facilty, equipment system testing will be conducted to ensure that similar, well damped, expected responses will be produced by the facility. The as-left parameters obtained from governor and exciter tuning will be determined for use in the Company planning model.

f. The Seller will provide an estimate of the earliest date for the Acceptance Test at least ninety (90) Days before the date.

g. The Acceptance Test procedures for the Facility will be mutually agreed upon between Seller and Company prior to conducting the test.

h. When the Facility is ready for the Acceptance Test, Seller shall notify Company at least seven (7) Days prior to the test and shall coordinate with Company. Seller shall perform and Company shall monitor such test no earlier than seven (7) Days of Company’s receipt of such notice.

j. The Control Acceptance Test is to be successfully completed prior to the Commercial Operation Date.

Examples of the type of tests conducted to meet the aforementioned objectives may include, but is not limited to 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. Dispatch Test to verify if the Facility's active power limit controls and the Active Power Control Interface with the Company's EMS are working properly. The Test is generally conducted by setting different active power setpoints and limits and observing the proper dispatch at the appropriate ramp rate limiting of the Facility's real power output.

3. Control Test for Voltage Regulation 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 by delivering/receiving reactive power to/from the Company System to maintain the applicable setpoint according to the reactive power control and the reactive amount requirements of Sections 3(a) (Reactive Power Control) and Section 3(b) (Reactive Amount) of Attachment B (Facility Owned by Seller) to this Agreement.

4. Frequency Response Test to verify the Facility provides a frequency droop response as defined in this Agreement. Test is generally conducted by making adjustments of the frequency reference setting and verifying by observation that the Facility responds per droop and deadband settings, and appropriately modifies the Company issued Dispatch Setpoint.

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, for at least four (4) hours in any continuous 24-hour CSAT period.

B. The recorded renewable energy resource at the Facility is above **[600 W/m^2][a Measured Wind Speed of 9 meters per second]** 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 during the period of the successfully completed monitoring test is evaluated for, e.g. voltage regulation, frequency response, dispatch control, operating limits and ramp rate performance, to verify the performance meets the requirements of this Agreement according to the criteria set forth in the testing procedures. The Parties understand and agree that a successful completion of the test does not constitute 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, in particular, as required in Article 8.