



**Hawaiian  
Electric**

*Draft Project Specific Addendum*

*For*

*Standalone Storage*

*Projects Located on O‘ahu*

*Project Type: Standalone Storage*

*BESS Contract Capacity: \_\_\_\_\_ / \_\_\_\_\_ MW/MWh of Storage*

*Facility Location: \_\_\_\_\_*

*Is the Facility Location Owned by Hawaiian Electric Company?*

*No  Yes*

*If “Yes,” attach Attachment COS*

*Execution Date: \_\_\_\_\_*

May 2, 2022 Version

## PROJECT SPECIFIC ADDENDUM

This **PROJECT SPECIFIC ADDENDUM** is incorporated by reference into the **ENERGY STORAGE PURCHASE AGREEMENT** for the Facility identified on the coversheet of this Project Specific Addendum and is entered into coterminous with such Energy Storage Purchase Agreement as of \_\_\_\_\_, 20\_\_ (the “Execution Date”), by Hawaiian Electric Company, Inc, a Hawai‘i corporation (“Company”), and \_\_\_\_\_, [**insert type of entity and jurisdiction of organization**] (“Seller”). Together, the Company and Seller are the “Parties” and may singularly each be referred to as a “Party”.

**WHEREAS**, the Company has certain technical and contractual requirements that are specific to the individual islands;

**WHEREAS**, certain metrics are specific to this Facility;

**WHEREAS**, this Project Specific Addendum contains all of the island specific provisions and certain of the metrics that apply to this Facility;

**WHEREAS**, the Parties agree to abide by the provisions of this Project Specific Addendum, as hereinafter set-forth.

### **NOW, THEREFORE THE PARTIES AGREE AS FOLLOWS:**

1. The text of Section 29.24 (Hawai‘i General Excise Tax) of the Power Purchase Agreement for this Facility shall read as follows:

Hawai‘i General Excise Tax. Seller shall, when making payments to Company under this Contract, pay such additional amount as may be necessary to reimburse Company for the Hawai‘i general excise tax on gross income and all other similar taxes imposed on Company by any Governmental Authority with respect to payments in the nature of gross receipts tax, sales tax, privilege tax or the like, but excluding federal or state net income taxes. By way of example and not limitation, as of the Execution Date, all payments subject to the Hawai‘i general excise tax on O‘ahu (totaling 4.5% as of the Execution Date) would include an additional 4.712% so that the underlying payment will be net of such tax liability.

2. The following specifics apply to this Facility:

- (a) The “BESS Contract Capacity” is \_\_\_\_\_/\_\_\_\_ MW/MWh, which represents the anticipated maximum net instantaneous active power and maximum energy storage capability (MWh stored that represents a 100% State of Charge) for export to the Point of Interconnection upon Commercial Operations as proposed by Seller in its RFP Proposal.
- (b) Under Section 5.4 (Seller’s Annual Maintenance Schedule) of the Energy Storage Purchase Agreement for this Facility, the threshold for the maintenance outages that Seller is required to include in its written schedule of maintenance outages is any maintenance outage that will reduce the capacity of the Facility by an amount equal to or greater than 5 MW or 25% of the Allowed Capacity.
- (c) The “RTE Performance Metric” is \_\_\_\_\_%, which represents the lowest acceptable efficiency of the Facility for a full charge and discharge cycle as more fully set forth in Attachment W (BESS Tests) to the Energy Storage Purchase Agreement for this Facility.

**[DRAFTING NOTE: RTE PERFORMANCE METRIC TO BE TAKEN FROM RESPONSE TO RFP.]**

- (d) The “Lump Sum Payment” is \$ [REDACTED]. **[TO BE INCORPORATED BASED ON RESPONSE TO RFP.]**
- (e) The “Guaranteed Commercial Operation Date” is [REDACTED].
- (f) Under Section 13.3(a) of the Energy Storage Purchase Agreement for the Facility, the Guaranteed Commercial Operations Date may not be extended beyond [REDACTED]. **[DRAFTING NOTE: OUTSIDE DATE TO BE INSERTED BASED ON TYPE OF PROPOSAL.]**
- (g) The amount of “Daily Delay Damages” is \$ [REDACTED] per Day. **[DRAFTING NOTE: Calculate as follows: (Contract Capacity X \$50/kW) ÷ 180 Days = Daily Delay Damages.]**
- (h) As of the Execution Date, Seller is a subsidiary of [REDACTED], a [state type of entity and jurisdiction of organization], (the “Parent Entity”).
- (i) The “RFP” to which Seller responded in proposing this project is Company’s Request for Proposals for [REDACTED], Island of Oahu, issued on [REDACTED], 202[REDACTED].
- (j) Under Section 29.21(e) of the Energy Storage Purchase Agreement for the Facility, as of the Execution Date, the name and email address for Seller’s Community Representative is :

Name: [REDACTED]  
Email Address: [REDACTED]  
Phone Number: \_\_\_\_\_

- (k) The addresses and email addresses for Company and Seller under the “Notices” provisions of Section 29.3(a) of the Energy Storage Purchase Agreement for the Facility are as follows:

**[Hawaiian Electric Company, Inc]:**

By Mail:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Delivered By Hand or Overnight Delivery:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

By E-mail:

\_\_\_\_\_  
\_\_\_\_\_

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With a copy to:

By Mail:

Hawaiian Electric Company, Inc.  
Legal Division  
P.O. Box 2750  
Honolulu, Hawai'i 96840

By E-mail:

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

**Seller:** The contact information listed in Attachment A (Description of Storage Facility) hereto.

3. The definition of "Seller-Attributable Unavailability" reads as follows:

"Seller-Attributable Unavailability": Time periods during which the inverter in question (or the Facility as a whole) is not dispatched or is derated or shutdown (or the Facility is disconnected) because of any of the following:

- (i) The Facility's failure to comply with any of the Performance Standards, Good Engineering and Operating Practices, Governmental Approvals, applicable Laws or Seller's other obligations under this Agreement;
- (ii) Seller-Attributable System Conditions;
- (iii) Conditions at or on either side of the Point of Interconnection arising from the acts or omissions of Seller or any of its affiliates, employees, agents, contractors, vendors, materialmen, independent contractors or suppliers of Seller, acting in such capacity for the benefit of Seller ("Seller Representatives"), unless such acts or omissions are themselves excused by reasons of Force Majeure pursuant to Article 21 (Force Majeure) of this Agreement;
- (iv) A disconnection initiated by the Company pursuant to Article 9 (Personnel and System Safety) of this Agreement) that is caused by Seller or any Seller Representatives;
- (v) The Company has reasonably decided that it is inadvisable for such inverter (or the Facility as a whole) to continue normal operations without a further Control System Acceptance Test as provided in Section 7(a) (Testing Requirements) of Attachment B (Facility Owned by Seller);

- (vi) The Facility is deemed to be in Seller-Attributable Unavailability status under any of the following Sections of Attachment B (Facility Owned by Seller): Section 1(g)(vi), Section 1(j) (Demonstration of Facility) or Section 4(e);
- (vii) The Facility is shutdown at the direction of Company as provided in Section 6.4 (Shutdown For Lack of Reliable Real Time Data), and such shutdown is caused by Seller or any Seller Representatives; and
- (viii) The Facility fails to comply with Company Dispatch or other outage or derating as provided in Section 8.3 (Company Rights of Dispatch)

Each time period of Seller-Attributable Unavailability shall constitute an Outage or Deration, as applicable.

4. The following project specific provisions are attached to this Project Specific Addendum and constitute part the Agreement:

Attachment A (Description of Storage Facility)  
Exhibit A-1 (Good Standing Certificates)  
Exhibit A-2 (Ownership Structure)  
Attachment B (Facility Owned by Seller)  
Exhibit B-1 (Modeling Requirements)  
Exhibit B-2 (Energy Storage Capability Curve(s))  
Attachment C (Methods and Formulas For Measuring Performance Standards)  
Attachment D (Consultants List)  
Attachment E (Single-Line Drawing and Interface Block Diagram)  
Attachment F (Relay List and Trip Scheme)  
Attachment G (Company-Owned Interconnection Facilities)  
Attachment K (Guaranteed Project Milestones)  
Attachment K-1 (Seller's Conditions Precedent and Company Milestones)  
Attachment L (Reporting Milestones)  
Attachment N (Acceptance Test General Criteria)  
Attachment O (Control System Acceptance Test Criteria)

5. In addition to the foregoing Attachments:

- (a) If the coversheet of this Project Specific Addendum indicates that the Facility is located on a site owned by the Company, Attachment COS (Company-Owned Site) is attached to this Project Specific Addendum and constitutes part of the Agreement.



**IN WITNESS WHEREOF**, the Parties hereto have caused this Project Specific Addendum to be executed by their duly authorized representatives.

Hawaiian Electric Company, Inc

By \_\_\_\_\_  
Name:  
Its:

By \_\_\_\_\_  
Name:  
Its:

("Company")

**[NAME OF PROJECT ENTITY]**

By \_\_\_\_\_  
Name:  
Its:

By \_\_\_\_\_  
Name:  
Its:

("Seller")

ATTACHMENT A  
DESCRIPTION OF STORAGE FACILITY

1. Name of Facility:

(a) Location: (TMK No. )

(b) Telephone number (for system emergencies):

(c) E-mail Address:

(d) Contact Information for notices pursuant to Section 29.3 (Notices) of the Agreement:

Mailing Address:

Address for Delivery by Hand or Overnight Delivery:

Email Address:

2. Owner (If different from Seller):

If Seller is not the owner, Seller shall provide Company with a certified copy of a certificate warranting that the owner is a corporation, partnership or limited liability company in good standing with the Hawai'i Department of Commerce and Consumer Affairs which shall be attached hereto as Exhibit A-1 (Good Standing Certificates).

3. Operator:

4. Name of person to whom payments are to be made:

(a) Mailing address:

(b) Hawai'i Gross Excise Tax License number:



5. Equipment:

(a) Design and capacity

Total Facility Capacity ("Contract Capacity"):

Energy Storage \_\_\_\_\_ / \_\_\_\_\_ kW/kWH

Total Number of Energy Storage Units:

**[number and size of each unit, e.g., one (1) Brand X, 200 kW/800 kWh; one (1) Brand Y, 300 kW/1200 kWh. Brand is Make & Model.]**

Description of Storage Equipment:

**[For example: Describe the type of energy storage equipment, capacity, and any special features.]**

Individual Unit (Storage): **[if more than one type, list information for each type]**

	kW	kVAR Consumed	kVAR Produced
<u>At Full load</u>			
<u>At Startup</u>			

Storage Unit:

Type \_\_\_\_\_

Voltage \_\_\_\_\_ V, \_\_\_\_\_ phase

Frequency \_\_\_\_\_ Hz

Class of Protection \_\_\_\_\_

Rated Current \_\_\_\_\_ A

Rated Power Factor See Exhibit B-2

- (b) Description of Facility SCADA and control system(s)
- (c) The "Allowed Capacity" of this Agreement shall be the lower of (i) Contract Capacity or (ii) the net nameplate capacity (net for export) of the Facility installed by the Commercial Operations Date.
- (d) Seller may propose revisions to this Section 5 (Equipment) of Attachment A (Description of Generation, Conversion and Storage Facility) ("Section 5") for Company's approval prior to commencement of construction, provided, however, that (i) no such revision to this Section 5 shall change the type of Facility or the storage method; (ii) Seller shall be in compliance with all other terms and conditions of this Agreement; and (iii) such revision(s) shall not change the characteristics of the Facility equipment or the specifications used in the IRS. Any revision to this Section 5 complying with items (i) through (iii) above shall be subject to Company's prior approval, which approval shall not be unreasonably withheld. If Seller's proposed revision(s) to this Section 5 otherwise satisfies items (i) and (ii) above but not item (iii) such that Company, in its reasonable discretion, determines that a re-study or revision to all or any part of the IRS is required to accommodate Seller's proposed revision(s), Company may, in its sole and absolute discretion, conditionally approve such revision(s) subject to a satisfactory re-study or revision to the IRS and Seller's payment and continued obligation to be liable and responsible for all costs and expenses of re-studying or revising such portions of the IRS and for modifying and paying for all costs and expenses of modification to the Facility, the Company-Owned Interconnection Facilities based on the results of the re-studies or revisions to the IRS. Any changes made to this Attachment A (Description of Generation, Conversion and Storage Facility) or the Agreement as a result of this Section 5(f) of Attachment A (Description of Generation, Conversion and Storage Facility) shall be reflected in a written amendment to the Agreement.

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

reviews, approvals and/or re-studies or revisions to the IRS.

Any delay in completing, or failure by Seller to meet, any subsequent Seller milestones under Article 13 (Guaranteed Project Milestones Including Commercial Operations) as a result of any revision pursuant to this Section 5 by Seller (whether requiring a re-study or revision to the IRS or not) shall be borne entirely by Seller and Company shall not be responsible or liable for any delay or failure to meet any such milestones by Seller.

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

EXHIBIT A-1  
GOOD STANDING CERTIFICATES

EXHIBIT A-2  
OWNERSHIP STRUCTURE

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 the "Final" Single-Line Drawing, the "Final" Interface Block Diagram and the "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) Modeling. Seller shall provide the models as set forth in Exhibit B-1.
- (iv) No Material Changes. Seller agrees that no material changes or additions to the 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 are not limited to:**

- **Seller-Owned Interconnection Facilities**
- **Substation**
- **Control and monitoring facilities**
- **Transformers**
- **Battery Energy Storage System ("BESS") equipment (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 gang operated, load breaking, lockable 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") equipment (remote terminal unit or equivalent) and certain relaying if necessary for the interconnection. Seller shall also provide AC and DC source lines as specified 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 have 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 (if required). The settings shall be consistent with the requirements for over/under frequency and voltage ride-through. 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:

- (i) Interface with Company's Telemetry and Control, 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 Telemetry and Control, 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 Telemetry and Control, 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;
- (iv) Interface with Company's Telemetry and Control, or designated communications and control interface, to provide the active power control requirements of this Agreement;

- (v) Interface with Company's Telemetry and Control, or designated communications and control interface, for the Company to specify control system modes of operation and parameters, for remotely configurable parameters and operating states required under this Agreement;
- (vi) Interface with Company's Telemetry and Control, or designated communications and control interface, to provide telemetry of inverter availability and energy storage system state and status.
- (vii) Unless agreed otherwise by Company and Seller in writing, Seller shall provide such analog telemetry to Company via SCADA communication and protocol acceptable to Company at a continuous scan updated not less frequently than every 2 seconds; and
- (viii) Provision for Loss of Telemetry and Control: If Company's Telemetry and Control, or designated communications and control interface, is unavailable, due to loss of communication link, Telemetry and Control 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 5 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 and real power export or import as directed by the Company System Operator.

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. Cybersecurity and Critical Infrastructure Protection.

(i) Security Policies and Documentation.

Seller shall implement and document security policies and standards in accordance with industry best practices (e.g., aligned with the intent of NERC CIP-003-8 R2) and consistent with Company's security policies and standards. Seller shall submit documentation describing the approach, methodology, and design to provide physical and cyber security (i.e., aligned with the intent of NERC CIP-003-8 R2) 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, consistent with the National Institute of Standards and Technology ("NIST") guidelines as indicated in Special Publication 800-53 Rev. 4 "Security and Privacy Controls for Federal Information Systems and Organizations" and Special Publication 800-82 Rev. 2 "Guide to Industrial Control Systems (ICS) Security". The system shall be designed with the criteria to meet applicable compliance requirements and identify areas that are not consistent with NIST guidelines and recommendations.
- The cybersecurity 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.
- Seller shall, at the request of Company or, in the absence of any request from Company, at least annually during the term of this Agreement, provide Company with updated documentation and diagrams including a record of changes.

(ii) Network and Application Security. Seller shall implement appropriate network and application security processes and practices commensurate with the level of risk as determined by periodic risk assessments (i.e., aligned with the intent of NERC CIP-005-5):

- Segment and segregate networks and functions, including physical and logical separation between business networks and control system networks (i.e., aligned with the intent of NERC CIP-005-5 R1).
- Limit unnecessary lateral communications (i.e., aligned with the intent of NERC CIP-005-5 R1).
- Harden network devices (i.e., aligned with the intent of NERC CIP-007-6 R1).

- Secure access to infrastructure devices (i.e., aligned with the intent of NERC CIP-004-6 R4).
- Perform out-of-band (OoB) network management (i.e., aligned with the intent of NERC CIP-005-5 R2).
- Validate integrity of hardware and software (i.e., aligned with the intent of NERC CIP-010-3 R1 and NERC CIP-006-6 R1 Part 10).

(iii) Endpoint and Server Security. Seller shall implement appropriate endpoint and server security processes and practices commensurate with the level of risk as determined by periodic risk assessments:

- Mechanisms to identify vulnerabilities and apply security patches in a timely manner (i.e., aligned with the intent of NERC CIP-007-6 R2).
- Malware defense and anti-phishing capabilities (i.e., aligned with the intent of NERC CIP-007-6 R3).
- Access Controls to enforce the least privilege principle and provide access to resources only for authorized users (i.e., aligned with the intent of NERC CIP-004-6 R4).
- Secure authentication mechanisms including multi-factor authentication for systems with higher risk exposure (i.e., aligned with the intent of NERC CIP-007-6 R5 and NERC CIP-005-5 R2).
- Data confidentiality, protection, and encryption technologies for endpoints, servers, and mobile devices (i.e., aligned with the

intent of NERC CIP-011-2 R1 and NERC CIP-005-5 R2).

Seller shall (consistent with the following sentence) ensure that no malicious software ("Malware") or unauthorized code is 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 shall periodically review, analyze and implement improvements to and upgrades of its Malware prevention and detection 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.

- (iv) Cybersecurity Program. Seller shall establish and maintain a continuous cybersecurity program (i.e., aligned with the intent of NERC CIP-003-8) that enables the Seller (or its designated third party) to:
  - (aa) Define the scope and boundaries, policies, and organizational structure of the cybersecurity program.
  - (bb) Conduct periodic risk assessments to identify the specific threats to and vulnerabilities of the Seller's Organization consistent with guidance provided in NIST Special Publication

800-30 Rev. 1 "Guide for Conducting Risk Assessments".

- (cc) Implement appropriate mitigating controls and training programs and manage resources.
- (dd) Monitor and periodically test the cybersecurity program to ensure its effectiveness. Seller shall review and adjust their cybersecurity program as appropriate for any assessed risks.
- (ee) Applicability is extended to Cloud Service providers and other third-party services the Seller may use.
- (v) Security Monitoring and Incident Response. Company and Seller shall collaborate on security monitoring and incident response, define points of contact on both sides, establish monitoring and response procedures, set escalation thresholds, and conduct training (i.e., aligned with the intent of NERC CIP-008-5). Seller shall, at the request of Company or, in the absence of any request from Company, at least quarterly, provide Company with a report of the incidents that it has identified and describe measures taken to resolve or mitigate.

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 (aa) notify Company of such potential, suspected or actual security breach, whether or not such breach has compromised any of Company's confidential information; (bb) investigate and promptly remediate the effects of the breach, whether or not the breach was caused by Seller; (cc) cooperate with Company with respect to

any such breach or unauthorized access or use; (dd) comply with all applicable privacy and data protection laws governing Company's or any other individual's or entity's data; and (ee) 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.

If malicious software or unauthorized code is found to have been introduced into the Environment, Seller will promptly notify Company. 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 shall promptly report to Company the nature and status of all efforts to isolate and eliminate malicious software or unauthorized code.

- (vi) Monitoring and Audit. Seller shall provide information on available audit logs and reports relating to cyber and physical security (i.e., aligned with the intent of NERC CIP-007-6 R4). Company may audit Seller's records to ensure Seller's compliance with the terms of this Section 1(b)(iii)G (Cybersecurity and 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.



(vii) Contingency Plans. Seller shall implement and maintain a business continuity plan, a disaster recovery plan, and an incident response plan ("Contingency Plans" - i.e., aligned with the intent of NERC CIP-009-6) appropriate for the level of risk based on the impact of Seller's associated facilities, systems and equipment, which, if destroyed, degraded, misused, or otherwise rendered unavailable, would affect the reliable operation of the Company System. The Contingency Plans shall be provided to Company upon request. Such Contingency Plans shall be updated to reflect lessons learned from real recovery events.

(viii) Supply Chain Risk Management. Seller shall implement and maintain a supply chain risk management plan with implementation of appropriate security controls (i.e., aligned with the intent of NERC CIP-013-1). Controls should address the following security considerations: (1) software integrity and authenticity; (2) vendor remote access; (3) information system planning; and (4) vendor risk management and procurement controls.

H. 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 Material, 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 and protection coordination study, including fuse selection and AC/DC Schematic Trip Scheme (part of design drawings), for the Facility to Company during the 60% design. Company, at its option, may, with reasonable frequency, witness Seller's operation of control, synchronizing, and protection schemes and shall have the right to periodically re-specify the settings. Seller shall utilize relay settings prescribed by Company, which may be changed over time as Company System requirements change.

(d) Disconnect Device. Seller shall provide a manually operated disconnect device which provides a visible break to separate Facility from Company System. Such disconnect device shall be lockable in the OPEN position and be readily accessible to Company personnel at all times.

(e) Other Equipment. Seller shall install, own and maintain the infrastructure associated with the Revenue Metering Package, including but not limited to all enclosures (meter cabinets, meter pedestals, meter sockets, pull boxes, and junction boxes, along with their grounding/bonding connections), CT/PT mounting structures, conduits and ductlines, enclosure support structures, ground buses, pads, test switches, terminal blocks, isolation relays, telephone surge suppressors, and analog phone lines (one per meter), subject to Company's review and approval. **[COMPANY TO REVISE THIS SECTION J(e) PRIOR TO EXECUTION FOR SPECIFICS OF THE PROJECT.]**

(f) Maintenance Plan. Seller shall maintain Seller-Owned Interconnection Facilities in accordance with Good Engineering and Operating Practices and 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.

- (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 import or 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 control the net real power import to or export from the entire Facility remotely from the Company System Operations Control Center through control signals from the Company System Operations Control Center.
- (ii) Company shall review and provide prior written approval of the design for the Active Power Control Interface to ensure compatibility with Company's SCADA and EMS 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 Telemetry and Control, 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) controls.
- (iv) The Active Power Control Interface shall also include provision for feedback points from the

Facility indicating when the Company System Operator active power controls are in effect and the analog value of the controls received from the Company. The Facility shall provide the feedback to the Company SCADA system within 2 seconds of receiving the respective control signal from the Company.

- (v) Seller shall provide an analog input to the Telemetry and Control for the MW input or output of the individual generating units, and an analog signal for the total MW input or output at the Point of Interconnection.
- (vi) The Active Power Control Interface shall provide for remote control of the net real power input or output of the Facility by the Company at all times. If the Active Power Control Interface is unavailable or disabled, the Facility shall not import or export net real power from or to Company, and the Facility shall be deemed to be in Seller-Attributable Non-Generation status, unless the Company, in its sole discretion, agrees to supply or accept net real power and Seller and Company agree on an alternate means of dispatch. The alternate means of dispatch, including but not limited to local controls, is to be the temporary dispatch mechanism until the Active Power Interface is returned to service and must be capable of changing the real power export or import as directed by the Company System Operator within 5 minutes (or such other period as Company accepts in writing) of the Seller receiving the directive by the Company System Operator, verbal or otherwise permitted by such alternate means. Notwithstanding the foregoing, if Seller fails to provide such remote control features (whether temporarily or throughout the Term) and fails to discontinue importing or 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 features are not provided and the Facility shall be deemed to be in Seller-Attributable Non-Generation status for such periods.

- If all local and remote active power controls become unavailable or fail, the Facility shall immediately disconnect from the Company's System.
- If the direct transfer trip is unavailable due to loss of communication link, Telemetry and Control failure, or other event resulting in the loss of the remote control by the Company, provision must be made for the Seller to ramp down and shutdown Facility and open and lockout the main circuit breaker.

(vii) The rate at which the Facility changes net real power import or export shall not exceed the ramp rate specified in Section 3(c) (Ramp Rate) of Attachment B (Facility Owned by Seller). The Facility's Active Power Control Interface will control the rate at which electric energy is changed to achieve the active power dispatch. The Facility will respond to the active power control request immediately. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY FOLLOWING COMPLETION OF THE IRS]**

(viii) The Active Power Control Interface shall accept the following active power control(s) from the Company SCADA and EMS systems:

- **Maximum Power Import and Export Limits:** The Facility is not allowed to exceed these settings under any circumstances. The primary frequency response control specified in Section 3(m) (Primary Frequency Response) of Attachment B (Facility Owned by Seller) is not allowed to increase the Facility's net real power import or export above the Import and Export limits, respectively.
- **Power Reference Set Point:** The Facility is to import or export active power at this level to the extent allowed by the energy storage and is not allowed to exceed this setting when system frequency is within the deadband determined in Section 3(m)(iii) of Attachment B (Facility Owned by Seller). When system

frequency exceeds the deadband determined in Section 3(m) (iii) of Attachment B (Facility Owned by Seller), the Facility's net real power import or export is allowed to exceed this setting or be further reduced below this setting when commanded by the primary frequency response control specified in Section 3(m) of Attachment B (Facility Owned by Seller).

- Any additional remote controls necessary to enable, disable, dispatch and/or schedule the energy storage system real power and energy operations mutually agreed upon in writing by the Parties.
  - Inverter Enable/Disable Control: The Facility shall include an inverter Enable/Disable control. When Disable is selected, the Facility shall ramp down, shutdown, and leave offline its inverters. When Enable is selected, the Facility inverters can start up, ramp up, and remain in normal operations.
- (ix) Seller shall not override Company's active power controls without first obtaining specific approval to do so from the Company System Operator.
- (x) The requirements of the Active Power Control Interface may be modified as mutually agreed upon in writing by the Parties.
- (h) Control System Acceptance Test Procedures.
- (i) Conditions Precedent. The following conditions precedent must be satisfied prior to conducting the Control System Acceptance Test:
- Successful completion of the Acceptance Test.
  - Facility has been successfully energized.
  - All of the Facility's inverters and storage units 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, statcom, etc.) shall have been commissioned and be operating within normal parameters.
- (ii) Facility Energy Equipment. In the event that all or any portion of the Facility's energy equipment is not 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 equipment are consistent with the results that would have been attained if all of the equipment had been available for the duration of the test.
- (iii) 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 Storage 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, including Force Majeure, 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 and 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 or such longer time period agreed to in writing by Company, a written report of both the results of such investigation and the corrective action taken by Seller; provided, that, if thirty (30) Days is not a reasonable time period to investigate the matter, implement corrective action and provide such written report, Seller shall complete the foregoing within such longer commercially reasonable period of time agreed to by the Parties in writing. 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 Qualified Independent Third-Party Consultants List attached to the Agreement as Attachment D (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 the selected consultant determines such



study cannot reasonably be completed within ninety (90) Days, in which case, such longer period of time as it takes the selected consultant determines is necessary to complete the such study shall apply. 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 such recommendation cannot reasonably be implemented within forty-five (45) Days, in which case, Seller shall implement such recommendations within such longer commercially reasonable period of time agreed to by the Parties in writing. Failure to implement such recommendations within this period shall constitute a material breach of this Agreement. Unless the aforementioned written report and study are being completed, and any recommendations are being implemented, solely to address Seller's failure to satisfy the requirements storage Round Trip Efficiency of this Agreement, the Company shall have the right to declare the Facility derated and the Facility shall be deemed to be in Seller-Attributable Non-Generation status until Seller's aforementioned written report has been completed, any subsequent study commissioned by the Parties has been completed and any recommendations to resolve the non-compliance have been implemented to Company's reasonable satisfaction.

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 and Return to Service. Under no circumstances shall Seller, when separated from the Company System for any reason, including tripping during disturbances or due to equipment failure, reclose into the Company System without first obtaining specific approval to do so from the Company System Operator. Ramp rates, behavior and mode of operation upon return to service shall conform to verbal instructions from the System Operator or Active Power control from Company. Following local or system-wide outage conditions, the Facility shall not attempt to automatically reconnect to the grid (unless directed by the Company System Operator) so as to not interfere with Company System Operator blackstart procedures.
- (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 import or export net real power 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 inverter 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). **[FOR FACILITIES CONNECTED TO THE DISTRIBUTION SYSTEM, THESE REQUIREMENTS MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS.]**
- (b) Reactive Amount. **[THESE REQUIREMENTS MAY BE CHANGED BY COMPANY UPON COMPLETION OF THE IRS.]**
- (i) Seller shall have sufficient equipment so that each \_\_\_\_\_ kVA energy storage unit online at the Facility will have the ability to deliver or receive, at its terminal, reactive power as illustrated in the **[energy storage unit]** curve[s] attached to this Agreement as Exhibit B-2 (Energy Storage Capability Curve(s)). **[NOTE: THE IRS WILL DETERMINE IF ANY ADDITIONAL REACTIVE POWER RESOURCES WILL BE REQUIRED.]**
- (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 fluctuations.
- (iii) The Facility reactive power control shall perform to the Appendix A, Section 4, Reactive Power-Voltage Control specifications of the NERC "Reliability Guideline, BPS-Connected Inverter-Based Resource Performance" (September 2018) except when otherwise specified in Sections 3 (a) and 3 (b) of this Attachment B (Facility Owned by Seller).
- The Facility reactive power control for voltage disturbances within +/- 5% of the Point of Interconnection nominal voltage shall have a rise time of less than 2 seconds.
  - The Facility reactive power control for voltage disturbances exceeding +/- 5% of the

Point of Interconnection nominal voltage shall have an overshoot of less than \_\_\_%.

- The terms "Rise time" and "overshoot" in Section 3(b)(iii) of this Attachment B (Facility Owned by Seller) shall be as defined in Appendix A, Section 4, Reactive Power-Voltage Control specifications of the NERC "Reliability Guideline, BPS-Connected Inverter-Based Resource Performance" (September 2018).
- (iv) 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 start up, Seller adjusting the Facility Actual Output, and shut down as calculated in accordance with Attachment C (Methods and Formulas For Measuring Performance Standards).

Maximum Ramp Rate Upward and Downward of 2 MW/minute.

- (ii) Upon receiving a command from the Company active power 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 import or export at a ramp rate, as calculated in accordance with Attachment C (Methods and Formulas for Measuring Performance Standards), to be specified by the Company to the extent allowed by the renewable resource and energy storage without exceeding such ramp rate and without intentional delay. Such ramp rate shall be in the range of \_\_\_ MW/min to \_\_\_ MW/min.
- (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 net real power import or export is changed by the primary frequency response control described in Section 3(m) (Primary Frequency Response) of this Attachment B (Facility Owned by Seller).

(d) Ride Through Requirements.

In meeting the voltage and frequency ride-through requirements in this Attachment B, Sections 3(e), 3(f), 3(i), and 3(j), the Facility shall not enter momentary cessation of operations within the voltage and frequency zones and time periods where the Facility must remain connected to the Company System. **[THIS PROVISION MAY BE ADJUSTED BY COMPANY UPON COMPLETION OF THE IRS IF MOMENTARY CESSATION IS NEEDED TO PREVENT EQUIPMENT DAMAGE DUE TO A POWER EQUIPMENT LIMITATION. DOCUMENTATION FROM THE EQUIPMENT MANUFACTURER OF SUCH LIMITATION SHALL BE PROVIDED TO COMPANY IN WRITING FOR THE OWNER'S RFP SUBMITTAL AND THE CONDUCT OF THE IRS.]**

(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). **[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.]**:

$0.88 \text{ pu} \leq V \leq 1.00 \text{ pu}$       The Facility remains connected to the Company System.

$0.70 \text{ pu} \leq V < 0.88 \text{ pu}$       The Facility may initiate disconnection from the Company System if the voltage remains in this range for more than 20 seconds.

$0.40 \text{ pu} \leq V < 0.70 \text{ pu}$       The Facility may initiate disconnection from the Company System if the voltage remains in this range for more than 10 seconds.

0.00 pu  $\leq$  V < 0.40 pu      The Facility may disconnection from the Company System if voltage remains in this range for more than 600 milliseconds.

Seller shall have sufficient capacity to fulfill the above mentioned requirements to ride-through the following sequences or combinations thereof. **[THE ACTUAL CLEARING TIMES WILL BE DETERMINED BY COMPANY IN CONNECTION WITH THE IRS]**

- Normally cleared 138 kV transmission faults cleared after 5 cycles with one reclose attempt, cleared in 5 cycles, 30 cycles after the initial fault was cleared. The voltage at the Point of Interconnection will recover above the 0.80 p.u. level for the 30 cycles between the initial clearing time and the reclosing time.
- Normally cleared 46kV subtransmission faults cleared in 7 cycles with one reclose attempt, cleared in 7 cycles, 23 cycles after the initial fault was cleared. The voltage at the Point of Interconnection will recover above the 0.80 p.u. level for the 23 cycles between the initial clearing time and the reclosing time.

(f) Over Voltage Ride-Through.

The overvoltage protection equipment at the Facility shall be set so that the Facility will meet the following overvoltage ride-through requirements during high voltage affecting one or more of the three voltage phases (as described below) ("V" is the voltage of any of the three voltage phases at the Point of Interconnection). **[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  $\leq$  V  $\leq$  1.10 pu      The Facility remains connected to the Company System.

1.10 pu < V ≤ 1.20 pu      The Facility may initiate disconnection from the Company System if voltage remains in this range for more 0.92 seconds.

V > 1.2 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.

(g) Transient Stability Ride-Through.

In all modes, 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. The Facility shall provide the options of being configured as active power priority or reactive power priority during the ride-through. The selection of the appropriate priority of the Facility shall be determined by the Interconnection Requirements Study. **[TO BE PROVIDED UPON COMPLETION OF IRS].**

(h) Voltage Phase Angle Change Ride-Through.

(i) The Facility shall ride through positive-sequence phase angle changes within a sub-cycle-to-cycle time frame of the voltage at the Point of Interconnection of less than or equal to 30 electrical degrees. In addition, the Facility shall remain in operation for any change in phase angle of individual phases caused by occurrence and clearance of unbalanced faults, provided that the positive-sequence angle change does not exceed the forestated criterion. Active and reactive current oscillations in the post-disturbance period that are positively damped shall be acceptable in response to phase angle changes. Momentary cessation in the post-disturbance period shall not be permitted.

(ii) Inverter phase lock loop (PLL) loss of synchronism shall not cause the inverter to trip or enter momentary cessation within the voltage and frequency ride-through region. Inverters must be capable of riding through temporary loss of synchronism, and regain synchronism, without causing a trip or momentary cessation of the resource.

(i) Underfrequency Ride-Through.

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

57.0 Hz  $\leq$  f  $\leq$  60.0 Hz      The Facility remains connected to the Company System.

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

f < 56.0 Hz      The Facility may initiate disconnection from the Company System immediately.

(j) Overfrequency Ride-Through.

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

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

63.0 Hz < f  $\leq$  64.0 Hz      The Facility shall initiate disconnection from the Company System if frequency remains in this range for more than 20 seconds.



f > 64.0 Hz

The Facility shall initiate disconnection from the Company System immediately.

(k) Voltage Flicker.

Any voltage flicker on the Company System caused by the Facility shall not exceed the limits stated in IEEE Standard 1453-2015, or latest version "Recommended Practice for the Analysis of Fluctuating Installations on Power Systems".

(l) Harmonics.

Harmonic distortion at the Point of Interconnection caused by the Facility shall not exceed the limits stated in IEEE Standard 519-2014, 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) Primary Frequency Response.

Seller Facility shall provide a primary frequency response with a frequency droop characteristic reacting to system frequency fluctuations at the Point of Interconnection in both the overfrequency and underfrequency directions except to the extent such response is not operationally possible because of the level of available renewable resource and depletion of energy storage.

(i) The Facility primary 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 import or export when system frequency is not 60 Hz based on frequency deadband and frequency droop settings specified by the Company.

(ii) The Facility primary frequency response control shall be allowed to increase the net real power import or export above the Power Reference Set Point set under Section 1(g)(viii) of this Attachment B (Facility Owned by Seller) or

further decrease the net real power import or export from the Power Reference Set Point in its operations.

- (iii) The frequency deadband shall be settable in the range from +/-0.01 Hz to +/- 0.10 Hz with a default deadband of +/- 0.02 Hz and the frequency droop shall be settable in the range of 0.1% to 10% with a default droop of 5.0%.
- (iv) The Facility primary frequency response control shall be in continuous operation when the Facility is online and connected to the Company unless directed otherwise by the Company.
- (v) The Facility primary frequency response shall perform to the Appendix A, Section 3, Active Power-Frequency Control specifications of the NERC "Reliability Guideline, BPS-Connected Inverter-Based Resource Performance" (September 2018) except when otherwise specified in Section 3(m) (Primary Frequency Response) of this Attachment B (Facility Owned by Seller).

- (n) Grid Forming ("GFM"). **[DRAFTING NOTE: TO BE DELETED IF SELLER'S PROPOSAL DID NOT OFFER GRID FORMING.]**

GFM control sets an internal voltage waveform reference such that an inverter with the GFM control shall be able to synchronize with the grid and regulate active and reactive power generation appropriately, regardless of the grid's strength, or operate independently of other generation. An inverter with GFM control shall immediately respond to grid disturbances to support stability of the grid and maintain its own control stability during the system disturbance.

Seller Facility inverters shall be designed with GFM control and be capable of operating in GFM mode supporting system operation under normal and emergency conditions without relying on the characteristics of synchronous machines. While in GFM mode, the inverters shall support grid operation, consistent with tariff requirements, as a continuous ac voltage source during normal and transient conditions (as long as no limits are reached within the inverter) and be able to

synchronize to other voltage sources and operate autonomously if a grid reference is unavailable, and shall be able to share active and reactive power burden with other voltage sources without impacts on system stability.

Seller shall provide information to the Company regarding control design, capabilities, characteristics, etc. of the GFM control of the Facility for Company review and approval. Additional specifics of the GFM control may be defined during the IRS.

**Specifically, the GFM controls shall have the following functions and characteristics:**

- (i) Allow Seller Facility to operate in stable manner on low system strength grids (e.g. low short circuit ratio, low inertia, inertia-less system, etc.)
- (ii) Sets an internal voltage waveform reference and is able to synchronize with the grid or operate independently of other generation.
- (iii) Responds to system condition changes (i.e. frequency change and voltage change) beyond the control deadband in a timely manner by contributing towards the subsequent recovery of system frequency and voltage to the pre-disturbance value, assuming energy and power margins are available.
- (iv) Provide damping control function which damps oscillation within the interconnection and other adverse interactions among GFM and Grid following ("GFL") Inverter Based Resources (IBRs) and other power electronic devices on the grid.
- (v) Upon the loss of the last synchronous machine in the power system, GFM will have the ability to operate autonomously if a grid reference is unavailable and be able to share active and reactive power burden with other voltage sources without impacts on system stability.
- (vi) Ability to transition from an electrical island to a grid-connect configuration without an impact to system stability.

- (vii) Provide active low-order harmonics cancellation (as applicable).

Seller shall operate the Facility in grid forming mode only as directed by the Company System Operator, in its sole discretion. The Facility shall be required to communicate to the Company its parameters and settings pertaining to grid forming mode.

The grid forming control block diagram shall be submitted to the Company for review. The design shall be approved in writing by the Company and implemented by the Seller prior to control system testing. This shall include initial settings for tunable controls parameters based on modeling. The initial control parameters may be modified by seller on company request; based on field data and performance, subsequent system resource changes, etc. to achieve acceptable system stability.

- (o) Blackstart. The Facility shall be able to blackstart, start and energize itself without support from the Company System to the extent allowed by the operating limits of the Facility. **[DRAFTING NOTE: TO BE DELETED IF SELLER'S PROPOSAL DID NOT OFFER BLACKSTART.]**
  - (i) At the Company System Operator's sole discretion and to the extent of the operating limits of the Facility, the Facility shall blackstart and energize a part of the Company System as directed by the Company System Operator.
  - (ii) Upon blackstart and energization of a part of the Company System, the Facility shall:
    - a. Voltage Regulation according to Section 3(a) (Reactive Power Control) and Section 3(b) (Reactive Amount) of this Attachment B (Facility Owned by Seller).
    - b. Frequency Control with an isochronous governor to a frequency target initially set to 60 Hz and adjustable at the sole discretion of the Company System Operator.
    - c. Supply power to the part of the Company System that the Facility has energized, which shall include supplying power to start

synchronous and other inverter-based generating resources.

- d. Blackstart and operate in grid forming mode as described in Section 3(n) of this Attachment B (Facility Owned by Seller).
  - (iii) The Facility shall seamlessly and bumplessly transition from blackstart mode to normal operating mode as directed by and at the sole discretion of the Company System Operator. The blackstart control mode status shall be telemetered to Company through SCADA.
  - (iv) The Facility shall maintain a minimum level of energy in the Facility storage system for blackstart use to be specified by the Company in its sole discretion.
  - (v) The Facility blackstart design and configuration, including the isochronous governor, shall be subject to the prior written approval of Company in its sole discretion and implemented by Seller prior to conducting the CSAT. The blackstart design and configuration may be modified by mutual agreement of Seller and Company.
- (p) [Reserved]
- (q) Rate of Change of Frequency ("ROCOF"). The Facility shall ride through and shall not trip for frequency excursions having an absolute rate of change of frequency ("ROCOF") magnitude that is less than or equal to 5.0 Hz/s. Upon mutual agreement between the Company and the Seller, the Facility may be required to ride through and not trip for higher ROCOF levels. To the extent the Facility inverter-based resources are capable, the Facility shall not use rate-of-change-of-frequency protection unless an equipment limitation exists that requires the inverter to trip on ROCOF magnitude greater than 5.0 Hz/s. Company should be informed by Seller about the equipment limitation of the ROCOF. Any ROCOF tripping must be approved by Company.
- (r) Self-Energization. Seller's Facility shall be able to self energize, i.e. start and energize itself without connecting with the Company System. The process of

interconnecting the energized Facility with the Company System shall be seamless and bumpless using an auto-synchronizing circuit breaker. Immediately upon connecting to the Company System, the Facility shall transition to the normal operating mode. The self-energization control mode status shall be telemetered to the Company through SCADA.

4. Maintenance of Seller-Owned Interconnection Facilities.

- (a) Seller must address any Disconnection Event (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 Event" is a disconnection from Company System of at least \_\_\_\_ MW [**TO BE DETERMINED BY COMPANY FOLLOWING THE IRS**] and/or disconnection of the Facility from the Facility over a "rolling 120-second period", (i) that is not the result of Company dispatch, frequency droop response, or isolation of the Facility resulting from designed protection fault clearing, and (ii) for which Company does not issue for such disconnection the written notice for failure to meet operational and performance requirements as set forth in Section 1(j) (Demonstration of Facility) of this Attachment B (Facility Owned by Seller). Seller). A "rolling 120-second period" means a period that is comprised of 120 seconds and such rolling period will change as each new one (1) second elapses. With the elapse of each new one (1) second, the newest one (1) second would be added to the 120-second period, and the oldest one (1) second would no longer be included in the rolling 120-second period. Company's election to exercise its rights under Section 1(j) (Demonstration of Facility) shall not relieve Seller of its obligation to comply with the requirements of this Section 4 (Maintenance of Seller-Owned Interconnection Facilities) for any future Disconnection Event during the pendency of such election or thereafter.
- (b) For every Disconnection Event, Seller shall investigate the cause. Within three (3) Business Days of the Disconnection Event, Seller shall provide, in writing to Company, an incident report that summarizes the sequence of events and probable cause.

- (c) Within forty-five (45) Days of a Disconnection Event, 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 Event ("Proposed Actions"). Company may assist Seller in determining the causes of and recommendations to remedy or prevent a Disconnection Event ("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) the Proposed Actions, (iv) Company's Recommendations, and/or (v) 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 Event (and each subsequent Disconnection Event) 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 Event, (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 Event (and each subsequent Disconnection Event) within any Contract Year, unless the Qualified Consultant determines the Study cannot reasonably be completed within ninety (90) Days, in which case, such longer period of time as the Qualified Consultant determines is necessary to complete the Study shall apply. 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 such design changes, operating and maintenance procedure changes, modifications, and/or maintenance cannot reasonably be completed within forty-five (45) Days, in which case, Seller shall complete the foregoing within such longer commercially reasonable period of time agreed to by the Parties in writing. Company shall have the right to derate the Facility to a level that maintains reliable operations in accordance with Good Engineering and Operating Practices, and the Facility shall be deemed to be in Seller-Attributable Non-Generation status, until the study has been completed and the study's recommendations have been implemented by Seller to Company's reasonable satisfaction. 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) whether a Disconnection Event occurred, (ii) the sequence of events and/or probable cause of the Disconnection Event, (iii) the Proposed Actions, (iv) the Company's Recommendations, and (v) 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 such disagreement shall constitute a Dispute for which either Party may pursue the dispute resolution procedure set forth in Section 28.2 (Dispute Resolution Procedures, Mediation) 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 inverters 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 inverters 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) of this Attachment B (Facility Owned by Seller) 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. 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, or, alternatively, fail to issue a Source Code LC, 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); provided, that Seller has also failed to provide a satisfactory Source Code LC as set forth in Section 6(b)(ii) (Source Code Security) of this Attachment B (Facility Owned by Seller) shall constitute an Event of Default pursuant to Section 15.2(f) 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 Hawaiian **Electric Company, Inc. ("Hawaiian Electric")**, and (ii) Hawaiian Electric is entitled to a copy of the Source Code of the Required Models Pursuant to Section 6(b)(i)(B) (Release Conditions) of Attachment B (Facility Owned by Seller) of the Energy Storage Power Purchase Agreement dated as of \_\_\_\_\_, between \_\_\_\_\_, and Hawaiian Electric.

- E. Authorized Use. If Company becomes entitled to a release of the Source Code of the Required Models from escrow, Company may thereafter correct, modify, update and enhance the Required Models for the sole purpose of providing itself the support and maintenance it otherwise would have been entitled to if it had been provided the Required Models by Seller under Section 6(a) (Seller's Obligation to Provide Models) of this Attachment B (Facility Owned By Seller) (the "Source Code Authorized Use").
- F. Confidentiality Obligations. Company shall keep the Source Code of the Required Models confidential pursuant to the confidentiality obligations of the Source Code Escrow Agreement. Company shall restrict access to the Source Code of the Required Models to those employees, independent contractors and consultants of Company who have agreed in writing to be bound by confidentiality and use obligations consistent with those specified in the Escrow Agreement, and who have a need to access the Source Code of the Required Models on behalf of Company to carry out their duties for the Source Code 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) Source Code Security.

- (A) Establishment of Source Code Security. 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 (the "Source Code LC") 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 chartered in the United States with a credit rating of "A-" or better from Standard & Poor's or A3 or better from Moody's. 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) or Section 6(b)(i)(C) (Remedies) 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 for a breach under Section 6(a) (Seller's Obligation to Provide Models), or within thirty (30) Days following receipt of such notice for a breach under Section 6(b)(i)(C) (Remedies).

- (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) (Source Code Security) 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 ("Proceeds Escrow Agent") subject to an escrow agreement acceptable to Company ("Proceeds Escrow Agreement"). 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 Proceeds Escrow Agreement governing such escrow account shall give Company the sole

authority to draw from the account. Seller shall not be a party to such Proceeds Escrow Agreement 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 Proceeds 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 Hawaiian **Electric Company, Inc.** ("Hawaiian Electric"), and (ii) Hawaiian Electric is entitled to \$ \_\_\_\_\_, pursuant to Section 6(b)(ii)(B) (Release Conditions) of Attachment B (Facility Owned by Seller) of the Energy Storage Power Purchase Agreement dated as of \_\_\_\_\_, between \_\_\_\_\_, and Hawaiian Electric.

(H) Authorized Use. If Company becomes entitled to a draw of funds from the Source Code Security or a release of funds from the Proceeds 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 Section 6(b) (Escrow Establishment) of Attachment B (Facility Owned by Seller) and the Source Code Escrow Agreement and Proceeds 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 Proceeds 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. [Reserved]

9. Technology Specific Requirements.

- (a) [Reserved].
- (b) [Reserved].
- (c) Inverter Systems.
  - (i) Direct current generators and non-power (i.e. other than 60 Hertz) alternating current generators can only be installed in parallel with the Company System using a non-islanding synchronous inverter unless alternate designs are approved by the Company. 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).

- (d) Battery Energy Storage System. The operating parameters of the Battery Energy Storage System ("BESS") shall be as follows:
- (i) For Contract Years that are non-leap years, the BESS shall be discharged no more than BESS Contract Capacity x 365, MWh in each Contract Year. For Contract Years that are leap years, the BESS shall be discharged no more than BESS Contract Capacity x 366, MWh in each Contract Year.
  - (ii) The BESS will not be required to discharge more energy than available relative to the available state of charge.
  - (iii) The BESS energy capacity shall be sized above the BESS Contract Capacity to provide sufficient energy to self energize the Facility in accordance with Section 3(r) (Self-Energization) of this Attachment B (Facility Owned by Seller). The BESS shall maintain sufficient energy to self energize the Facility at all times except when discharged for such purpose. Upon discharging to self energize the Facility, the BESS must restore the self-energization energy as soon as possible.

EXHIBIT B-1  
REQUIRED MODELS

To be completed based on the Project's characteristics. The Required Models are listed in the RFP Appendix B, Attachment 4 - Model and Interconnection Requirements (IRS) Scope of the RFP.

Modeling requirements are set forth in the RFP Appendix B, Attachment 3 Hawaiian Electric Facility Technical Model Requirements and Review Process of the RFP.

**[EXHIBIT B-2 WILL BE PREPARED TO REFLECT  
THE RESULTS OF IRS]**

EXHIBIT B-2  
ENERGY STORAGE CAPABILITY CURVE(S)

ATTACHMENT C  
METHODS AND FORMULAS FOR MEASURING PERFORMANCE STANDARDS

1. Performance Standards as defined below shall be used, in part, to govern actions by Company to limit the Actual Output of the Facility for purposes of maintaining power quality on Company System. Specific standards are defined for:
  - Ramp Rate (RR)
2. Formulas for measuring the performance standards are presented below, and assume that the power fluctuations will be monitored on the Company's SCADA and EMS systems. These formulas are based on the periodicity at which analog data is retrieved from Telemetry and Control. This periodicity is called the "scan rate". Company presently uses a two-second analog scan rate. The formulas below are based on the two-second scans. The two-second scan rate, characteristics of transducers and Telemetry and Control reporting, and SCADA method of calculation, were considered and included in the proposed values for the performance standards.
3. Ramp Rate Calculation:

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

Where:

$RR$  = Ramp Rate, may be calculated once every scan

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

$MW_s$  = The instantaneous MW analog value for the present scan

4. All changes in output shall be implemented as a ramp rate, and not with one or two step changes within the period. It is not acceptable, for example, for a two MW/minute ramp rate compliance, that all values be zero except for a 2 MW change in the last scan value.

ATTACHMENT D  
CONSULTANTS LIST

(To be completed as per Section 25.4 of the Agreement)

ATTACHMENT E  
SINGLE-LINE DRAWING AND INTERFACE BLOCK DIAGRAM

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



ATTACHMENT F  
RELAY LIST AND TRIP SCHEME

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

**[ATTACHMENT G SHALL BE REVISED TO REFLECT  
THE RESULTS OF IRS]**

ATTACHMENT G  
COMPANY-OWNED INTERCONNECTION FACILITIES

1. Description of Company-Owned Interconnection Facilities.

- (a) General. Company shall furnish or construct (or may have Seller furnish or construct, in whole or in part), own, operate and maintain all Interconnection Facilities required to interconnect Company System with Facility at [REDACTED] volts, up to the Point of Interconnection (collectively, the "Company-Owned Interconnection Facilities").
- (b) Site. Where any Company-Owned Interconnection Facilities are to be located on the Site, Seller shall provide, at no expense to Company, a location and access acceptable to Company for all such Company-Owned Interconnection Facilities, as well as an easement, license or right of entry to access such Company-Owned Interconnection Facilities. If power sources (120/240VAC) are required, Seller shall provide such sources, at no expense to Company.
- (c) IRS. An IRS addressing Facility requirements was completed for the Project in accordance with the IRS Letter Agreements, and the results have been incorporated in Attachment B (Facility Owned by Seller) and this Attachment G (Company-Owned Interconnection Facilities) as appropriate.
- (d) Seller's Payment Obligations. Company-Owned Interconnection Facilities, for which Seller has agreed to pay, whether designed, engineered and constructed by Seller or Company, include **[ADD LIST OF COMPANY-OWNED INTERCONNECTION FACILITIES THAT ARE REQUIRED PURSUANT TO THE RESULTS OF THE IRS. THE FOLLOWING IS AN EXAMPLE OF THE TYPES OF FACILITIES THAT COULD BE LISTED]:**
- (i) **[Line extension];**
- (ii) A manually operated, lockable, group operated switch located on a pole prior to the Facility switching station. Company will install a \_\_\_\_ kV drop into Seller-provided deadend structure.

- (iii) Substation additions and/or modifications of Company's existing structures as necessary. This would include but not be limited to protective relaying and setting changes;
  - (iv) Supervisory control and communications equipment (including but not limited to, SCADA/Telemetry and Control, microwave, satellite, dedicated phone line(s) and/or any other acceptable communications means (determined by Company), fiber optics, copper cabling, installation of batteries and charger system, etc.);
  - (v) Revenue Metering Package as provided in Section 10.1 (Meters) of the Agreement;
  - (vi) Any additional Interconnection Facilities needed to be installed as a result of final determination of Facility switching station site, final design of Facility to enable Company to complete the Interconnection Facilities and be compatible with Good Engineering and Operating Practices.
  - (vii) If equipment that is not standard to Company is utilized, Seller shall, at the discretion of Company, provide adequate spares.
- (e) Revisions to Costs. The list of Company-Owned Interconnection Facilities, and engineering and testing costs for Company-Owned Interconnection Facilities, for which Seller agrees to pay in accordance with this Attachment G (Company-Owned Interconnection Facilities), are subject to revision if (i) before approving this Agreement, the PUC approves an energy storage purchase agreement for another non-Company owned battery energy storage system/facility ("Second NUB Contract") making Energy Storage Services available to Company using the same line to which Facility is to be connected or (ii) the line to which Facility is to be connected and/or the related transformer(s) need(s) to be upgraded and/or replaced as a result of this Agreement and a Second NUB Contract, and the PUC, in approving this Agreement, determines that Seller should pay for all or part of the cost of such upgrade and/or replacement.
- (f) Review of the Listing and Costs. If the Commercial Operations Date is not achieved by the Guaranteed Commercial Operations Date, as such date may be extended

as provided in Section 13.3 (Guaranteed Project and Reporting Milestone Dates), the listing of the Company-Owned Interconnection Facilities required in this Agreement and the cost-estimates for such Company-Owned Interconnection Facilities are subject to review and revision. Such revision may include, but not be limited to, such items as reconductoring an existing transmission or distribution line, construction of a new line, increase transformer capacity, and alternative relay specifications. In addition, such review and revision may require that the Company re-perform or update the IRS at the Seller's expense.

- (g) Responsibility of Seller and Company. The general responsibilities of Seller and Company for the design, procurement, installation, programming/testing, and maintenance/ownership of equipment at the Facility and the Company-Owned Interconnection Facilities is specified in Matrix G-1 (Substation Responsibilities) and Matrix G-2 (Telecom Responsibilities). **[DRAFTING IRS.]**

2. Construction and Support Services By Seller.

(a) Construction and Support Services By Seller.

(i) Seller (and/or its Third Party consultants or contractors (collectively, "Contractors")) will design, engineer, construct, test and place in service, at Seller's expense:

- A. The items identified in Matrix G-1 (Substation Responsibilities) and Matrix G-2 (Telecom Responsibilities) as being the responsibility of Seller to construct; and
- B. **[ANY OTHER COMPANY-OWNED INTERCONNECTION FACILITIES TO BE CONSTRUCTED BY SELLER].**  
**[NOTE: SUBPARTS "A" AND "B" BETWEEN THEM SHOULD GENERALLY INCLUDE A SUBSET OF THE LIST IN SECTION 1(d) ABOVE]**

All design, engineering and construction performed by Seller (and/or its Contractors) shall, without limitation, satisfy the wind load and seismic load requirements of the International Building Code and

any more stringent requirements imposed under applicable Laws.

(ii) Seller shall provide the necessary support for the Company's [REDACTED] kV overhead line extension work, which may include, but not limited to:

- A. Furnish surveyed topographical drawing including contour lines of project areas and beyond as needed in State Plane coordinates with overlay of the Facility and Company pole line route(s) indicating pole locations and anchors in CADD format acceptable to Company.
- B. Staking of Company proposed poles and anchors by surveyor.
- C. Graded access roads including gravel if required by Company to provide sufficient vehicle access to Company poles and anchors by Company trucks and cranes.
- D. Graded level pads to provide vehicle working areas around all Company poles and anchors.
- E. Grading of the areas beneath the Company's overhead lines as needed to provide required ground clearance.
- F. Grubbing and clearing of vegetation within Company's easement area or as required.

(b) Coordination of Construction. Prior to Seller engaging the Contractors, Seller shall obtain Company's written approval, which approval shall not be unreasonably withheld. Prior to Seller and/or its Contractors first starting to work on the construction plans for Company-Owned Interconnection Facilities to be constructed by Seller (and/or its Contractors), such as the civil, structural, and construction drawings, specifications to vendors, vendor approved final drawings and materials lists (collectively, the "Plans"), Seller and/or its Contractors shall meet with Company to discuss the construction of such Company-Owned Interconnection Facilities, including but not limited to subjects concerning coordination of construction milestone dates, agreement on areas of interface design, and Company's design/drawing layout and symbols standards, equipment

specifications and construction specifications and standards. Company will provide the equipment specifications and construction specifications and standards information so Seller can incorporate such information in its bid documents.

- (c) Plans. Seller shall provide Company its complete Plans at 30%, 60% and 90% and final issue for construction. No later than sixty (60) Days before Seller and/or its Contractors first start to order materials and equipment for Company-Owned Interconnection Facilities to be constructed by Seller and/or its Contractors, Seller shall provide Company with the final Plans. The Plans for Company-Owned Interconnection Facilities to be constructed by Seller (and/or its Contractors) shall comply with (i) all applicable Laws; (ii) Company's design/drawing layout and symbol standards, equipment specifications, and construction specifications and standards; and (iii) Good Engineering and Operating Practices (collectively, the "Standards"). Seller shall submit design drawings in MicroStation format per Company standards.
- (d) Company's Review of the Plans. Unless otherwise agreed to by the Parties, Company shall have twenty (20) Business Days following receipt of the complete Plans at each stage (30%, 60%, 90% and final issue for construction) for it to review and comment on the Plans, and verify in writing to Seller that the Plans comply with the Standards, which verification shall not be unreasonably withheld. If Company reasonably determines that the Plans are not in accordance with the Standards, then it may request in writing a response from Seller to its comments and Seller shall respond in writing within twenty (20) Business Days of such request by providing (i) its justification for why its Plans conform to the Standards or (ii) changes in the Plans responsive to Company's comments and in accordance with the Standards.
- (e) Company Inspection. Construction work will be subject to Company inspections to ensure that construction is done in accordance with the Standards. Company inspectors will be allowed access to the construction sites for inspections and to monitor construction work. The inspector shall have the authority to work with the appropriate construction supervisor to stop any work that does not meet the Standards. All equipment and

materials used in Company-Owned Interconnection Facilities to be constructed by Seller and/or its Contractors shall meet the Standards.

(f) Acceptance Test Procedures.

- (i) Seller acknowledges that: (aa) Company has multiple on-going projects with other developers as well as its own capital improvement projects and on-going system work; (bb) Company has limited resources to provide engineering oversight (such as review of plans) to such projects and to participate in the testing of such projects; (cc) in order for Company to accommodate such oversight and testing, it is necessary for Company to sequentially allocate its resources for each project a year or more in advance; (dd) the result is a queue of such projects that reflects the scheduling commitments of Company's resources to conduct such oversight and to participate in such testing; (ee) if a project is behind the schedule on which Company's resources have been scheduled for the oversight of such project, or if a project is not ready for testing at the time Company's resources have been scheduled for the testing of such project, or if a project does not complete testing within the period for which Company's resources have been scheduled for such testing, the progress of projects later in the queue may be adversely affected; (ff) the Test Ready Deadline that is set forth in Attachment K-1 (Seller's Conditions Precedent and Company Milestones) reflects the scheduling commitment of Company's resources to (i) conduct the oversight necessary to facilitate Seller's achievement of that Test Ready Deadline, (ii) commence the Acceptance Test on the Acceptance Testing Milestone Date that is set forth in Attachment K-1 (Seller's Conditions Precedent and Company Milestones) and (iii) thereafter participate in the Control System Acceptance Test; and (gg) in the Company's sole discretion based on its assessment of Company's resources and overall schedule of projects at the time, the Project may lose its place in the queue and may be assigned a new Acceptance Testing Milestone Date for commencement of the Acceptance Test that may be behind the other projects then in the queue if (i) the Seller fails to satisfy any of

the conditions precedent set forth in Section 2(f)(ii) of this Attachment G (Company-Owned Interconnection Facilities) within the time period specified therein for the task in question or, if no time period is specified therein, by the Test Ready Deadline, (ii) the Seller fails to satisfy any of the Seller's Conditions Precedent set forth in Attachment K-1 (Seller's Conditions Precedent and Company Milestones) and/or (iii) the Acceptance Test and the Control System Acceptance Test are not satisfactorily completed within the time allotted to complete such testing.

(ii) The conduct of the Acceptance Test is subject to the satisfaction of the following conditions precedent within the time period specified below for the task in question or, if no time period is specified, by the Test Ready Deadline that is set forth in Attachment K-1 (Seller's Conditions Precedent and Company Milestones):

- Final Single-Line Drawing, and notes, has received Company's written consent pursuant to Section 1(a)(i) (Single-Line Drawing, Interface Block Diagram, Relay List, Relay Settings and Trip Scheme) of Attachment B (Facility Owned by Seller) to this Agreement.
- Final Relay List and Trip Scheme have received Company's written consent pursuant to Section 1(a)(i) (Single-Line Drawing, Interface Block Diagram, Relay List, Relay Settings and Trip Scheme) of Attachment B (Facility Owned by Seller) to this Agreement.
- Final Interface Block Diagram has received Company consent pursuant to Section 1(a)(i) (Single-Line Drawing, Interface Block Diagram, Relay List, Relay Settings and Trip Scheme) of Attachment B (Facility Owned by Seller) to this Agreement.
- Final Control System Telemetry and Control List has received Company consent.
- Final phasor measurement unit (PMU) devices, if applicable, have received Company consent.



- Control system design and tunable parameters reviewed and mutually agreed upon as needed to meet the Company requirements in accordance with Attachment B (Facility Owned by Seller) Performance Standards.
- Agreement on Active Power Control Interface.
- No later than 14 Days prior to commencement of the Acceptance Test:
  - Seller shall have certified to Company that Seller-Owned Interconnection Facilities have been installed and commissioned and such certification has not, prior to the commencement of the Acceptance Test, been subsequently challenged by Company on the basis of on-site observations made by the Company's representatives following the walk-through to be conducted pursuant to Section 2(f)(iii) of this Attachment G (Company-Owned Interconnection Facilities).
  - Seller shall have certified to Company that any Company-Owned Interconnection Facilities built by Seller (and/or its Contractors) have been installed and commissioned and such certification has not, prior to the commencement of the Acceptance Test, been subsequently challenged by Company on the basis of on-site observations made by the Company's representatives following the walk-through to be conducted pursuant to Section 2(f)(iii) of this Attachment G (Company-Owned Interconnection Facilities).
- Any Company-Owned Interconnection Facilities not built by or on behalf of Seller have been installed and commissioned.
- No later than seven (7) Days prior to the commencement of the Acceptance Test, Seller and Company shall have participated in walk-through of fully constructed Interconnection Facilities.
- Redlined as-built drawings of the Seller-Owned Interconnection Facilities and any of the Company-Owned Interconnection Facilities built by Seller (and/or its Contractors) shall have been provided to Company.

- Continuous power is being supplied to Company's protection and SCADA equipment.
  - Not less than four (4) weeks prior to the commencement of the Acceptance Test, the high speed communication lines required under this Agreement have been commissioned and are ready for use.
  - Not less than two (2) weeks prior to the commencement of the Acceptance Test, Seller and Company have participated in an on-Site Acceptance Test coordination meeting.
- (iii) Seller shall provide Company with at least fourteen (14) Days advance written notice of the commencement of the Acceptance Test. The Acceptance Test will be conducted on Business Days during normal business hours and may take a minimum of thirty (30) Days to complete. No electric energy will be delivered from Seller to Company during the Acceptance Test. No later than thirty (30) Days prior to conducting the Acceptance Test, Company and Seller shall agree on a written protocol setting out the detailed procedure and criteria for passing the Acceptance Test. Attachment N (Acceptance Test General Criteria) provides general criteria to be included in the written protocol for the Acceptance Test. At the time that Seller provides its 14-Day notice of the Acceptance Test to Company, Seller shall concurrently schedule a site walk-through of the Facility with Company to occur no later than seven (7) Days prior to the Acceptance Test. Seller's 14-Day notice to Company of the Acceptance Test shall constitute its certification that (i) the completion of the installation and commissioning of the Seller-Owned Interconnection Facilities and the Company-Owned Interconnection Facilities built by Seller (and/or its Contractors) and (ii) a walk-through by Company shall demonstrate, to Company's reasonable satisfaction, Seller's readiness to commence with the Acceptance Test. If, after the site walk-through, Company representatives reasonably determine that Seller is not ready to commence with the Acceptance Test, in the Company's sole discretion based on its assessment of the nature of Seller's lack of readiness and Company's

resources and overall schedule of projects at the time, Company may assign Seller a new Test Ready Deadline and a new Acceptance Testing Milestone Date, which may be behind the other projects then in the queue, coinciding with the estimated time it would take Seller to become test-ready and Company's ability to commence the Acceptance Test. If prior to the new Test Ready Deadline established by Company, Seller becomes ready for the performance of the Acceptance Test, i.e., Seller provides Company with its fourteen (14) Day advance written notice of the commencement of the Acceptance Test (the "Seller Accelerated Test Ready Deadline"), and Company confirms, in its site walk-through of the Facility (which site walk-through the Company may waive in its sole discretion), that Seller is ready for the Acceptance Test, but Company is unable to perform the Acceptance Test within [REDACTED] Days<sup>1</sup> (the "Seller Accelerated Acceptance Testing Milestone Date") and Company's inability to commence the Acceptance Test is solely due to the conditions set forth in Section 2(f)(i)(aa) and (bb) of this Attachment G, then, for up to the period of time from the Seller Accelerated Acceptance Testing Milestone Date to the date that Company commences performance of the Acceptance Test, Seller shall be entitled to a waiver of Daily Delay Damages that would otherwise be accruing if Seller ultimately fails to meet the Guaranteed Commercial Operations Date due to its failure to meet the original Test Ready Deadline specified in Attachment K-1. For clarity, and to explain the limited waiver of Daily Delay Damages provided for in the preceding sentence, if Seller misses its Test Ready Deadline by 45 Days and subsequently misses its Guaranteed Commercial Operations Date for that reason by 60 Days and the period of time between the Seller Accelerated Acceptance Testing Milestone Date and the commencement date of the Acceptance Test is 15 Days (and such delay is solely due to the conditions set forth in Section 2(f)(i)(aa) and (bb) of this

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<sup>1</sup> This would be the number of Days between the Test Ready Deadline and the Acceptance Testing Milestone Date stated in the Company Milestones of Attachment K-1.

Attachment G), then Seller shall be entitled to a waiver of 15 Days of Daily Delay Damages otherwise accruing for Seller's failure to meet the Guaranteed Commercial Operations Date. If the above time periods remain the same but Seller only misses the Guaranteed Commercial Operations Date by 30 Days, Seller shall not be entitled to any Daily Delay Damages waiver as the 30 Day failure to meet the Guaranteed Commercial Operations Date would be attributable to the initial 45 Days that Seller missed the Test Ready Deadline. Finally, if the above time periods remain the same but Seller misses its Guaranteed Commercial Operations Date by 50 Days, Seller shall be entitled to only a 5 Day waiver of Daily Delay Damages. In the meantime, Seller shall remediate the deficiencies identified by Company, and the process described in this Section 1(f) (Acceptance Test Procedures) of Attachment G (Company-Owned Interconnection Facilities), shall commence again until Seller's readiness for the Acceptance Test is demonstrated to Company's reasonable satisfaction. Successful completion of the Acceptance Test requires successful completion of each of the individual tests that comprise the Acceptance Test. Retesting of any individual test constitutes a restart of the Acceptance Test if such retesting is required because of a prior failure of such individual test or because a prior test could not be completed because of a problem with the Facility. Within fifteen (15) Business Days of successful completion of the Acceptance Test and Company's receipt of the final report setting forth the results of the Acceptance Test, Company shall notify Seller in writing whether the Acceptance Test has been passed and, if so, the date upon which the Acceptance Test was passed.

- (iv) Company will be present when the Acceptance Test is conducted, and Seller shall promptly correct any deficiencies identified during the Acceptance Test. Seller will be responsible for the cost of Company personnel (and/or Company contractors) performing the duties (such as reviewing the Plans and reviewing the construction) necessary for Company-Owned Interconnection Facilities to be constructed by Seller (and/or its Contractors). If Company

(aa) does not make any inspection or test, (bb) does not discover defective workmanship, materials or equipment, or (cc) accepts Company-Owned Interconnection Facilities (that were constructed by Seller and or its Contractors), such action or inaction shall not relieve Seller from its obligation to do and complete the work in accordance with the Plans approved by Company.

(g) As-Built Drawings. Within thirty (30) Days of the successful completion of the Acceptance Test, Seller shall provide for Company review a set of the proposed as-built drawings for the Company-Owned Interconnection Facilities constructed by Seller (and/or its Contractors). Within thirty (30) Days of Company's receipt of the proposed as-built drawings, Company shall provide Seller with either (i) its comments on the proposed as-built drawings or (ii) notice of acceptance of the proposed as-built drawings as final as-built drawings. If Company provides comments on the proposed as-built drawings, Seller shall incorporate such comments into a final set of as-built drawings and provide such final as-built drawings to Company within twenty (20) Days of Seller's receipt of Company's comments.

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

(a) Seller Payment to Company.

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

items (aa) through (cc)) are the "Total Interconnection Cost".

- (ii) Summary List of Company-Owned Interconnection Facilities and Related Services to be designed, engineered and constructed by Company:

**[THIS LIST SHOULD GENERALLY INCORPORATE A SUBSET OF THE LIST IN ATTACHMENT G, SECTION 1(d), PLUS TESTING.]**

- (iii) The following summarizes the Total Estimated Interconnection Cost of the Company-Owned Interconnection Facilities to be designed, engineered and constructed by Company:

**[THIS LIST SHOULD INCLUDE ESTIMATED COSTS FOR THE ITEMS LISTED IN ATTACHMENT G, SECTION 3(a)(i).]**

The Total Estimated Interconnection Cost is \$           .

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

- (i) Initial Payment: Prior to the execution of the Interconnection Requirements Amendment, Seller has paid \$\_\_\_,000.00 to Company;

- (ii) Company-Owned Interconnection Facilities Prepayment: Within thirty (30) Days after the execution of the Interconnection Requirements Amendment, the total estimated costs related to the Engineering and Design Work are due and payable by Seller to Company;

- A. Company shall not be obligated to perform any work with respect to Company-Owned Interconnection Facilities until Seller pays the amounts in Section 3(b)(i) (Initial Payment) and Section 3(b)(ii) (Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities), and receipt of such payment shall constitute Seller's irrevocable authorization to Company to perform such engineering and design work.

(iii) Balance of Company-Owned Interconnection Facilities Prepayment: On the Guaranteed Procurement Payment Date, the difference between the portion of the Total Estimated Interconnection Cost paid to date and the Total Estimated Interconnection Cost is due and payable by Seller to Company.

A. Company shall not be obligated to perform any work with respect to Company-Owned Interconnection Facilities until Seller pays the amount in this Section 3(b)(iii) (Balance of Company-Owned Interconnection Facilities Prepayment) of this Attachment G (Company-Owned Interconnection Facilities), and receipt of such payment shall constitute Seller's irrevocable authorization to Company to perform such procurement and construction work.

(c) Scope Changes to Company-Owned Interconnection Facilities. Company may require additional payments for changes to the Company-Owned Interconnection Facilities and/or changes to the schedule. Company shall prepare documentation on the changes and justification for additional payment, which cannot be unreasonably denied by Seller. Seller shall pay within 30 Days of receipt of Company's documentation. Company has the right to draw on the Standby Letter of Credit provided under Section 6(a) (Standby Letter of Credit of this Attachment G (Company-Owned Interconnection Facilities)) if such payment is not received.

(d) True-Up. The final accounting shall take place within one hundred twenty (120) Days of the first to occur of (i) the Commercial Operations Date, (ii) the date this Agreement is declared null and void under either Section 12.5 (Prior to Effective Date) or Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval) of this Agreement, or (iii) the date this Agreement is terminated. Company shall be entitled to an extension for a commercially reasonable amount of time to complete the final accounting if a delay in such completion is caused by Seller's delay or failure to respond to any Company request for information needed to complete the final accounting or take any action necessary for Company to complete the final accounting. Upon completion of the final accounting, Company shall

deliver to Seller an invoice for payment of the amount, if any, of the difference between the Total Estimated Interconnection Cost paid to date and the Total Actual Interconnection Cost, which is the final accounting of the Total Interconnection Costs. Payment of such invoice shall be made within thirty (30) Days of receipt of such invoice from Company. If the Total Actual Interconnection Cost is less than the payments received by Company as the Total Estimated Interconnection Cost, Company shall repay the difference to Seller within thirty (30) Days of the final accounting.

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

4. Ongoing Operation and Maintenance Charges.

- (a) Prior to the Transfer Date. Seller shall operate and maintain, at its sole cost and expense, Company-Owned Interconnection Facilities that it or its Contractors constructed, if any, prior to the Transfer Date.
- (b) On or After the Transfer Date. On and after the Transfer Date, Company shall own, operate and maintain Company-Owned Interconnection Facilities.
- (c) Monthly Bill. Company shall bill Seller monthly (or periodically as costs are incurred) for any reasonable costs incurred in operating, maintaining and replacing (to the extent not covered by insurance) Company-Owned Interconnection Facilities. Company's costs will be



determined on the basis of, but not limited to, direct payroll, material costs, applicable overhead at the time incurred, consulting fees and applicable taxes. Seller shall, within thirty (30) Days after receipt of an invoice, reimburse Company for such monthly billed operation and maintenance charges. Company's invoice will include itemized charges reasonably necessary for Seller to verify the basis for such charges.

5. Relocation of Company-Owned Interconnection Facilities.

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

6. Guarantee for Interconnection Costs.

- (a) Standby Letter of Credit. To ensure payment by Seller of all costs and expenses incurred by Company (i) in excess of the Total Estimated Interconnection Cost paid in connection with the Company-Owned Interconnection Facilities to be provided and/or constructed by Company described in Section 3 (Seller Payment To Company for Company-Owned Interconnection Facilities and Review Of

Facility) of this Attachment G (Company-Owned Interconnection Facilities), and (ii) if applicable, in excess of the Total Estimated Relocation Costs paid in connection with the relocation of the Company-Owned Interconnection Facilities as provided in Section 5 (Relocation of Company-Owned Interconnection Facilities) of this Attachment G (Company-Owned Interconnection Facilities), Seller shall obtain an Irrevocable Standby Letter of Credit with no Documentary Requirement ("Standby Letter of Credit") in accordance with the requirements of Section 6(b) (Requirements of the Standby Letter of Credit) of this Attachment G (Company-Owned Interconnection Facilities), wherein Company shall receive payment from the bank upon request by Company.

- (b) Requirements of the Standby Letter of Credit. The Standby Letter of Credit shall be (i) in an amount not less than twenty-five percent (25%) of the Total Estimated Interconnection Cost or Total Estimated Relocation Cost, as applicable, and (ii) in substantially in the form attached to this Agreement as Attachment M (Form of Letter of Credit) from a bank chartered in the United States with a credit rating of "A-" or better. If the rating (as measured by Standard & Poors) of the bank issuing the Standby Letter of Credit falls below A-, Company may require Seller to replace the Standby Letter of Credit with a Standby Letter of Credit from another bank chartered in the United States with a credit rating of "A-" or better. In connection with the construction of the Company-Owned Interconnection Facilities, the Standby Letter of Credit shall be effective from the earlier of (aa) thirty (30) Days following the Effective Date, or (bb) the date that Seller requests Company to order equipment or commence construction on Company-Owned Interconnection Facilities. In connection with the relocation of the Company-Owned Interconnection Facilities, if applicable, the Standby Letter of Credit shall be effective within thirty (30) Days after Seller receives the invoice from Company for the Total Estimated Relocation Cost as set forth in Section 5 (Relocation of Company-Owned Interconnection Facilities) of this Attachment G (Company-Owned Interconnection Facilities). The Standby Letter of Credit shall be in effect through the earlier of forty-five (45) Days after the final accounting or seventy-five (75) Days after the Agreement is terminated. Seller shall provide to Company within

fourteen (14) Days of the date the Standby Letter of Credit is to be effective as aforesaid, a document from the bank which indicates that such a Standby Letter of Credit has been established.

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

7. Land Restoration.

- (a) Definition of "Land". For the purposes of this Attachment G (Company-Owned Interconnection Facilities), "Land" means any portion of the Site and any other real property where any Company-Owned Interconnection Facilities are located.
- (b) Removal of Interconnection Facilities. After termination of this Agreement or in the event this Agreement is declared null and void under either Section 12.5 (Prior to Effective Date) or Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval) of this Agreement, if requested by Company, Seller shall, at its sole cost and expense, remove (i) the Company-Owned Interconnection Facilities from the Land and (ii) the Seller-Owned Interconnection Facilities from the Land, and, in conjunction with such removal, shall develop and implement a program to recycle, to the fullest extent possible, or to otherwise properly dispose of, all such removed infrastructure; provided, however, that, Company may elect to remove all or part of the Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities from the Land because of operational concerns over the removal of such Interconnection Facilities, in which case Seller shall reimburse Company for its costs to remove such Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities. To the extent Seller is obligated to remove Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities, Seller shall complete such removal within ninety (90) Days of termination of this Agreement (or declaration that the Agreement is null and void under either Section 12.5 (Prior to Effective Date) or Section 12.6 (Time Periods for PUC Submittal Date and PUC

Approval) of this Agreement, or as otherwise agreed to by both Parties in writing.

- (c) Restoration of the Land. After the termination of this Agreement (or declaration that the Agreement is null and void under either Section 12.5 (Prior to Effective Date) or Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval) of this Agreement) and removal of the Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities, as the case may be, Seller shall, at its sole cost and expense, restore the Land to its condition prior to construction of such Company-Owned Interconnection Facilities and/or Seller-Owned Interconnection Facilities, as applicable. Land restoration shall be completed within ninety (90) Days of termination of this Agreement (or declaration that the Agreement is null and void under either Section 12.5 (Prior to Effective Date) or Section 12.6 (Time Periods for PUC Submittal Date and PUC Approval) of this Agreement), or as otherwise agreed to by both Parties in writing.

8. Transfer of Ownership/Title.

- (a) Transfer of Ownership and Title. On the Transfer Date, Seller shall transfer to Company all right, title and interest in and to Company-Owned Interconnection Facilities to the extent such facilities were designed and constructed by Seller and/or its Contractors together with (i) all applicable manufacturers' or Contractors' warranties which are assignable and (ii) all Land Rights necessary to own, operate and maintain Company-Owned Interconnection Facilities on and after the Transfer Date. Seller shall provide a written list of the manufacturers' and Contractors' warranties which will be assigned to Company and the expiration dates of such warranties no later than thirty (30) Days before the Transfer Date.
- (b) No Liens or Encumbrances. Company's title to and ownership of Company-Owned Interconnection Facilities that were designed and constructed by Seller and/or its Contractors shall be free and clear of liens and encumbrances.
- (c) Form of Documents. The transfers to be made to Company pursuant to this Section 8 (Transfer of Ownership/Title) of Attachment G (Company-Owned Interconnection

Facilities) shall not require any further payment by Company. The form of the document to be used to convey title to the Company-Owned Interconnection Facilities that were designed and constructed by or on behalf of Seller shall be substantially in the form set forth in Attachment H (Form of Bill of Sale and Assignment). The form of the document(s) to be used to assign leases shall be substantially in the form set forth in Attachment I (Form of Assignment of Lease and Assumption). To the extent Land Rights other than leases are transferred to Company, appropriate modifications will be made to Attachment I (Form of Assignment of Lease and Assumption) to effectuate the transfer of such Land Rights.

9. Governmental Approvals for Any Company-Owned Interconnection Facilities.

Seller shall obtain at its sole cost and expense all Governmental Approvals necessary to the construction, ownership, operation and maintenance of the Company-Owned Interconnection Facilities. For Company-Owned Interconnection Facilities to be constructed by Company, Seller shall provide all Governmental Approvals necessary for the construction of such Company-Owned Interconnection Facilities prior to the commencement of construction by Company. For Company-Owned Interconnection Facilities to be constructed by Seller, Seller shall obtain all Governmental Approvals necessary for construction of the Company-Owned Interconnection Facilities prior to commencement of the construction activity for which such Governmental Approval is required. For all other Governmental Approvals for Company-Owned Interconnection Facilities, Seller shall provide these prior to the Transfer Date. On or before the Transfer Date, Seller shall provide Company with (i) copies of all such Governmental Approvals obtained by Seller regarding the construction, ownership, operation and maintenance of Company-Owned Interconnection Facilities that Seller and/or its Contractors constructed and (ii) documentation regarding the satisfaction of any condition or requirement set forth in any Governmental Approvals for Company-Owned Interconnection Facilities (excluding on-going reporting or monitoring requirements that may continue beyond the Transfer Date in accordance with such Governmental Approval) or that such Governmental Approvals have otherwise been closed with the issuing Governmental Authority.

10. Land Rights.

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

11. Contracts for Company-Owned Interconnection Facilities.

For all contracts entered into by or on behalf of Seller for Company-Owned Interconnection Facilities to be designed, engineered and constructed, in whole or in part, by or on behalf of Seller, the following shall apply: (i) Company shall be made an intended third-party beneficiary of such contracts; and (ii) Company shall be provided with copies of such executed contracts, which may be redacted but only to the extent required to prevent disclosure of confidential or proprietary information of Seller or the counterparty to such agreement; provided, however, that such redactions may not conceal information that is necessary for the Company to determine and exercise Company's rights under such contracts as a third-party beneficiary.

[MATRIX TO BE INSERTED]

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

ATTACHMENT K  
GUARANTEED PROJECT MILESTONES

**[For Developer Interconnection Build]**

<b>Guaranteed Project Milestone Date</b>	<b>Description of Each Guaranteed Project Milestone</b>
----------------------------------------------	-------------------------------------------------------------

<b>[SPECIFY DATE CERTAIN]</b>	<u>Construction Financing Milestone</u> : Provide Company with documentation reasonably satisfactory to Company evidencing (i) the closing on financing for the Facility including ability to draw on funds by <b>[insert same date certain as in left column]</b> or (ii) the financial capability to construct the Facility (" <u>Construction Financing Closing Milestone</u> ").
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<b>[SPECIFY DATE CERTAIN]</b>	<u>Permit Application Filing Milestone</u> : Provide Company with documentation reasonably satisfactory to Company evidencing the filing by or on behalf of Seller of the following applications for Governmental Approvals required for the ownership, construction, operation and maintenance of the Facility: <b>[List All Discretionary Permits]</b>
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<b>[SPECIFY DATE CERTAIN]</b>	<u>Guaranteed Commercial Operations Date</u> .
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**[ATTACHMENT K WILL BE REVISED TO REFLECT  
THE RESULTS OF IRS]**

ATTACHMENT K-1  
SELLER'S CONDITIONS PRECEDENT AND COMPANY MILESTONES

**[For Developer Interconnection Build]**

<b>Seller's Conditions Precedent Date</b>	<b>Description of Each of Seller's Conditions Precedent</b>
	Seller shall make payment to Company of the amount required under <u>Section 3(b)(ii)</u> of <u>Attachment G</u> (Company-Owned Interconnection Facilities)
	Seller shall provide Company a right of entry for the Company-Owned Interconnection Facilities site(s).
	Seller shall make payment to Company of the amount required under <u>Section 3(b)(iii)</u> of <u>Attachment G</u> (Company-Owned Interconnection Facilities)
	Seller shall provide evidence of the full execution of the engineering, procurement and construction ("EPC") contract.
	Seller's engineering, procurement and construction ("EPC") contractor shall obtain grading permit.
	Seller shall provide evidence of procurement of the long-lead materials for Company-Owned Interconnection Facilities, including control house, metering, CTs and PTs.
	Seller's EPC contractor shall obtain and provide Company all permits (other than any required occupancy permits, if applicable), licenses, easements and approvals to construct the Company-Owned Interconnection Facilities, including the building permit.
<b>No later than three (3) months prior to the commencement of</b>	Seller shall provide station service power, if applicable, as required by Company.

<p><b>the Acceptance Test</b></p>	
<p><b>No later than three (3) months prior to the commencement of the Acceptance Test</b></p>	<p>Seller or Seller's EPC contractor shall have Hawaiian Telcom Backup (or equivalent) installed which shall consist of a 1.5 Mbps Routed Network Services circuit for backup SCADA communications from Company's Substation at Seller's Facility to Company's EMS located at the Company's control center.</p>
	<p>Seller's EPC contractor shall complete installation of physical bus and structures within Company's substation up to the demark point as necessary to interconnect.</p>
<p><b>[specify date] ("Test Ready Deadline")</b></p>	<p>Seller's EPC contractor shall complete construction of the Seller-Owned Interconnection Facilities, the Seller shall have satisfied the conditions precedent to the conduct of the Acceptance Test set forth in <u>Section 2 (f)(ii) of Attachment G</u> (Company-Owned Interconnection Facilities) and Seller is otherwise ready to conduct the Acceptance Test.</p>
	<p>Seller shall close grading permit, unless Seller provides documentation establishing, to Company's reasonable satisfaction, that closing the grading permit is not required by the relevant Governmental Authority prior to energization, testing and use of the Facility.</p>

COMPANY MILESTONES

If Seller satisfies the foregoing Seller's Conditions Precedent, the following Company Milestones shall apply:

<b>Company Milestone Date</b>	<b>Description of Each Company Milestone</b>
<b>[ ] Business Days following the Test Ready Deadline</b>	Company shall, subject to Seller's continued satisfaction of the requirements set forth in <u>Section 2 (f)(ii)</u> and <u>Section 2 (f)(iii)</u> of <u>Attachment G</u> (Company-Owned Interconnection Facilities), commence Acceptance Testing.
	Energization of Company-Owned Interconnection Facilities, provision of back-feed power to support commissioning.

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

**ATTACHMENT L  
REPORTING MILESTONES**

**[For Developer Interconnection Build]**

<b>Reporting Milestone Date</b>	<b>Description of Each Reporting Milestone</b>
[Date]	Seller shall provide Company with a redacted copy of the executed Facility equipment, engineering, procurement and construction (" <u>EPC</u> ") or other general contractor agreements. Under no circumstances shall redactions conceal information that is necessary for Company to verify its rights under the Agreement.
[Date]	Seller shall provide Company with redacted copies of executed purchase orders/contracts for the delivery of Facility inverters.
[Date]	Seller shall provide Company with copies, as applicable of executed Facility operating agreements
[Date]	Building Permit: Seller or Seller's EPC contractor shall obtain building permit.
[Date]	Construction Start Date (defined as the start of civil work on Site).
[Date]	Seller shall have laid the foundation for all Facility buildings and step-up transformer facilities.
[Date]	The BESS and all inverters for the Facility shall have been installed at the Site.
[Date]	The step-up transformer shall have been installed at the Site.

ATTACHMENT N  
ACCEPTANCE TEST GENERAL CRITERIA

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

Upon final completion of Company review of the Facility's drawings, final test criteria and procedures shall be agreed upon by Company and Seller no later than thirty (30) Days prior to conducting the Acceptance Test in accordance with the Agreement. The Acceptance Test may include the following:

1. Interconnection.

- (a) Based on manufacturer's specification, test the local operation of the Facility's \_\_\_kV breakers, which connect the Facility to Company System - must open and close locally using the local controls. Test and ensure that the status shown on the Energy Management System (EMS) is the same as the actual physical status in the field.
- (b) Remotely test the operation of the Facility's \_\_\_kV breakers which connect the Facility to Company System - must open and close remotely from Company's EMS. Test and ensure that the status shown on the EMS is the same as the actual physical status in the field.
- (c) Relay test engineers to connect equipment and simulate certain inputs to test and ensure that the protection schemes such as any under/over frequency and under/over voltage protection or the Direct Transfer Trip operate as designed. (For example, a fault condition may be simulated to confirm that the breaker opens to sufficiently clear the fault. Additional scenarios may be tested and would be outlined in the final test criteria and procedures.) Seller to also test the synchronizing mechanisms to which the Facility would be synchronizing and closing into the Company System to ensure correct operation. Other relaying also to be tested as specified in the protection review of the IRS and on the single line diagram, Attachment E (Single-Line Drawing and Interface Block Diagram) for the Facility.

- (d) All \_\_\_\_ kV breaker disconnects and other high voltage switches will be inspected to ensure they are properly aligned and operated manually or automatically (if designed).
- (e) Switching Station inspections - The Switching Station may be inspected to test and ensure that the equipment that Seller has installed is installed and operating correctly based upon agreed to design. Wiring may be field verified on a sample basis against the wiring diagrams to ensure that the installed equipment is wired properly. The grounding mat at the Switching Station may be tested to make sure there is adequate grounding of equipment.
- (f) Communication testing - Communication System testing to occur to ensure correct operation. Detailed scope of testing will be agreed by Company and Seller to reflect installed systems and communication paths that tie the Facility to Company's communications system.
- (g) Various contingency scenarios to be tested to ensure adequate operation, including testing contingencies such as loss of communications, and fault simulations to ensure that the Facility's \_\_\_\_ kV breakers, if any, open as they are designed to open. (Back up relay testing)
- (h) Metering section inspection; verification of metering PTs, CTs, and cabinet and the installation of Company meters.

## 2. 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.

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

ATTACHMENT O  
CONTROL SYSTEM ACCEPTANCE TEST CRITERIA

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

Final test criteria and procedures shall be agreed upon by Company and Seller no later than thirty (30) Days prior to conducting the Control System Acceptance Test ("CSAT") in accordance with Good Engineering and Operating Practices and with the terms of this Agreement. The Control System Telemetry and Control Points List is necessary for the effective operation of the Company System and will be tested during the Control System Acceptance Test.

The Control System Acceptance Test is comprised of two parts, a set of function-specific tests (Functional Tests) and a monitoring performance test (Monitoring Test). These tests may include the following:

Functional 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 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 of the appropriate ramp rate 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. Primary 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.
5. [RESERVED]
6. 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 (if applicable).
7. Self-Energization Test to verify the Facility will properly self energize and synchronize to the Company System.
8. Round Trip Efficiency Test to verify that the round trip efficiency of the BESS is not less than the percentage stated as the RTE Performance Metric in Project Specific Addendum.
9. Capacity Test to verify the BESS Capacity Ratio.
10. Blackstart Test (if applicable).
11. Test other controls defined in this Agreement or mutually agreed upon in writing by the Parties to enable, disable, dispatch and/or schedule the energy storage system real power and energy operations (if applicable).

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 seven (7) continuous Days from the start of the Monitoring Test.
- c) The performance of the Facility during the period of a successfully completed monitoring test is evaluated for, e.g., voltage regulation, primary frequency response, dispatch control, operating limits and ramp rate



performance, to verify the performance meets the requirements of this Agreement.