



DER INTERCONNECTION SUBMITTAL PACKAGE - STANDARD INTERCONNECTION

Congratulations on your decision to invest in a Distributed Generation (DER) system and helping Hawaii attain its renewable energy goal.

In order to help you submit your DER INTERCONNECTION application in a complete manner, there are two documents attached to this letter:

- 1) DER Submittal Package Checklist
- 2) DER INTERCONNECTION Application Cover Form

The DER INTERCONNECTION Application Cover Form must be completed, signed and submitted with your completed application. Failure to complete and sign the DER INTERCONNECTION Application Cover Form could cause your application to be returned and delay the review of your application.

The DER Submittal Package Checklist is for your records only and does not need to be returned with the required documents. The DER Submittal Package Checklist will help to ensure that you have completed and are returning all of the forms and documentation required to begin the review of your application in a timely manner.

Failure to complete and return any of the required documents could cause a delay in reviewing your application and in providing approval for your project.

We look forward to working with you on providing a final approval for your new distributive generation system.

Please send your Application Submittal Form with required attachments in one packet to the correct address below.

Hawaiian Electric		Maui County	Hawai'i Island
<i>Via United States Postal Service:</i>	<i>Via Private Delivery Services (UPS, FedEx, etc.):</i>	<i>Via United States Postal Service:</i>	<i>Via United States Postal Service:</i>
Hawaiian Electric Attn: SIA; CP12-SI P.O. Box 2750 Honolulu, HI 96840-0001	Hawaiian Electric Attn: SIA; CP12-SI 220 South King St., Suite 1280 Honolulu, HI 96813 <i>(No walk-ins, please)</i>	Hawaiian Electric Attn: Standard Interconnection Agreement P.O. Box 398 Kahului, HI 96733-6898	Hawaiian Electric Attn: Standard Interconnection Agreement; Engineering P.O. Box 1027 Hilo, HI 96721-1027
<i>Submit by e-mail:</i> SIAinfo@hawaiianelectric.com		<i>Submit by e-mail:</i> SIAMauiCounty@hawaiianelectric.com	<i>Submit by e-mail:</i> SIAHawaiiIsland@hawaiianelectric.com

DER INTERCONNECTION SUBMITTAL PACKAGE CHECKLIST - ALL PROGRAMS

- Distributed Energy Resource (DER) Interconnection Application Cover Form
- Signed Agreement (for all procurement agreements)
 - Please provide proof that you are an authorized signatory if applicable
- Project Information Exhibit for Specific Program
 - Complete all fields with necessary information or NA
- Project Specifications Exhibit for Specific Program
 - Site Plan
 - ◆ Show affected property or properties
 - ◆ Show location of Distributive Generation
 - ◆ Show location of the meter
 - ◆ Show location of the AC disconnect
 - Single line
 - ◆ Show all equipment electrical connections
 - ◆ Stamped and signed for projects $\geq 30\text{kW}$, unless dictated by County requirements.
 - ◆ Drawings should include at a minimum –
 - Meter location
 - Switch gear
 - Panels
 - Inverters
 - Disconnect
 - System Voltage
 - Energy Storage (if applicable)
 - Three Line
 - ◆ Show all equipment electrical connections
 - ◆ Wet Stamped and signed for projects $\geq 30\text{kW}$, unless dictated by County requirements.
 - ◆ For 3 Phase service – stamp not required at submittal
 - ◆ Drawings should include at a minimum –
 - Meter location
 - Switch gear
 - Panels
 - Inverters
 - Disconnect
 - System Voltage
 - Energy Storage (if applicable)

ITEM CHECKLIST FOR A COMPLETE SUBMITTAL PACKAGE - ALL PROGRAMS (cont.)

- Project Specifications Exhibit for Specific Program (cont.)
 - Equipment Spec sheets
 - ◆ Panels
 - ◆ Inverters
 - ◆ Disconnects
 - ◆ Relay and Trip Scheme
 - ◆ Energy Storage, if applicable
 - ◆ Fuses and Circuit Breakers
 - ◆ Any necessary additional information on project
 - For Energy Storage Systems
 - ◆ System Performance Data
 - ◆ Control Description
 - ◆ Operational Descriptions
- Inverter Ride through confirmation
 - Acknowledged via signature on DER Interconnection Application Cover Form
- Supplemental pre-approval
 - Acknowledged via signature on DER interconnection Application Cover Form
- Notice and Disclaimer (if applicable)
- Pictures at application submission of
 - Current meter socket
 - Main service disconnect

DER Interconnection Application Cover Form

Form must be completed legibly and with all required documents attached. Incomplete forms may not be accepted.



PROGRAM, SUBMISSION & SYSTEM TYPE

PROGRAM: Choose your program **SYSTEM:** Choose your System Type **SUBMISSION:** Choose your submission type
If you are revising your APPLICATION please tell us if you are : What is your _____ and by _____ kW.
Are you revising your INVERTER: YES NO, if YES by _____ kW.

PROPERTY OWNER INFORMATION

Property Owner:		Point of Contact:	
Address:		Phone/Cell Phone:	P1: _____ P2: _____
		Email:	

CUSTOMER/ ACCOUNT HOLDER INFORMATION

Account Holder:		Point of Contact:	
Service Address:		TMK:	
Account #:		Phone/Cell Phone:	P1: _____ P2: _____
Meter #:		Email:	

SYSTEM OWNER INFORMATION (IF DIFFERENT FROM CUSTOMER)

Name:		Point of Contact:	
Address:		Phone/Cell Phone:	P1: _____ P2: _____
		Email:	

SYSTEM OPERATOR INFORMATION (IF DIFFERENT FROM CUSTOMER OR OWNER)

Name:		Point of Contact:	
Address:		Phone/Cell Phone:	P1: _____ P2: _____
		Email:	

ELECTRICAL CONTRACTOR INFORMATION

Name:		Company:	
Hawaii License #:		Phone/Cell Phone:	P1: _____ P2: _____
Address:		Email:	

PRIMARY CONTACT INFORMATION (FOR ADDITIONAL INFORMATION)

Name:		Email:	
Company:		Phone/Cell Phone:	P1: _____ P2: _____

*We limit our data sharing as covered in our privacy policy, available on our website

The property owner at the service address must complete this section. Please mark boxes below and sign:

- Attached is the completed and signed, program specific agreement.
- Attached is the program specific stamped and signed electrical drawings (one-line and (three-line (≥ 30 kW or per county requirements).
- Attached are the equipment specification sheets for this system.
- I acknowledge that the existing meter socket is in sound operating condition and understand that I am responsible for any needed upgrades to meet current code requirements. Photos of meter socket & main service disconnect attached.
- I acknowledge my review of the appropriate program documentation and agree to abide by that program's specific requirements.
- I understand that for systems >10 kW proof of insurance will be required prior to final execution.
- I certify that, to the best of my knowledge, all the information provided in this submission is true and correct. I will not interconnect and operate without prior written approval from (Hawaiian Electric (Maui Electric (Hawaii Electric Light.
- INVERTER BASED GENERATION:** I acknowledge that the inverters used for this system will be compliant with all of the Hawaiian Electric Companies current requirements and understand that proof of compliance will be necessary prior to execution.

The technical review may require a no cost Supplemental Review: I pre-authorize I do not pre-authorize

- I hereby acknowledge and agree that: (1) the distributed generation facility shall meet the Company's Interconnection Standards stated in Appendix I: Distributed Generating Facility Interconnection Standard Technical Requirement of Rule 14H; (2) the specific characteristics or needs of each distributed generating facility may change its interconnection requirements; and, therefore, (3) the distributed generation facility may be subject to additional interconnection requirements that are necessitated by the results of the technical review process.

Property Owner's Signature: _____

Date: _____

Printed name: _____

APPENDIX II

STANDARD INTERCONNECTION AGREEMENT

THIS AGREEMENT ("Agreement") is made this _____ day of _____, 20__, by and between Hawaii Electric Light Company, Inc., hereinafter called the Company, and _____, hereinafter called the Customer.

WHEREAS, the Customer is the recipient of electric service in accordance with the Company's Tariff; and

WHEREAS, the Customer is the owner and operator of a generating facility ("Facility"), as identified in Exhibit A and defined in Section 3 of this Agreement; and

WHEREAS, the Customer desires to interconnect the Facility in parallel with the Company's system upon the terms and conditions set forth herein.

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

1. Scope Of Agreement: This Agreement relates solely to the conditions under which the Company and the Customer agree that the Facility may be interconnected to and operated in parallel with the Company's system.
2. Parallel Operation: The Facility may interconnect and operate in parallel with the Company's system in accordance with the terms and conditions of this Agreement.
3. Facility:
 - (a) For the purposes of this Agreement, the "Facility" is defined as the equipment and devices, and associated appurtenances, owned by the Customer, which produce electric energy for use by the Customer and are to be interconnected and operated in parallel with the Company's system.
 - (b) The Customer shall furnish, install, operate and maintain, at its cost, the interconnection facilities (such as circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes) identified in Exhibit B hereto ("Customer Interconnection Facilities").

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- (c) The point of interconnection is shown on the single-line diagram and three-line diagram (provided by the Customer and reviewed by the Company) which are attached to Exhibit B (provided that the three-line diagram is not required if the Facility's capacity is less than 30 kW).
- (d) The Customer agrees to test the Facility, to maintain operating records, and to follow such operating procedures, as may be specified by the Company to protect the Company's system from damages resulting from the parallel operation of the Facility, including such testing, records and operating procedures as more fully described in Exhibit B attached hereto and made a part hereof.
- (e) The Company may inspect the Facility, as more fully described in Exhibit B.

4. Interconnection Facilities Owned by the Company: The Company agrees to furnish, install, operate and maintain such interconnection facilities on its side of the point of interconnection with the Facility as required for parallel operation with the Facility and as more fully described in Exhibit C attached hereto and made a part hereof ("Company Interconnection Facilities"). All such interconnection facilities shall be the property of the Company. Where portions of the Company Interconnection Facilities are located on the Customer's premises, the Customer shall provide, at no expense to the Company, a suitable location for and access to all such equipment. If a 120/240 Volt power source or sources are required, the Customer shall provide these at no expense to the Company.

5. Customer Payments:

- (a) The Customer agrees to pay to the Company a reasonable non-refundable contribution for the Company's investment in the interconnection facilities described in Exhibit C, subject to the terms and conditions included in Exhibit C, and to pay for other reasonable interconnection costs. The interconnection costs will not include the cost of an initial technical screening of the impact of the Facility on the Company's system, but will include the actual cost (or such lesser amount as the Company may specify to facilitate the processing of interconnection requests for similarly situated facilities) of additional technical study for the Facility, if additional technical study is conducted.

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- (b) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - Replace paragraph (a) with the following:]

The FGE agrees to pay to the Company a reasonable non-refundable contribution for the Company's investment in the interconnection facilities described in Exhibit C, and to pay for other reasonable interconnection costs by means of a modification to the existing electric service contract or other contracting vehicle. The contract modification shall be executed prior to effectuating this Agreement.

6. Commencement of Producing Energy in Parallel: After this Agreement is executed, and the Customer Interconnection Facilities and the Company Interconnection Facilities are completed, the Facility may be operated in parallel with the Company's system, provided that the Customer has satisfied the conditions in Section 3 of Exhibit B of this Agreement.
7. Incidental Deliveries of Energy: The Company shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any energy produced by the Facility and delivered into the Company's system. The meter for service received from the Company shall be ratcheted to prevent reverse registration.
8. Disconnection of Facility for Utility Reasons:
 - (a) Upon providing reasonable notice (generally not to be less than ten (10) business days for scheduled work), the Company may require the Customer to temporarily disconnect the Facility from the Company's system when necessary for the Company to construct, install, maintain, repair, replace, remove, investigate, test or inspect any of its equipment or other customers' equipment or any part of its system. If the Company determines that such disconnection is necessary because of an unexpected system emergency, forced outage, operating conditions on its systems, or compliance with good engineering practices as determined by the Company, the Company will immediately attempt to notify the Customer or the Customer's designated representatives in person, by telephone, by electronic mail, or by facsimile, of the need to disconnect the Facility. Unless the emergency condition requires immediate disconnection as determined by the Company, the Company shall allow sufficient time for the Customer to manually disconnect the Facility.

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- (b) The Facility shall not energize a de-energized utility line under any circumstances, but may operate its Facility isolated from the utility system with an open tie point in accordance with Section 4.i of Appendix I to HELCO Tariff Rule 14H.
 - (c) Following the completion of work and/or rectification of the emergency conditions by the Company, the Company shall reset the Customer's service breaker, if open, as soon as practicable and shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the Company and the Customer, written documentation of the occurrence and nature of the Company's work and/or emergency condition, and of the disconnection of the Facility.
 - (d) The Company shall take reasonable steps to minimize the number and duration of such disconnections.
 - (e) The disconnection of the Facility under this Section 8 shall not be subject to standby service charges under the Company's Schedule SS Standby Service tariff.
 - (f) The Company may disconnect the Customer from the Company's system for failure by the Customer to disconnect the Facility under this Section 8, until such time that the Company's work or the system condition has been corrected and the normal system condition has been restored.
9. Personnel and System Safety: Notwithstanding any other provisions of this Agreement, the Company may disconnect the Facility from the Company's system, without prior notice to the Customer, (a) to eliminate conditions that constitute a potential hazard to the Company's personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Company system; (c) if a hazardous condition relating to the Facility is observed by the Company's inspection; (d) if the Facility interferes with the Company's equipment or equipment belonging to other customers of the Company (including non-utility generating equipment); or (e) if the Customer of the Facility has tampered with any protective device. The Facility shall remain disconnected until such time as the Company is satisfied that the endangering condition(s) as listed above has been corrected, and the Company shall not be obligated to allow parallel operation of the Facility during such period. If the Company disconnects the Facility under this Section 9, it shall as soon as practicable

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notify the Customer in person, by telephone, by electronic mail, or by facsimile and provide the reason(s) why the Facility was disconnected from the Company's system. Following the rectification of the endangering conditions, the Company shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the Company and the Customer, written documentation of the occurrence of the endangering conditions, and of the disconnection of the Facility. The disconnection of a customer's generating facility shall not be subject to standby service charges provided that the disconnection was caused by the utility or the utility's equipment. The procedure for determining the applicability of standby charges to a disconnection event shall be specified in the Company's Schedule SS Standby Service tariff.

10. Transmission Service Not Provided with Interconnection: Interconnection with the Company's system under this Agreement does not provide the Customer any rights to utilize the Company's system for the transmission or distribution of electric power.
11. Prevention of Interference: The Customer shall not operate equipment that superimposes a voltage or current upon the Company's system that interferes with the Company's operations, service to the Company's customers, or the Company's communication facilities. Such interference shall include, but not be limited to, overcurrent, voltage imbalance, and abnormal waveforms. If such interference occurs, the Customer must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by the Company. If the Customer does not take timely corrective action, or continues to operate the equipment causing interference without restriction or limit, the Company may, without liability, disconnect the Customer's equipment from the Company's system.
12. Location of Metering: Where Company-owned metering is located on the Customer's premises, the Customer shall provide, at no expense to the Company, a suitable location for and access to all such metering.
13. Design Reviews and Inspections: The Company's review and authorization to allow the Facility to interconnect and operate in parallel with the Company's system shall not be construed as confirming or endorsing the Facility's design or as warranting the Facility's safety, durability or reliability. The Company shall not, by reason of such review or lack of review, be

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responsible for the equipment, including but not limited to, the safety, strength, adequacy, durability, reliability, performance, or capacity of such equipment.

14. Permits, Approvals, and Licenses: The Customer shall obtain, at its expense, any and all authorizations, approvals, permits, and licenses required for the construction and operation of the Facility and the interconnection with the Company's system, including but not limited to environmental permits, building permits, rights-of-way, or easements.
15. Term: This Agreement shall become effective when executed by the Customer and the Company and shall continue in effect until terminated.
16. Termination: This Agreement may be terminated as follows: (a) the Customer may terminate this Agreement at any time, by giving the Company at least sixty (60) days written notice, provided that the Facility is disconnected from the Company's system and no longer operating in parallel with the Company's system at the time this Agreement is terminated; (b) the Company may terminate this Agreement upon failure by the Customer to generate energy from the Facility in parallel with the Company's system within twelve (12) months after completion of the interconnection; (c) either party may terminate this Agreement by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the material terms and conditions of the Agreement, provided that the notice specifies the basis for the termination and there is a reasonable opportunity to cure the default; (d) the Company may terminate this Agreement if the Facility is removed from permanent service; (e) the Company and the Customer may terminate this Agreement at any time by mutual agreement provided that the agreement is in writing and signed by both parties; or (f) the Company may terminate this Agreement by giving the Customer at least sixty (60) days prior written notice in the event that there is a material change in an applicable statute, rule or tariff.
17. Disconnection and Survival of Obligations: Upon termination of this Agreement the Facility shall be disconnected from the Company's system. The termination of this Agreement shall not relieve the parties of their liabilities and obligations, owed or continuing at the time of the termination.

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18. Indemnification:

- (a) The Customer shall indemnify, defend and hold harmless the Company and its officers, directors, agents and employees, from and against all liabilities, damages, losses, fines, penalties, claims, demands, suits, costs and expenses (including reasonable attorney's fees and expenses) to or by third persons, including the Company's employees or subcontractors, for injury or death, or for injury to property, arising out of the actions or inactions of the Customer (or those of anyone under its control or on its behalf) with respect to its obligations under this Agreement, and/or arising out of the installation, operation and maintenance of the Facility and/or the Customer Interconnection Facilities, except to the extent that such injury, death or damage is attributable to the gross negligence or intentional act or omission of the Company or its officers, directors, agents or employees.
- (b) The Company shall indemnify, defend and hold harmless the Customer, and its officers, directors, agents and employees, from and against all liabilities, damages, losses, fines, penalties, claims, demands, suits, costs and expenses (including reasonable attorney's fees and expenses) to or by third persons, including the Customer's employees or subcontractors, for injury or death, or for injury to property, arising out of the actions or inactions of the Company (or those of anyone under its control or on its behalf) with respect to its obligations under this Agreement, and/or arising out of the installation, operation and maintenance of the Company Interconnection Facilities, except to the extent that such injury, death or damage is attributable to the gross negligence or intentional act or omission of the Customer or its officers, directors, agents or employees.
- (c) Nothing in this Agreement shall create any duty to, any standard of care with reference to, or any liability to any person or entity not a party to it.
- (d) **[FOR CUSTOMER THAT IS AN AGENCY OF THE STATE OF HAWAII (the "State")]**
The State shall be responsible for damages or injury caused by the State's agents, officers, and employees in the course of their employment to the extent that the State's liability for such damage or injury has been determined by a court or

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otherwise agreed to by the State. The State shall pay for such damage and injury to the extent permitted by law. The State shall use reasonable good faith efforts to pursue any approvals from the Legislature and the Governor that may be required to obtain the funding necessary to enable the State to perform its obligations or cover its liabilities hereunder. The State shall not request Company to indemnify the State for, or hold the State harmless from, any claims for such damages or injury.

Company shall be responsible for damages or injury caused by Company, Company's agents, officers, and employees in the course of their employment to the extent that Company's liability for such damage or injury has been determined by a court or otherwise agreed to by Company, and Company shall pay for such damage and injury to the extent permitted by law. Company shall not request the State to indemnify Company for, or hold Company harmless from, any claims for such damages or injury.

- (e) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - delete paragraphs (a) through (d) and replace with the following:]

Neither party hereto shall be responsible for loss or damage to the property of the other party or property of others, or for death or for personal injuries to the other party's officers, agents, servants, or employees, or to other persons, arising from or related to (a) the Company's initiation of a service interruption under this contract and/or (b) the FGE's electric service being disconnected or reconnected by the Company and/or FGE pursuant to this contract and/or (c) the parallel operation of the systems of the parties hereto or incident to the use, operation, or maintenance with respect to the furnishing of service hereunder, except for such loss, damage, death or injuries caused by the FGE for which it may be liable under the Federal Tort Claims Act and in the case of the Company as may be caused by the negligence, wrongful act or omission of the Company, its agents, servants or employees; nor, except for matters for which it may be liable under the Federal Tort Claims Act, shall the FGE be responsible in any way for any damage or loss of profit suffered by the Company arising from or incident to such use, operation or maintenance.

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19. Insurance:

- (a) The Customer shall, at its own expense and during the term of the Agreement and any other time that the Facility is interconnected with the Company's system, either (a) maintain in effect with a responsible insurance company authorized to do insurance business in Hawaii, insurance that will adequately protect the Customer and the Company with respect to risks arising under this Agreement, including the Facility's interconnection with the Company's system, provided the forms, amounts and conditions of such insurance coverage shall be as specified in Exhibit D hereto, or (b) self insure, in lieu of obtaining insurance coverage from an insurance company, provided the terms of such self insurance shall be as specified in Exhibit D hereto. Customer is responsible for determining its own level and form of insurance. The Customer's indemnity and other obligations shall not be limited by this provision. Any deductible shall be the responsibility of the Customer.

In the event Customer obtains insurance from an insurance company, proof of such insurance, including certificates of insurance showing the form and amounts of coverage, must be provided to the Company prior to any parallel interconnection. In the event Customer self insures, documentation describing the Customer's means and capability of self-insuring must be provided to the Company prior to any parallel interconnection.

- (b) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - delete paragraph (a) and insert the following:]

The Interconnection Customer is considered to be self-insured for the purpose of this agreement and shall not be required to maintain any separate policy of insurance under this section of the agreement. Notwithstanding the above, this shall in no event waive or otherwise release or limit the Interconnection Customer's liabilities undertaken pursuant to this agreement. The Company agrees to maintain general liability insurance or self-insurance consistent with the Company's commercial practice. Such insurance or self-insurance shall not exclude coverage for the Company's liabilities undertaken pursuant to this agreement. The parties to this agreement further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of

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coverage of such insurance, whether or not such coverage is sought.

20. Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected party; and (b) that the affected party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a party from fulfilling any obligations under this Agreement, such party will promptly notify the other party in writing, and will keep the other party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected party is taking to mitigate the effects of the event on its performance. The affected party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected party will use reasonable efforts to resume its performance as soon as possible.
21. Warranties: The Company and the Customer each represents and warrants respectively that:
- (a) It has all necessary right, power and authority to execute, deliver and perform this Agreement.
 - (b) The execution, delivery and performance of this Agreement by it will not result in a violation of any law or regulation of any governmental authority, or conflict with, or result in a breach of, or cause a default under, any agreement or instrument to which such party is also a party or by which it is bound.
22. Good Engineering Practice:
- (a) Each party agrees to install, operate and maintain its respective equipment and facilities and to perform all obligations required to be performed by such party under this

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Agreement in accordance with good engineering practice in the electric industry and with applicable laws, rules, orders and tariffs.

- (b) Wherever in this Agreement and the attached Exhibits the Company has the right to give specifications, determinations or approvals, such specifications, determinations or approvals shall be given in accordance with the Company's standard practices, policies and procedures, which may include the Company's Electric Service Installation Manual, the Company's Engineering Standard Practice Manual and IEEE Guides and Standards for Protective Relaying Systems.

23. Miscellaneous:

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

Company: Hawai'i Electric Light Company

Attn: _____

Customer: The mailing address listed in Exhibit A attached hereto.

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

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- (d) Effect of Section and Exhibit Headings. The headings or titles of the several sections and exhibits hereof are for convenience of reference and shall not affect the construction or interpretation of any provision of this Agreement.
- (e) Relationship of Parties. Nothing in this Agreement shall be deemed to constitute any party hereto as partner, agent or representative of the other party or to create any fiduciary relationship between the parties.
- (f) Entire Agreement. This Agreement constitutes the entire understanding and agreement between the Company and the Customer.
- (g) Limitations. Nothing in this Agreement shall limit the Company's ability to exercise its rights or expand or diminish its liability with respect to the provision of electrical service pursuant to the Company's Tariff as filed with the State of Hawaii Public Utilities Commission ("PUC"), or the PUC's Standards for Electric Utility Service in the State of Hawaii, which currently are included in the PUC's General Order Number 7, as either may be amended from time to time.
- (h) Governing Law and Regulatory Authority. This Agreement was executed in the State of Hawaii and must in all respects be governed by, interpreted, construed, and enforced in accordance with the laws thereof. This Agreement is subject to, and the parties' obligations hereunder include, operating in full compliance with all valid, applicable federal, state, and local laws or ordinances, and all applicable rules, regulations, orders of, and tariffs approved by, duly constituted regulatory authorities having jurisdiction.
- (i) Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

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Superseding REVISED SHEET NO. 38C-13
Effective May 27, 2010

REVISED SHEET NO. 38C-13
Effective December 3, 2011

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

By _____
Name
Title
Date

By _____
Name
Title
Date

By _____
Name
Title
Date

"Company"

"Customer"

HAWAII ELECTRIC LIGHT COMPANY, INC.

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

**INTERCONNECTION APPLICATION FOR ALL BUT UL1741 CERTIFIED
INVERTER BASED SYSTEMS LESS THAN 10 KW**

In addition to the information provided below, a complete Interconnection Application includes:

1) a single-line diagram, 2) relay list, trip scheme and settings of the Generating Facility, 3) Generating Facility Equipment List, and 4) three-line diagram (if needed), which identify the circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes, shall, after having obtained prior consent from the Company, be attached to and made a part of the interconnection agreement that is signed between the Customer and the Company at the end of the interconnection process.

The single-line diagram shall include pertinent information regarding operation, protection, synchronizing, control, monitoring and alarm requirements. The single-line diagram and three-line diagram shall expressly identify the point of interconnection of the Generating Facility to the Company's Distribution System. The relay list, trip scheme and settings shall include all protection, synchronizing and auxiliary relays that are required to operate the Generating Facility in a safe and reliable manner. The three-line diagram shall show potential transformer and current transformer ratios, and details of the Generating Facility's configuration, including relays, meters, and test switches.

Section 1, Applicant Information

Customer

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening) _____ Area _____
Area Code _____ Number _____ Code _____ Number _____

E-mail: _____ Account Number: _____

Facility Location (if different from above): _____

Facility Location Tax Map Key number: _____

Owner (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

E-mail: _____

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

Telephone (Daytime): Area Code _____ Number _____ (Evening) Area _____ Number _____
Code _____

Operator (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

E-mail: _____

Telephone (Daytime): Area Code _____ Number _____ (Evening) Area _____ Number _____
Code _____

Section 2, Generator Qualifications

Is the generator a Qualifying Facility as defined under Subpart B, Section 201 of the Federal Energy Regulatory Commission's regulations per the Public Utility Regulatory Policies Act of 1978, or the PUC's Standards for Small Power Production and Cogeneration (Hawaii Administrative Rules Title 6, Chapter 74)?

Yes No

Is Generator powered from a Nonfossil Fuel Source?

Yes No

Type of Qualifying Facility or Nonfossil Fuel Source (if applicable): Solar Wind Hydro

Biomass Geothermal

Other generator energy source: Diesel Other Fuel Oil Other:

PV Array DC Rated Output: _____ kW PV Array AC Rated Output: _____ kW
(CEC-CSI)²

Maximum Site Load without Generation: _____ kW Maximum Generator Capability: _____ kW

Minimum Site Load without Generation: _____ kW Maximum Export: _____ kW

² CEC-CSI means the California Energy Commission's ratings under the California Solar Initiative program.

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Section 3, Generator Technical Information

Type of Generator: Synchronous Induction Inverter-Based Generating Facility

Generator (or solar collector) Manufacturer, Model Name & Number: _____
(A copy of Generator Nameplate and Manufacturer's Specification Sheet may be substituted)

_____ Nameplate Rating in kW: _____
Operating Power Factor: _____

Inverter Manufacturer, Model Name & Number (if used): _____
(A copy of Inverter Nameplate and Manufacturer's Specification Sheet may be substituted)

_____ Rating in kW: _____
Operating Power Factor: _____

Number of Starts Per Day: _____ Maximum Starting kVA: _____

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

Generator Grounding Method:

- | | |
|--|---|
| <input type="checkbox"/> Effectively Grounded | <input type="checkbox"/> Resonant Grounded |
| <input type="checkbox"/> Low-Inductance Grounded | <input type="checkbox"/> High-Resistance Grounded |
| <input type="checkbox"/> Low-Resistance Grounded | <input type="checkbox"/> Ungrounded |

Generator Characteristic Data (for rotating machines):
(Not needed if Generator Nameplate and Manufacturer's Specification Sheet are provided)

Direct Axis Synchronous Reactance, X_d : _____ P.U. Negative Sequence Reactance: _____ P.U.
Direct Axis Transient Reactance, X'_d : _____ P.U. Zero Sequence Reactance: _____ P.U.
Direct Axis Subtransient Reactance, X''_d : _____ P.U. KVA Base: _____
Inertia Constant, H: _____ P.U.
Excitation Response Ratio: _____
Direct Axis Open-Circuit Transient Time Constant, T'_{do} : _____ Seconds
Direct Axis Open-Circuit Subtransient Time Constant, T''_{do} : _____ Seconds

Fault Current Contribution of Generator: _____ Amps

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Section 4, Interconnecting Equipment Technical Data

Will an interposing transformer be used between the generator and the point of interconnection? Yes No

Transformer Data (if applicable, for Customer Owned Transformer):
(A copy of transformer Nameplate and Manufacturer's Test Report may be substituted)

Size: _____ KVA. Transformer Primary: _____ Volts Delta Wye Wye Grounded

Transformer Secondary: _____ Volts Delta Wye Wye Grounded

Transformer Impedance: _____ % on _____ KVA Base

Transformer Fuse Data (if applicable, for Customer Owned Fuse):
(Attach copy of fuse manufacturer's Minimum Melt & Total Clearing Time-Current Curves)

At Primary Voltage Secondary Voltage

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Transformer Protection (if not fuse):

Please describe: _____

Interconnecting Circuit Breaker (if applicable):
(A copy of circuit breaker's Nameplate and Specification Sheet may be substituted)

Manufacturer: _____ Type: _____

Continuous Load Rating: _____ (Amps) Interrupting Rating: _____ (Amps) Trip Speed: _____ (Cycles)

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Circuit Breaker Protective Relays (if applicable):

(Enclose copy of any proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (if applicable):

(Enclose copy of Manufacturer's Excitation & Ratio Correction Curves)

Manufacturer: _____ Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____ /5
Manufacturer: _____ Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____ /5

Generator Disconnect Switch:

A generator disconnect device (isolation device) must be installed with features as described in the "HECO, HELCO, MECO Distributed Generating Facility Interconnection Standards, Technical Requirements" as set forth in Rule No. 14 (Paragraph H.1) of the Company's tariff, and which is accessible to Company.

Manufacturer: _____ Type: _____ Catalog No.: _____ Rated Volts: _____ Rated Amps: _____
Single or 3 Phase: _____ Mounting Location: _____

Section 5, General Technical Information

Enclose copy of site single-line diagram showing configuration and interconnection of all equipment, current and potential circuits and protection and control schemes.

Is Single-Line Diagram Enclosed? Yes

Enclose copy of site relay list and trip scheme, which shall include all protection, synchronizing and auxiliary relays that are required to operate the Facility in a safe and reliable manner.

Are Relay List and Trip Scheme Enclosed? Yes

Enclose copy of site three-line diagram (if the Facility's capacity is greater than or equal to 30 kW) showing potential transformer and current transformer ratios, and details of the Facility's configuration, including relays, meters, and test switches.

Is Three-Line Diagram Enclosed? Yes

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Section 6, Installation Details

Installing Electrical Contractor: _____ Firm: _____ License No.: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: Area Code: _____ Number: _____

Installation Date: _____ Interconnection Date: _____

Supply certification that the generating system has been installed and inspected in compliance with the local Building/Electrical code of the county of _____ .

Signed (Inspector): _____ Date: _____
(In lieu of signature of Inspector, a copy of the final inspection certificate may be attached)

Section 7, Generator/Equipment Certification

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

Signed (Customer): _____ Date: _____

Section 8, Insurance

Insurance Carrier: _____

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EXHIBIT B

FACILITY OWNED BY THE CUSTOMER

1. Facility

- a. Compliance with laws and standards. The Facility, Facility design, and Facility design drawings shall meet all applicable national, state, and local laws, rules, regulations, orders, construction and safety codes, and shall satisfy the Company's Distributed Generating Facility Interconnection Standards, Technical Requirements ("Interconnection Standards"), as set forth in Rule No. 14, Paragraph H.1 of the Company's tariff.
- b. Avoidance of adverse system conditions. The Facility shall be designed, installed, operated and maintained so as to prevent or protect against adverse conditions on the Company's system that can cause electric service degradation, equipment damage, or harm to persons, such as:
 - (i) Unintended islanding.
 - (ii) Inadvertent and unwanted re-energization of a Company dead line or bus.
 - (iii) Interconnection while out of synchronization.
 - (iv) Overcurrent.
 - (v) Voltage imbalance.
 - (vi) Ground faults.
 - (vii) Generated alternating current frequency outside of permitted safe limits.
 - (viii) Voltage outside permitted limits.
 - (ix) Poor power factor or reactive power outside permitted limits.
 - (x) Abnormal waveforms.

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- c. Specification of protection, synchronizing and control requirements. The Customer shall provide the design drawings, operating manuals, manufacturer's brochures/instruction manual and technical specifications, manufacturer's test reports, bill of material, protection and synchronizing relays and settings, and protection, synchronizing, and control schemes for the Facility to the Company for its review, and the Company shall have the right to specify the protection and synchronizing relays and settings, and protection, synchronizing and control schemes that affect the reliability and safety of operation and power quality of the Company's system with which the Facility is interconnected ("Facility Protection Devices/Schemes"). After the implementation of the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, the Company may require changes in the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, when required by the Company's system operations, at the Company's expense. After the implementation of the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, the Company may require changes in the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, when required by the Facility's operations, at the Customer's expense.
- d. Facility protection. The Customer is solely responsible for providing adequate protection for the Facility.
- e. Customer Interconnection Facilities.
- (i) The Customer shall furnish, install, operate and maintain interconnection facilities (such as circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes) designated by or acceptable to the Company as suitable for parallel operation of the Facility with the Company's system ("Customer Interconnection Facilities"). Such facilities shall be accessible at all times to authorized Company personnel.

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(ii) The Customer shall comply with the Company's Interconnection Standards. If a conflict exists between the Interconnection Standards and this Agreement, this Agreement shall control.

(iii) A 1) single-line diagram, 2) relay list, trip scheme and settings of the Facility, 3) Facility Equipment List, and 4) three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), which identify the circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes, shall, after having obtained prior consent from the Company, be attached to this Exhibit B and made a part hereof at the time the Agreement is signed. The single-line diagram shall include pertinent information regarding operation, protection, synchronizing, control, monitoring and alarm requirements. The single-line diagram and three-line diagram shall expressly identify the point of interconnection of the Facility to the Company's system. The relay list, trip scheme and settings shall include all protection, synchronizing and auxiliary relays that are required to operate the Facility in a safe and reliable manner. The three-line diagram shall show potential transformer and current transformer ratios, and details of the Facility's configuration, including relays, meters, and test switches.

f. Approval of Design Drawings. If the Facility's capacity is greater than or equal to 30 kW, the single-line diagram, relay list, trip scheme and settings of the Facility, and three-line diagram shall be approved by a Professional Electrical Engineer registered in the State of Hawaii prior to being submitted to the Company. Such approval shall be indicated by the engineer's professional seal on all drawings and documents.

2. Verification Testing.

a. Upon initial parallel operation of the Facility, or any time interface hardware or software is changed, a verification test of Customer Interconnection Facilities shall be performed by Customer. A qualified individual, hired or employed by the Customer, shall perform the verification testing in accordance with the manufacturer's published test

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procedure. Qualified individuals include professional engineers, factory trained and certified technicians, and licensed electricians with experience in testing protective equipment. The Company reserves the right to witness verification testing or require written certification that the testing was performed.

- b. Verification testing shall be performed every four years. All verification tests prescribed by the manufacturer shall be performed. If wires must be removed to perform certain tests, each wire and each terminal shall be clearly and permanently marked. The Customer shall maintain verification test reports for inspection by the Company.
- c. Single-phase inverters rated 10 kVA and below (if any) shall be verified once per year as follows: once per year the Customer shall operate the load break disconnect switch and verify the Facility automatically shuts down and does not reconnect with the Company's system until the Company's system continuous normal voltage and frequency have been maintained for a minimum of 5 minutes. The Customer shall maintain a log of these operations for inspection by the Company.
- d. Any system that depends upon a battery for trip power shall be checked once per month for proper voltage. Once every four (4) years the battery shall either be replaced or have a discharge test performed. The Customer shall maintain a log of these operations for inspection by the Company.
- e. Tests and battery replacements as specified in this section 2 of Exhibit B shall be at the Customer's expense.

3. Inspection of the Facility.

- a. The Company may, in its discretion and upon reasonable notice not to be less than 24 hours (unless otherwise agreed to by the Company and the Customer), observe the construction of the Facility (including but not limited to relay settings and trip schemes) and the equipment to be installed therein.
- b. Within fourteen days after receiving a written request from the Customer to begin producing electric energy in parallel with the Company's system, the Company may inspect the

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Facility (including but not limited to relay settings and trip schemes) and observe the performance of the verification testing. The Company may accept or reject the request to begin producing electric energy based upon the inspection or verification test results.

- c. If the Company does not perform an inspection of the Facility (including but not limited to relay settings and trip schemes) and observe the performance of verification testing within the fourteen-day period, the Customer may begin to produce energy after certifying to the Company that the Facility has been tested in accordance with the verification testing requirements and has successfully completed such tests. After receiving the certification, the Company may conduct an inspection of the Facility (including but not limited to relay settings and trip schemes) and make reasonable inquiries of the Customer, but only for purposes of determining whether the verification tests were properly performed. The Customer shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.
- d. The Company may, in its discretion and upon reasonable notice not to be less than 24 hours (unless an apparent safety or emergency situation exists which requires immediate inspection to resolve a known or suspected problem), inspect the Facility (including but not limited to relay settings and trip schemes) and its operations (including but not limited to the operation of control, synchronizing, and protection schemes) after the Facility commences operations.

4. Operating Records and Procedures.

- a. The Company may require periodic reviews of the maintenance records, and available operating procedures and policies of the Facility.
- b. The Customer must separate the Facility from the Company's system whenever requested to do so by the Company's System Operator pursuant to Sections 8, 9, and 11 of the Agreement. It is understood and agreed that at times it may not be possible for the Company to accept electric energy due to

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temporary operating conditions on the Company's system, and these periods shall be specified by the Company's System Operator. Notice shall be given in advance when these are scheduled operating conditions.

- c. Logs shall be kept by the Customer for information on unit availability including reasons for planned and forced outages; circuit breaker trip operations, relay operations, including target initiation and other unusual events. The Company shall have the right to review these logs, especially in analyzing system disturbance.

5. Changes to the Facility, Operating Records, and Operating Procedures.

- a. The Customer agrees that no material changes or additions to the Facility as reflected in the single-line diagram, relay list, trip scheme and settings of the Facility, Facility Equipment List, and three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), shall be made without having obtained prior written consent from the Company.
- b. As a result of the observations and inspections of the Facility (including but not limited to relay list, trip scheme and settings) and the performance of the verification tests, if any changes in or additions to the Facility, operating records, and operating procedures and policies are required by the Company, the Company shall specify such changes or additions to the Customer in writing, and the Customer shall, as soon as practicable, but in no event later than thirty (30) days after receipt of such changes or additions, respond in writing, either noting agreement and action to be taken or reasons for disagreement. If the Customer disagrees with the Company, it shall note alternatives it will take to accomplish the same intent, or provide the Company with a reasonable explanation as to why no action is required by good engineering practice.

(Additional terms and provisions to be added as necessary. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

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Facility Equipment List

The Facility shall include the following equipment:

(Specific items to be added as necessary. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

(This Facility Equipment List, together with the single-line diagram, relay list and trip scheme, and three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), should be attached behind Exhibit B. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

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EXHIBIT C

INTERCONNECTION FACILITIES OWNED BY THE COMPANY

1. Description of Company Interconnection Facilities

The Company will purchase, construct, own, operate and maintain all interconnection facilities required to interconnect the Company's system with the Facility at ___ volts, up to the point of interconnection.

The Company Interconnection Facilities, for which the Customer agrees to pay, include:

[Need to specify the interconnection facilities. If no interconnection facilities, state "None".]

2. Customer Payment to Company for Company Interconnection Facilities, Review of Facility, and Review of Verification Testing

The Customer shall pay to the Company the total estimated interconnection cost to be incurred by the Company (Total Estimated Interconnection Cost), which is comprised of (i) the estimated cost of the Company Interconnection Facilities, (ii) the estimated engineering costs associated with a) developing the Company Interconnection Facilities and b) reviewing and specifying those portions of the Facility which allow interconnected operations as such are described in Exhibit B, and iii) reviewing the verification testing. The following summarizes the Total Estimated Interconnection Cost:

<u>Description</u>	<u>Estimated Cost (\$)</u>
[Need to specify the estimated interconnection cost. If no cost, state "None". If the Company determines that there are benefits to the utility system due to the Company interconnection facilities, a credit reflecting these benefits shall be provided to the Customer, subject to Commission approval. See Appendix III, Section 2.d concerning this subject. The amount of the credit reflecting these benefits, if any, would be reflected in this section of the Standard Interconnection Agreement.]	
Total Estimated Interconnection Cost	\$

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The Total Estimated Interconnection Cost, which, except as otherwise provided herein, is non-refundable, shall be paid by the Customer fourteen (14) days after receipt of an invoice from the Company, which shall be provided not less than thirty (30) days prior to start of procurement of the Company Interconnection Facilities.

Within thirty (30) days of receipt of an invoice, which shall be provided within fourteen (14) days of the final accounting, which shall take place within sixty (60) days of completion of construction of the Company Interconnection Facilities, the Customer shall remit to the Company the difference between the Total Estimated Interconnection Cost paid to date and the lesser of one hundred twenty percent (120%) of the Total Estimated Interconnection Cost or the total actual interconnection cost (Total Actual Interconnection Cost). The latter is comprised of (i) the total costs of the Company Interconnection Facilities, and (ii) the total engineering costs associated with a) developing the Company Interconnection Facilities and b) reviewing and specifying those portions of the Facility which allow interconnected operations as such are described in Exhibit B, and iii) reviewing the verification testing. If in fact the Total Actual Interconnection Cost is less than the payments received by the Company as the Total Estimated Interconnection Cost, the Company shall repay the difference to the Customer within thirty (30) days of the final accounting.

If the Agreement is terminated prior to the Customer's payment for the Total Actual Interconnection Cost (or the portion of this cost which has been incurred) or prior to the Company's repayment of the overcollected amount of the Total Estimated Interconnection Cost (or the portion of this cost which has been paid), such payments shall be made by the Customer or Company, as appropriate. If payment is due to the Company, the Customer shall pay within thirty (30) days of receipt of an invoice, which shall be provided within fourteen (14) days of the final accounting, which shall take place within sixty (60) days of the date the Agreement is terminated. If payment is due to the Customer, the Company shall pay within thirty (30) days of the final accounting.

All Company Interconnection Facilities shall be the property of the Company.

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3. Operation, Maintenance and Testing Costs

The Company will bill the Customer monthly and the Customer will, within 30 days after the billing date, reimburse the Company for any costs incurred in operating, maintaining or testing the Company Interconnection Facilities, to the extent such costs are not included in or are not appropriate for inclusion in the Company's base rates. The Company's costs will be determined on the basis of outside service costs, direct labor costs, material costs, transportation costs, applicable overheads at time incurred and applicable taxes. Applicable overheads will include such costs as vacation, payroll taxes, non-productive wages, supervision, tools expense, employee benefits, engineering administration, corporate administration, and materials handling. Applicable taxes will include the Public Service Company Tax, and Public Utility Fee.

4. Customer Use of Company Interconnection Facilities Upon Termination

Notwithstanding that all Company Interconnection Facilities are the property of the Company, upon termination of the Agreement, the Company shall identify any equipment paid for by the Customer that can feasibly be returned to the Customer. If Customer desires such equipment, Customer shall pay for the removal of the equipment and the restoration of the Company's system to the Company's satisfaction.

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Superseding SHEET NO. 38C-33
Effective May 27, 2010

REVISED SHEET NO. 38C-33
Effective December 3, 2011

EXHIBIT D

CUSTOMER INSURANCE COVERAGE

In accordance with section 19 of the Agreement, Customer shall maintain the following insurance and under the following conditions:

In the alternative, in accordance with section 19 of the Agreement, Customer shall self insure against risks arising under this Agreement in the following manner and under the following conditions:

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APPENDIX II-A

STANDARD THREE PARTY INTERCONNECTION AGREEMENT

THIS AGREEMENT ("Agreement") is made this _____ day of _____, 20__, by and between Hawaii Electric Light Company, Inc., hereinafter called the Company, and _____, hereinafter called the Customer AND _____, hereinafter called Owner. Customer and Owner shall be collectively referred to as "Facility Parties".

WHEREAS, the Customer is the recipient of electric service in accordance with the Company's Tariff; and

WHEREAS, the Owner is the owner of a generating facility ("Facility"), as identified in Exhibit A and defined in Section 3 of this Agreement; and

WHEREAS, the Owner may operate the Facility, or the Owner may subcontract the operation of the Facility to another party; and

WHEREAS the Owner intends to sell power to the Customer from the Facility; and

WHEREAS, the Facility Parties desire to interconnect the Facility in parallel with the Company's system upon the terms and conditions set forth herein.

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

1. Scope Of Agreement: This Agreement relates solely to the conditions under which the Company and the Facility Parties agree that the Facility may be interconnected to and operated in parallel with the Company's system.
2. Parallel Operation: The Facility may interconnect and operate in parallel with the Company's system in accordance with the terms and conditions of this Agreement.
3. Facility:
 - (a) For the purposes of this Agreement, the "Facility" is defined as the equipment and devices, and associated appurtenances, owned by the Owner, which produce electric energy for use by the Facility Parties and are to be

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interconnected and operated in parallel with the Company's system.

- (b) The Facility Parties shall furnish, install, operate and maintain, at its cost, the interconnection facilities (such as circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes) identified in Exhibit B hereto ("Facility Parties Interconnection Facilities").
- (c) The point of interconnection is shown on the single-line diagram and three-line diagram (provided by the Facility Parties and reviewed by the Company) which are attached to Exhibit B (provided that the three-line diagram is not required if the Facility's capacity is less than 30 kW).
- (d) The Facility Parties agree to test the Facility, to maintain operating records, and to follow such operating procedures, as may be specified by the Company to protect the Company's system from damages resulting from the parallel operation of the Facility, including such testing, records and operating procedures as more fully described in Exhibit B attached hereto and made a part hereof.
- (e) The Company may inspect the Facility, as more fully described in Exhibit B.

4. Interconnection Facilities Owned by the Company: The Company agrees to furnish, install, operate and maintain such interconnection facilities on its side of the point of interconnection with the Facility as required for parallel operation with the Facility and as more fully described in Exhibit C attached hereto and made a part hereof ("Company Interconnection Facilities"). All such interconnection facilities shall be the property of the Company. Where portions of the Company Interconnection Facilities are located on the premises of the Facility Parties, the Facility Parties shall provide, at no expense to the Company, a suitable location for and access to all such equipment. If a 120/240 Volt power source or sources are required, the Facility Parties shall provide these at no expense to the Company.

5. Facility Parties Payments:

- (a) The Facility Parties agree to pay to the Company a reasonable non-refundable contribution for the Company's

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investment in the interconnection facilities described in Exhibit C, subject to the terms and conditions included in Exhibit C, and to pay for other reasonable interconnection costs. The interconnection costs will not include the cost of an initial technical screening of the impact of the Facility on the Company's system, but will include the actual cost (or such lesser amount as the Company may specify to facilitate the processing of interconnection requests for similarly situated facilities) of additional technical study for the Facility, if additional technical study is conducted.

- (b) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - Replace paragraph (a) with the following:]

The FGE agrees to pay to the Company a reasonable non-refundable contribution for the Company's investment in the interconnection facilities described in Exhibit C, and to pay for other reasonable interconnection costs by means of a modification to the existing electric service contract or other contracting vehicle. The contract modification shall be executed prior to effectuating this Agreement.

6. Commencement of Producing Energy in Parallel: After this Agreement is executed, and the Facility Parties Interconnection Facilities and the Company Interconnection Facilities are completed, the Facility may be operated in parallel with the Company's system, provided that the Facility Parties have satisfied the conditions in Section 3 of Exhibit B of this Agreement.
7. Incidental Deliveries of Energy: The Company shall have no duty under this Agreement to account for, pay for, deliver, or return in kind any energy produced by the Facility and delivered into the Company's system. The meter for service received from the Company shall be ratcheted to prevent reverse registration.
8. Disconnection of Facility for Utility Reasons:
- (a) Upon providing reasonable notice (generally not to be less than ten (10) business days for scheduled work), the Company may require the Facility Parties to temporarily disconnect the Facility from the Company's system when necessary for the Company to construct, install, maintain, repair, replace, remove, investigate, test or inspect any of its equipment or other customers' equipment or any part of its

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system. If the Company determines that such disconnection is necessary because of an unexpected system emergency, forced outage, operating conditions on its systems, or compliance with good engineering practices as determined by the Company, the Company will immediately attempt to notify the Facility Parties or the Facility Parties' designated representatives in person, by telephone, by electronic mail, or by facsimile, of the need to disconnect the Facility. Unless the emergency condition requires immediate disconnection as determined by the Company, the Company shall allow sufficient time for the Facility Parties to manually disconnect the Facility.

- (b) The Facility shall not energize a de-energized utility line under any circumstances, but may operate its Facility isolated from the utility system with an open tie point in accordance with Section 4.i of Appendix I to HELCO Tariff Rule 14H.
- (c) Following the completion of work and/or rectification of the emergency conditions by the Company, the Company shall reset the Facility Parties' service breaker, if open, as soon as practicable and shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the Company and the Facility Parties, written documentation of the occurrence and nature of the Company's work and/or emergency condition, and of the disconnection of the Facility.
- (d) The Company shall take reasonable steps to minimize the number and duration of such disconnections.
- (e) The disconnection of the Facility under this Section 8 shall not be subject to standby service charges under the Company's Schedule SS Standby Service tariff.
- (f) The Company may disconnect the Facility Parties from the Company's system for failure by the Facility Parties to disconnect the Facility under this Section 8, until such time that the Company's work or the system condition has been corrected and the normal system condition has been restored.

9. Personnel and System Safety: Notwithstanding any other provisions of this Agreement, the Company may disconnect the Facility from the Company's system, without prior notice to the

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Facility Parties, (a) to eliminate conditions that constitute a potential hazard to the Company's personnel or the general public; (b) if pre-emergency or emergency conditions exist on the Company system; (c) if a hazardous condition relating to the Facility is observed by the Company's inspection; (d) if the Facility interferes with the Company's equipment or equipment belonging to other customers of the Company (including non-utility generating equipment); or (e) if the Facility Parties have tampered with any protective device. The Facility shall remain disconnected until such time as the Company is satisfied that the endangering condition(s) as listed above has been corrected, and the Company shall not be obligated to allow parallel operation of the Facility during such period. If the Company disconnects the Facility under this Section 9, it shall as soon as practicable notify the Facility Parties in person, by telephone, by electronic mail, or by facsimile and provide the reason(s) why the Facility was disconnected from the Company's system. Following the rectification of the endangering conditions, the Company shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing by the Company and the Facility Parties, written documentation of the occurrence of the endangering conditions, and of the disconnection of the Facility. The disconnection of a Facility Parties generating facility shall not be subject to standby service charges provided that the disconnection was caused by the utility or the utility's equipment. The procedure for determining the applicability of standby charges to a disconnection event shall be specified in the Company's Schedule SS Standby Service tariff.

10. Transmission Service Not Provided with Interconnection:
Interconnection with the Company's system under this Agreement does not provide the Facility Parties any rights to utilize the Company's system for the transmission or distribution of electric power.

11. Prevention of Interference:
The Facility Parties shall not operate equipment that superimposes a voltage or current upon the Company's system that interferes with the Company's operations, service to the Company's customers, or the Company's communication facilities. Such interference shall include, but not be limited to, overcurrent, voltage imbalance, and abnormal waveforms. If such interference occurs, the Facility Parties must diligently pursue and take corrective action at its own expense after being given notice and reasonable time to do so by the Company. If the

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Facility Parties does not take timely corrective action, or continues to operate the equipment causing interference without restriction or limit, the Company may, without liability, disconnect the Facility Parties equipment from the Company's system.

12. Location of Metering: Where Company-owned metering is located on the premises of the Facility Parties, the Facility Parties shall provide, at no expense to the Company, a suitable location for and access to all such metering.
13. Design Reviews and Inspections: The Company's review and authorization to allow the Facility to interconnect and operate in parallel with the Company's system shall not be construed as confirming or endorsing the Facility's design or as warranting the Facility's safety, durability or reliability. The Company shall not, by reason of such review or lack of review, be responsible for the equipment, including but not limited to, the safety, strength, adequacy, durability, reliability, performance, or capacity of such equipment.
14. Permits, Approvals, and Licenses: The Facility Parties shall obtain, at its expense, any and all authorizations, approvals, permits, and licenses required for the construction and operation of the Facility and the interconnection with the Company's system, including but not limited to environmental permits, building permits, rights-of-way, or easements.
15. Term: This Agreement shall become effective when executed by the Facility Parties and the Company and shall continue in effect until terminated.
16. Termination: This Agreement may be terminated as follows: (a) the Facility Parties may terminate this Agreement at any time, by giving the Company at least sixty (60) days written notice, provided that the Facility is disconnected from the Company's system and no longer operating in parallel with the Company's system at the time this Agreement is terminated; (b) the Company may terminate this Agreement upon failure by the Facility Parties to generate energy from the Facility in parallel with the Company's system within twelve (12) months after completion of the interconnection; (c) either party may terminate this Agreement by giving the other party at least thirty (30) days prior written notice that the other party is in default of any of the material terms and conditions of the Agreement, provided that the notice specifies the basis for the termination and there is a

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reasonable opportunity to cure the default; (d) the Company may terminate this Agreement if the Facility is removed from permanent service; (e) the Company and the Facility Parties may terminate this Agreement at any time by mutual agreement provided that the agreement is in writing and signed by both parties; or (f) the Company may terminate this Agreement by giving the Facility Parties at least sixty (60) days prior written notice in the event that there is a material change in an applicable statute, rule or tariff.

17. Disconnection and Survival of Obligations: Upon termination of this Agreement the Facility shall be disconnected from the Company's system. The termination of this Agreement shall not relieve the parties of their liabilities and obligations, owed or continuing at the time of the termination.

18. Indemnification:

(a) The Customer shall indemnify, defend and hold harmless the Company and its officers, directors, agents and employees, from and against all liabilities, damages, losses, fines, penalties, claims, demands, suits, costs and expenses (including reasonable attorney's fees and expenses) to or by third persons, including the Company's employees or subcontractors, for injury or death, or for injury to property, arising out of the actions or inactions of the Customer (or those of anyone under their control or on their behalf) with respect to their obligations under this Agreement, and/or arising out of the installation, operation and maintenance of the Facility and/or Customer Interconnection Facilities, except to the extent that such injury, death or damage is attributable to the gross negligence or intentional act or omission of the Company or its officers, directors, agents or employees.

(b) The Owner shall indemnify, defend and hold harmless the Company and its officers, directors, agents and employees, from and against all liabilities, damages, losses, fines, penalties, claims, demands, suits, costs and expenses (including reasonable attorney's fees and expenses) to or by third persons, including the Company's employees or subcontractors, for injury or death, or for injury to property, arising out of the actions or inactions of the Owner (or those of anyone under their control or on their behalf) with respect to their obligations under this Agreement, and/or arising out of the installation, operation

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and maintenance of the Facility and/or Owner Interconnection Facilities, except to the extent that such injury, death or damage is attributable to the gross negligence or intentional act or omission of the Company or its officers, directors, agents or employees.

- (c) The Company shall indemnify, defend and hold harmless the Facility Parties, and their officers, directors, agents and employees, from and against all liabilities, damages, losses, fines, penalties, claims, demands, suits, costs and expenses (including reasonable attorney's fees and expenses) to or by third persons, including the Facility Parties' employees or subcontractors, for injury or death, or for injury to property, arising out of the actions or inactions of the Company (or those of anyone under its control or on its behalf) with respect to its obligations under this Agreement, and/or arising out of the installation, operation and maintenance of the Company Interconnection Facilities, except to the extent that such injury, death or damage is attributable to the gross negligence or intentional act or omission of the Facility Parties or their officers, directors, agents or employees
- (d) Nothing in this Agreement shall create any duty to, any standard of care with reference to, or any liability to any person or entity not a party to it.
- (e) **[FOR OWNER OR CUSTOMER THAT IS AN AGENCY OF THE STATE OF HAWAII (the "State")]**
The State shall be responsible for damages or injury caused by the State's agents, officers, and employees in the course of their employment to the extent that the State's liability for such damage or injury has been determined by a court or otherwise agreed to by the State. The State shall pay for such damage and injury to the extent permitted by law. The State shall use reasonable good faith efforts to pursue any approvals from the Legislature and the Governor that may be required to obtain the funding necessary to enable the State to perform its obligations or cover its liabilities hereunder. The State shall not request Company to indemnify the State for, or hold the State harmless from, any claims for such damages or injury.

Company shall be responsible for damages or injury caused by Company, Company's agents, officers, and employees in the course of their employment to the extent that Company's

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liability for such damage or injury has been determined by a court or otherwise agreed to by Company, and Company shall pay for such damage and injury to the extent permitted by law. Company shall not request the State to indemnify Company for, or hold Company harmless from, any claims for such damages or injury.

- (f) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - delete paragraphs (a) through (e) and replace with the following:]

Neither party hereto shall be responsible for loss or damage to the property of the other party or property of others, or for death or for personal injuries to the other party's officers, agents, servants, or employees, or to other persons, arising from or related to (a) the Company's initiation of a service interruption under this contract and /or (b) the FGE's electric service being disconnected or reconnected by the Company and/or FGE pursuant to this contract and/or (c) the parallel operation of the systems of the parties hereto or incident to the use, operation, or maintenance with respect to the furnishing of service hereunder, except for such loss, damage, death or injuries caused by the FGE for which it may be liable under the Federal Tort Claims Act and in the case of the Company as may be caused by the negligence, wrongful act or omission of the Company, its agents, servants or employees; nor, except for matters for which it may be liable under the Federal Tort Claims Act, shall the FGE be responsible in any way for any damage or loss of profit suffered by the Company arising from or incident to such use, operation or maintenance.

19. Insurance:

- (a) The Facility Parties shall, at their own expense and during the term of the Agreement and any other time that the Facility is interconnected with the Company's system, either (a) maintain in effect with a responsible insurance company authorized to do insurance business in Hawaii, insurance that will adequately protect the Facility Parties and the Company with respect to risks arising under this Agreement, including the Facility's interconnection with the Company's system, provided the forms, amounts and conditions of such insurance coverage shall be as specified in Exhibit D hereto, or (b) self insure, in lieu of obtaining insurance coverage from an insurance company, provided the terms of such self insurance shall be as specified in Exhibit D

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hereto. Facility Parties are responsible for determining its own level and form of insurance. The Facility Parties' indemnity and other obligations shall not be limited by this provision. Any deductible shall be the responsibility of the Facility Parties. In the event Facility Parties obtains insurance from an insurance company, proof of such insurance, including certificates of insurance showing the form and amounts of coverage, must be provided to the Company prior to any parallel interconnection. In the event Facility Parties self insures, documentation describing the Facility Parties' means and capability of self-insuring must be provided to the Company prior to any parallel interconnection.

- (b) [FOR FEDERAL GOVERNMENT ENTITIES (the "FGE") - delete paragraph (a) and insert the following:]

The Interconnection Customer is considered to be self-insured for the purpose of this agreement and shall not be required to maintain any separate policy of insurance under this section of the agreement. Notwithstanding the above, this shall in no event waive or otherwise release or limit the Interconnection Customer's liabilities undertaken pursuant to this agreement. The Company agrees to maintain general liability insurance or self-insurance consistent with the Company's commercial practice. Such insurance or self-insurance shall not exclude coverage for the Company's liabilities undertaken pursuant to this agreement. The parties to this agreement further agree to notify each other whenever an accident or incident occurs resulting in any injuries or damages that are included within the scope of coverage of such insurance, whether or not such coverage is sought.

20. Force Majeure: For purposes of this Agreement, "Force Majeure Event" means any event: (a) that is beyond the reasonable control of the affected party; and (b) that the affected party is unable to prevent or provide against by exercising reasonable diligence, including the following events or circumstances, but only to the extent they satisfy the preceding requirements: acts of war, public disorder, insurrection, or rebellion; floods, hurricanes, earthquakes, lightning, storms, and other natural calamities; explosions or fires; strikes, work stoppages, or labor disputes; embargoes; and sabotage. If a Force Majeure Event prevents a party from fulfilling any obligations under this Agreement, such party will promptly notify the other party in writing, and will

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keep the other party informed on a continuing basis of the scope and duration of the Force Majeure Event. The affected party will specify in reasonable detail the circumstances of the Force Majeure Event, its expected duration, and the steps that the affected party is taking to mitigate the effects of the event on its performance. The affected party will be entitled to suspend or modify its performance of obligations under this Agreement, other than the obligation to make payments then due or becoming due under this Agreement, but only to the extent that the effect of the Force Majeure Event cannot be mitigated by the use of reasonable efforts. The affected party will use reasonable efforts to resume its performance as soon as possible.

21. Warranties: The Company, and the Facility Parties each represents and warrants respectively that:

- (a) It has all necessary right, power and authority to execute, deliver and perform this Agreement.
- (b) The execution, delivery and performance of this Agreement by it will not result in a violation of any law or regulation of any governmental authority, or conflict with, or result in a breach of, or cause a default under, any agreement or instrument to which such party is also a party or by which it is bound.

22. Good Engineering Practice:

- (a) Each party agrees to install, operate and maintain its respective equipment and facilities and to perform all obligations required to be performed by such party under this Agreement in accordance with good engineering practice in the electric industry and with applicable laws, rules, orders and tariffs.
- (b) Wherever in this Agreement and the attached Exhibits the Company has the right to give specifications, determinations or approvals, such specifications, determinations or approvals shall be given in accordance with the Company's standard practices, policies and procedures, which may include the Company's Electric Service Installation Manual, the Company's Engineering Standard Practice Manual and IEEE Guides and Standards for Protective Relaying Systems.

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23. Miscellaneous:

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

Company: _____

Attn: _____

Customer: The mailing address listed in Exhibit A attached hereto.

Owner: The mailing address listed in Exhibit A attached hereto.

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

- (d) Effect of Section and Exhibit Headings. The headings or titles of the several sections and exhibits hereof are for convenience of reference and shall not affect the construction or interpretation of any provision of this Agreement.
- (e) Relationship of Parties. Nothing in this Agreement shall be deemed to constitute any party hereto as partner, agent or representative of the other party or to create any fiduciary relationship between the parties.

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- (f) Entire Agreement. This Agreement constitutes the entire understanding and agreement between the Company and the Facility Parties.
- (g) Limitations. Nothing in this Agreement shall limit the Company's ability to exercise its rights or expand or diminish its liability with respect to the provision of electrical service pursuant to the Company's Tariff as filed with the State of Hawaii Public Utilities Commission ("PUC"), or the PUC's Standards for Electric Utility Service in the State of Hawaii, which currently are included in the PUC's General Order Number 7, as either may be amended from time to time.
- (h) Governing Law and Regulatory Authority. This Agreement was executed in the State of Hawaii and must in all respects be governed by, interpreted, construed, and enforced in accordance with the laws thereof. This Agreement is subject to, and the parties' obligations hereunder include, operating in full compliance with all valid, applicable federal, state, and local laws or ordinances, and all applicable rules, regulations, orders of, and tariffs approved by, duly constituted regulatory authorities having jurisdiction.
- (i) Multiple Counterparts. This Agreement may be executed in two or more counterparts, each of which is deemed an original but all constitute one and the same instrument.

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Superseding SHEET NO. 38C-47
Effective May 27, 2010

REVISED SHEET NO. 38C-47
Effective December 3, 2011

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

By _____
Name:
Title:
Date:

By _____
Name:
Title:
Date:

By _____
Name:
Title:
Date:

"Company"

"Customer"

By _____
Name:
Title:
Date:

"Owner"

HAWAII ELECTRIC LIGHT COMPANY, INC.

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

EXHIBIT A

**Application for Interconnecting a UL1741 Certified Inverter-Based Small
Generating Facility No Larger than 10kW**

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

Customer

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime):
Area Code _____ Number _____ (Evening) Area Code _____ Number _____

Fax: _____ E-Mail Address: _____

Electric Service Company and Account No.:

Facility Location (if different from above): _____

Facility Location Tax Map Key number: _____

Owner of the Generating Facility (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime):
Area Code _____ Number _____ (Evening) Area Code _____ Number _____

Fax: _____ E-Mail Address: _____

Operator (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip: _____

Telephone (Daytime):
Area Code _____ Number _____ (Evening) Area Code _____ Number _____

Fax: _____ E-Mail Address: _____

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Generating Facility Information

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

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

Single Phase _____ Three Phase _____

System Design Capacity: _____ (kW) _____ (kVA) _____ (AC Volts) (CEC-CSI)

Prime Mover: Photovoltaic Reciprocating Engine Fuel Cell

Turbine Other _____

Energy Source: Solar Wind Hydro Diesel Natural Gas

Fuel Oil Other (describe) _____

Is the equipment UL1741 Listed? Yes _____ No _____

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

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

Estimated Installation Date: _____ Estimated In-Service Date: _____

The 10 kW Inverter Process is available only for inverter-based Generating Facilities no larger than 10 kW that meet the codes, standards, and certification requirements of NEC, UL 1741, IEEE, County Electrical Building Codes, and the Company's interconnection requirements in effect at the time of signing this application.

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

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

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

Installation Details

Installing Electrical Contractor: _____ Firm: _____ License No.: _____

Mailing Address: _____

¹ CEC-CSI means the California Energy Commission's ratings under the California Solar Initiative program.
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Superseding SHEET NO. 38C-50
Effective May 27, 2010

REVISED SHEET NO. 38C-50
Effective December 3, 2011

City: _____ State: _____ Zip Code: _____

Telephone: Area Code: _____ Number: _____

Installation Date: _____ Interconnection Date: _____

Supply certification that the generating system has been installed and inspected in compliance with the local Building/Electrical code of the county of _____ .

Signed (Inspector): _____ Date: _____
(In lieu of signature of Inspector, a copy of the final inspection certificate may be attached)

Generator/Equipment Certification

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

Signed (Facility Parties): _____ Date: _____

Insurance

Insurance Carrier: _____

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

**INTERCONNECTION APPLICATION FOR ALL BUT UL1741 CERTIFIED INVERTER
BASED SYSTEMS LESS THAN 10 KW**

In addition to the information provided below, a complete Interconnection Application includes:

1) a single-line diagram, 2) relay list, trip scheme and settings of the Generating Facility, 3) Generating Facility Equipment List, and 4) three-line diagram (if needed), which identify the circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes, shall, after having obtained prior consent from the Company, be attached to and made a part of the interconnection agreement that is signed between the Facility Parties and the Company at the end of the interconnection process.

The single-line diagram shall include pertinent information regarding operation, protection, synchronizing, control, monitoring and alarm requirements. The single-line diagram and three-line diagram shall expressly identify the point of interconnection of the Generating Facility to the Company's Distribution System. The relay list, trip scheme and settings shall include all protection, synchronizing and auxiliary relays that are required to operate the Generating Facility in a safe and reliable manner. The three-line diagram shall show potential transformer and current transformer ratios, and details of the Generating Facility's configuration, including relays, meters, and test switches.

Section 1, Applicant Information

Customer

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone (Daytime): _____ (Evening) _____ Area _____
Area Code _____ Number _____ Code _____ Number _____

E-mail: _____

Facility Location (if different from above): _____

Facility Location (Tax Map Key Number): _____

Owner (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

E-mail: _____

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Transmittal Letter Dated December 2, 2011.

Telephone (Daytime): Area Code _____ Number _____ (Evening) Area Code _____ Number _____

Operator (if different from Customer)

Name: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

E-mail: _____

Telephone (Daytime): Area Code _____ Number _____ (Evening) Area Code _____ Number _____

Section 2, Generator Qualifications

Is the generator a Qualifying Facility as defined under Subpart B, Section 201 of the Federal Energy Regulatory Commission's regulations per the Public Utility Regulatory Policies Act of 1978, or the PUC's Standards for Small Power Production and Cogeneration (Hawaii Administrative Rules Title 6, Chapter 74)?

Yes No

Is Generator powered from a Nonfossil Fuel Source?

Yes No

Type of Qualifying Facility or Nonfossil Fuel Source (if applicable): Solar Wind Hydro Biomass Geothermal

Other generator energy source: Diesel Other Fuel Oil Other: _____

PV Array DC Rated Output: _____ kW PV Array AC Rated Output: _____ kW (CEC-CSI)²

Maximum Site Load without Generation: _____ kW Maximum Generating Capability: _____ kW

Minimum Site Load without Generation: _____ kW Maximum Export: _____ kW

² CEC-CSI means the California Energy Commission's ratings under the California Solar Initiative program.
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Section 3. Generator Technical Information

Type of Generator: Synchronous Induction Inverter-Based Generating Facility

Generator (or solar collector) Manufacturer, Model Name & Number: _____
(A copy of Generator Nameplate and Manufacturer's Specification Sheet may be substituted)

_____ Nameplate Rating in kW: _____
Operating Power Factor: _____

Inverter Manufacturer, Model Name & Number (if used): _____
(A copy of Inverter Nameplate and Manufacturer's Specification Sheet may be substituted)

_____ Rating in kW: _____
Operating Power Factor: _____

Number of Starts Per Day: _____ Maximum Starting kVA: _____

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

Generator Grounding Method:

- | | |
|--|---|
| <input type="checkbox"/> Effectively Grounded | <input type="checkbox"/> Resonant Grounded |
| <input type="checkbox"/> Low-Inductance Grounded | <input type="checkbox"/> High-Resistance Grounded |
| <input type="checkbox"/> Low-Resistance Grounded | <input type="checkbox"/> Ungrounded |

Generator Characteristic Data (for rotating machines):
(Not needed if Generator Nameplate and Manufacturer's Specification Sheet are provided)

Direct Axis Synchronous Reactance, X_d : _____ P.U. Negative Sequence Reactance: _____ P.U.

Direct Axis Transient Reactance, X'_d : _____ P.U. Zero Sequence Reactance: _____ P.U.

Direct Axis Subtransient Reactance, X''_d : _____ P.U. KVA Base: _____

Inertia Constant, H: _____ P.U.

Excitation Response Ratio: _____

Direct Axis Open-Circuit Transient Time Constant, T'_{do} : _____ Seconds

Direct Axis Open-Circuit Subtransient Time Constant, T''_{do} : _____ Seconds

Fault Current Contribution of Generator: _____ Amps

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Section 4, Interconnecting Equipment Technical Data

Will an interposing transformer be used between the generator and the point of interconnection? Yes No

Transformer Data (if applicable, for Facility Parties Owned Transformer):

(A copy of transformer Nameplate and Manufacturer's Test Report may be substituted)

Size: _____ KVA. Transformer Primary: _____ Volts Delta Wye Wye Grounded

Transformer Secondary: _____ Volts Delta Wye Wye Grounded

Transformer Impedance: _____ % on _____ KVA Base

Transformer Fuse Data (if applicable, for Facility Parties Owned Fuse):

(Attach copy of fuse manufacturer's Minimum Melt & Total Clearing Time-Current Curves)

At Primary Voltage Secondary Voltage

Manufacturer: _____ Type: _____ Size: _____ Speed: _____

Transformer Protection (if not fuse):

Please describe: _____

Interconnecting Circuit Breaker (if applicable):

(A copy of circuit breaker's Nameplate and Specification Sheet may be substituted)

Manufacturer: _____ Type: _____

Continuous Load Rating: _____ (Amps) Interrupting Rating: _____ (Amps) Trip Speed: _____ (Cycles)

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Circuit Breaker Protective Relays (if applicable):
(Enclose copy of any proposed Time-Overcurrent Coordination Curves)

Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____
Manufacturer: _____ Type: _____ Style/Catalog No.: _____ Proposed Setting: _____

Current Transformer Data (if applicable):
(Enclose copy of Manufacturer's Excitation & Ratio Correction Curves)

Manufacturer: _____ Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____ /5
Manufacturer: _____ Type: _____ Accuracy Class: _____ Proposed Ratio Connection: _____ /5

Generator Disconnect Switch:

A generator disconnect device (isolation device) must be installed with features as described in the "HECO, HELCO, MECO Distributed Generating Facility Interconnection Standards, Technical Requirements" as set forth in Rule No. 14 (Paragraph H.1) of the Company's tariff, and which is accessible to Company.

Manufacturer: _____ Type: _____ Catalog No.: _____ Rated Volts: _____ Rated Amps: _____
Single or 3 Phase: _____ Mounting Location: _____

Section 5, General Technical Information

Enclose copy of site single-line diagram showing configuration and interconnection of all equipment, current and potential circuits and protection and control schemes.

Is Single-Line Diagram Enclosed? Yes

Enclose copy of site relay list and trip scheme, which shall include all protection, synchronizing and auxiliary relays that are required to operate the Facility in a safe and reliable manner.

Are Relay List and Trip Scheme Enclosed? Yes

Enclose copy of site three-line diagram (if the Facility's capacity is greater than or equal to 30 kW) showing potential transformer and current transformer ratios, and details of the Facility's configuration, including relays, meters, and test switches.

Is Three-Line Diagram Enclosed? Yes

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Section 6, Installation Details

Installing Electrical Contractor: _____ Firm: _____ License No.: _____

Mailing Address: _____

City: _____ State: _____ Zip Code: _____

Telephone: Area Code: _____ Number: _____

Installation Date: _____ Interconnection Date: _____

Supply certification that the generating system has been installed and inspected in compliance with the local Building/Electrical code of the county of _____ .

Signed (Inspector): _____ Date: _____
(In lieu of signature of Inspector, a copy of the final inspection certificate may be attached)

Section 7, Generator/Equipment Certification

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

Signed (Facility Parties): _____ Date: _____

Section 8, Insurance

Insurance Carrier: _____

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EXHIBIT B

FACILITY OWNED BY THE OWNER

1. Facility

- a. Compliance with laws and standards. The Facility, Facility design, and Facility design drawings shall meet all applicable national, state, and local laws, rules, regulations, orders, construction and safety codes, and shall satisfy the Company's Distributed Generating Facility Interconnection Standards, Technical Requirements ("Interconnection Standards"), as set forth in Rule No. 14, Paragraph H.1 of the Company's tariff.
- b. Avoidance of adverse system conditions. The Facility shall be designed, installed, operated and maintained so as to prevent or protect against adverse conditions on the Company's system that can cause electric service degradation, equipment damage, or harm to persons, such as:
- (i) Unintended islanding.
 - (ii) Inadvertent and unwanted re-energization of a Company dead line or bus.
 - (iii) Interconnection while out of synchronization.
 - (iv) Overcurrent.
 - (v) Voltage imbalance.
 - (vi) Ground faults.
 - (vii) Generated alternating current frequency outside of permitted safe limits.
 - (viii) Voltage outside permitted limits.
 - (ix) Poor power factor or reactive power outside permitted limits.
 - (x) Abnormal waveforms.

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- c. Specification of protection, synchronizing and control requirements. The Facility Parties shall provide the design drawings, operating manuals, manufacturer's brochures/instruction manual and technical specifications, manufacturer's test reports, bill of material, protection and synchronizing relays and settings, and protection, synchronizing, and control schemes for the Facility to the Company for its review, and the Company shall have the right to specify the protection and synchronizing relays and settings, and protection, synchronizing and control schemes that affect the reliability and safety of operation and power quality of the Company's system with which the Facility is interconnected ("Facility Protection Devices/Schemes"). After the implementation of the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, the Company may require changes in the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, when required by the Company's system operations, at the Company's expense. After the implementation of the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, the Company may require changes in the protection and synchronizing relays and settings, and protection, synchronizing and control schemes, when required by the Facility's operations, at the Facility Parties' expense.
- d. Facility protection. The Facility Parties are solely responsible for providing adequate protection for the Facility.
- e. Facility Parties Interconnection Facilities.
- (i) The Facility Parties shall furnish, install, operate and maintain interconnection facilities (such as circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes) designated by or acceptable to the Company as suitable for parallel operation of the Facility with the Company's system ("Facility Parties Interconnection Facilities"). Such facilities shall be accessible at all times to authorized Company personnel.

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(ii) The Facility Parties shall comply with the Company's Interconnection Standards. If a conflict exists between the Interconnection Standards and this Agreement, this Agreement shall control.

(iii)A 1) single-line diagram, 2) relay list, trip scheme and settings of the Facility, 3) Facility Equipment List, and 4) three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), which identify the circuit breakers, relays, switches, synchronizing equipment, monitoring equipment, and control and protective devices and schemes, shall, after having obtained prior consent from the Company, be attached to this Exhibit B and made a part hereof at the time the Agreement is signed. The single-line diagram shall include pertinent information regarding operation, protection, synchronizing, control, monitoring and alarm requirements. The single-line diagram and three-line diagram shall expressly identify the point of interconnection of the Facility to the Company's system. The relay list, trip scheme and settings shall include all protection, synchronizing and auxiliary relays that are required to operate the Facility in a safe and reliable manner. The three-line diagram shall show potential transformer and current transformer ratios, and details of the Facility's configuration, including relays, meters, and test switches.

f. Approval of Design Drawings. If the Facility's capacity is greater than or equal to 30 kW, the single-line diagram, relay list, trip scheme and settings of the Facility, and three-line diagram shall be approved by a Professional Electrical Engineer registered in the State of Hawaii prior to being submitted to the Company. Such approval shall be indicated by the engineer's professional seal on all drawings and documents.

2. Verification Testing.

a. Upon initial parallel operation of the Facility, or any time interface hardware or software is changed, a verification test of Facility Parties Interconnection Facilities shall be performed by Facility Parties. A qualified individual, hired or employed by the Facility Parties, shall perform the

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verification testing in accordance with the manufacturer's published test procedure. Qualified individuals include professional engineers, factory trained and certified technicians, and licensed electricians with experience in testing protective equipment. The Company reserves the right to witness verification testing or require written certification that the testing was performed.

- b. Verification testing shall be performed every four years. All verification tests prescribed by the manufacturer shall be performed. If wires must be removed to perform certain tests, each wire and each terminal shall be clearly and permanently marked. The Facility Parties shall maintain verification test reports for inspection by the Company.
- c. Single-phase inverters rated 10 kVA and below (if any) shall be verified once per year as follows: once per year the Facility Parties shall operate the load break disconnect switch and verify the Facility automatically shuts down and does not reconnect with the Company's system until the Company's system continuous normal voltage and frequency have been maintained for a minimum of 5 minutes. The Facility Parties shall maintain a log of these operations for inspection by the Company.
- d. Any system that depends upon a battery for trip power shall be checked once per month for proper voltage. Once every four (4) years the battery shall either be replaced or have a discharge test performed. The Facility Parties shall maintain a log of these operations for inspection by the Company.
- e. Tests and battery replacements as specified in this section 2 of Exhibit B shall be at the Facility Parties' expense.

3. Inspection of the Facility.

- a. The Company may, in its discretion and upon reasonable notice not to be less than 24 hours (unless otherwise agreed to by the Company and the Facility Parties), observe the construction of the Facility (including but not limited to relay settings and trip schemes) and the equipment to be installed therein.

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- b. Within fourteen days after receiving a written request from the Facility Parties to begin producing electric energy in parallel with the Company's system, the Company may inspect the Facility (including but not limited to relay settings and trip schemes) and observe the performance of the verification testing. The Company may accept or reject the request to begin producing electric energy based upon the inspection or verification test results.
- c. If the Company does not perform an inspection of the Facility (including but not limited to relay settings and trip schemes) and observe the performance of verification testing within the fourteen-day period, the Facility Parties may begin to produce energy after certifying to the Company that the Facility has been tested in accordance with the verification testing requirements and has successfully completed such tests. After receiving the certification, the Company may conduct an inspection of the Facility (including but not limited to relay settings and trip schemes) and make reasonable inquiries of the Facility Parties, but only for purposes of determining whether the verification tests were properly performed. The Facility Parties shall not be required to perform the verification tests a second time, unless irregularities appear in the verification test report or there are other objective indications that the tests were not properly performed in the first instance.
- d. The Company may, in its discretion and upon reasonable notice not to be less than 24 hours (unless an apparent safety or emergency situation exists which requires immediate inspection to resolve a known or suspected problem), inspect the Facility (including but not limited to relay settings and trip schemes) and its operations (including but not limited to the operation of control, synchronizing, and protection schemes) after the Facility commences operations.

4. Operating Records and Procedures.

- a. The Company may require periodic reviews of the maintenance records, and available operating procedures and policies of the Facility.

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- b. The Facility Parties must separate the Facility from the Company's system whenever requested to do so by the Company's System Operator pursuant to Sections 8, 9, and 11 of the Agreement. It is understood and agreed that at times it may not be possible for the Company to accept electric energy due to temporary operating conditions on the Company's system, and these periods shall be specified by the Company's System Operator. Notice shall be given in advance when these are scheduled operating conditions.
 - c. Logs shall be kept by the Facility Parties for information on unit availability including reasons for planned and forced outages; circuit breaker trip operations, relay operations, including target initiation and other unusual events. The Company shall have the right to review these logs, especially in analyzing system disturbance.
5. Changes to the Facility, Operating Records, and Operating Procedures.
- a. The Facility Parties agree that no material changes or additions to the Facility as reflected in the single-line diagram, relay list, trip scheme and settings of the Facility, Facility Equipment List, and three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), shall be made without having obtained prior written consent from the Company.
 - b. As a result of the observations and inspections of the Facility (including but not limited to relay list, trip scheme and settings) and the performance of the verification tests, if any changes in or additions to the Facility, operating records, and operating procedures and policies are required by the Company, the Company shall specify such changes or additions to the Facility Parties in writing, and the Facility Parties shall, as soon as practicable, but in no event later than thirty (30) days after receipt of such changes or additions, respond in writing, either noting agreement and action to be taken or reasons for disagreement. If the Facility Parties disagrees with the Company, it shall note alternatives it will take to accomplish the same intent, or provide the Company with a reasonable explanation as to why no action is required by good engineering practice.

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(Additional terms and provisions to be added as necessary. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

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Facility Equipment List

The Facility shall include the following equipment:

(Specific items to be added as necessary. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

(This Facility Equipment List, together with the single-line diagram, relay list and trip scheme, and three-line diagram (if the Facility's capacity is greater than or equal to 30 kW), should be attached behind Exhibit B. Note: This parenthetical phrase should be deleted when the agreement is finalized.)

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EXHIBIT C

INTERCONNECTION FACILITIES OWNED BY THE COMPANY

1. Description of Company Interconnection Facilities

The Company will purchase, construct, own, operate and maintain all interconnection facilities required to interconnect the Company's system with the Facility at ___ volts, up to the point of interconnection.

The Company Interconnection Facilities, for which the Facility Parties agree to pay, include:

[Need to specify the interconnection facilities. If no interconnection facilities, state "None".]

2. Facility Parties Payment to Company for Company Interconnection Facilities, Review of Facility, and Review of Verification Testing

The Facility Parties shall pay to the Company the total estimated interconnection cost to be incurred by the Company (Total Estimated Interconnection Cost), which is comprised of (i) the estimated cost of the Company Interconnection Facilities, (ii) the estimated engineering costs associated with a) developing the Company Interconnection Facilities and b) reviewing and specifying those portions of the Facility which allow interconnected operations as such are described in Exhibit B, and iii) reviewing the verification testing. The following summarizes the Total Estimated Interconnection Cost:

<u>Description</u>	<u>Estimated Cost (\$)</u>
[Need to specify the estimated interconnection cost. If no cost, state "None". If the Company determines that there are benefits to the utility system due to the Company interconnection facilities, a credit reflecting these benefits shall be provided to the Facility Parties, subject to Commission approval. See Appendix III, Section 2.d concerning this subject. The amount of the credit reflecting these benefits, if any, would be reflected in this section of the Standard Interconnection Agreement.]	

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Total Estimated Interconnection Cost **\$**

The Total Estimated Interconnection Cost, which, except as otherwise provided herein, is non-refundable, shall be paid by the Facility Parties fourteen (14) days after receipt of an invoice from the Company, which shall be provided not less than thirty (30) days prior to start of procurement of the Company Interconnection Facilities.

Within thirty (30) days of receipt of an invoice, which shall be provided within fourteen (14) days of the final accounting, which shall take place within sixty (60) days of completion of construction of the Company Interconnection Facilities, the Facility Parties shall remit to the Company the difference between the Total Estimated Interconnection Cost paid to date and the lesser of one hundred twenty percent (120%) of the Total Estimated Interconnection Cost or the total actual interconnection cost (Total Actual Interconnection Cost). The latter is comprised of (i) the total costs of the Company Interconnection Facilities, and (ii) the total engineering costs associated with a) developing the Company Interconnection Facilities and b) reviewing and specifying those portions of the Facility which allow interconnected operations as such are described in Exhibit B, and iii) reviewing the verification testing. If in fact the Total Actual Interconnection Cost is less than the payments received by the Company as the Total Estimated Interconnection Cost, the Company shall repay the difference to the Facility Parties within thirty (30) days of the final accounting.

If the Agreement is terminated prior to the Facility Parties' payment for the Total Actual Interconnection Cost (or the portion of this cost which has been incurred) or prior to the Company's repayment of the overcollected amount of the Total Estimated Interconnection Cost (or the portion of this cost which has been paid), such payments shall be made by the Facility Parties or Company, as appropriate. If payment is due to the Company, the Facility Parties shall pay within thirty (30) days of receipt of an invoice, which shall be provided within fourteen (14) days of the final accounting, which shall take place within sixty (60) days of the date the Agreement is terminated. If payment is due to the Facility Parties, the Company shall pay within thirty (30) days of the final accounting.

All Company Interconnection Facilities shall be the property of the Company.

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3. Operation, Maintenance and Testing Costs

The Company will bill the Facility Parties monthly and the Facility Parties will, within 30 days after the billing date, reimburse the Company for any costs incurred in operating, maintaining or testing the Company Interconnection Facilities, to the extent such costs are not included in or are not appropriate for inclusion in the Company's base rates. The Company's costs will be determined on the basis of outside service costs, direct labor costs, material costs, transportation costs, applicable overheads at time incurred and applicable taxes. Applicable overheads will include such costs as vacation, payroll taxes, non-productive wages, supervision, tools expense, employee benefits, engineering administration, corporate administration, and materials handling. Applicable taxes will include the Public Service Company Tax, and Public Utility Fee.

4. Facility Parties Use of Company Interconnection Facilities Upon Termination

Notwithstanding that all Company Interconnection Facilities are the property of the Company, upon termination of the Agreement, the Company shall identify any equipment paid for by the Facility Parties that can feasibly be returned to the Facility Parties. If Facility Parties desire such equipment, Facility Parties shall pay for the removal of the equipment and the restoration of the Company's system to the Company's satisfaction.

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EXHIBIT D

FACILITY PARTIES INSURANCE COVERAGE

In accordance with section 19 of the Agreement, Facility Parties shall maintain the following insurance and under the following conditions:

In the alternative, in accordance with section 19 of the Agreement, Facility Parties shall self insure against risks arising under this Agreement in the following manner and under the following conditions:

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