97.

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

----In the Matter of----	)	
	)	
PUBLIC UTILITIES COMMISSION	)	DOCKET NO. 2006-0497
	)	
Instituting a Proceeding to Investigate the Proposed Tariffs Filed by Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited, Governing Distributed Generation and Other Related Matters.	)	

DECISION AND ORDER NO. 24159

Filed April 18, 2008

At 1 o'clock P .M.

Karen Higashi

Chief Clerk of the Commission

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

----In the Matter of---- PUBLIC UTILITIES COMMISSION Instituting a Proceeding to Investigate the Proposed Tariffs Filed by Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited, Governing Distributed Generation and Other Related Matters.	Docket No. 2006-0497 Decision and Order No. 24159

DECISION AND ORDER

By this Decision and Order, the commission approves the interconnection tariff proposed by the HECO Companies and other parties (except HREA), as modified by the HECO Companies in response to the commission's information requests, to govern the interconnection of distributed generation facilities operating in parallel with the electric utility's system.[1]

[1]The Parties in this proceeding are HAWAIIAN ELECTRIC COMPANY, INC. ("HECO"), HAWAII ELECTRIC LIGHT COMPANY, INC. ("HELCO"), and MAUI ELECTRIC COMPANY, LIMITED ("MECO") (collectively, the "HECO Companies"); HAWAII RENEWABLE ENERGY ALLIANCE ("HREA"); CHAPEAU, INC., dba BLUEPOINT ENERGY ("BluePoint Energy"), STARWOOD HOTELS AND RESORTS WORLDWIDE, INC. ("Starwood Resorts"), and the HAWAII HEALTH SYSTEMS CORPORATION ("HHSC") (collectively, the "BluePoint Energy Intervenors"); JW MARRIOTT IHILANI RESORT & SPA, WAIKOLOA MARRIOTT BEACH RESORT & SPA, MAUI OCEAN CLUB, and WAILEA MARRIOTT (collectively, the "Marriott Intervenors"); KAHALA SENIOR LIVING COMMUNITY, INC. ("Kahala SLC"); the UNITED STATES COMBINED HEAT AND POWER ASSOCIATION ("USCHPA"); and the DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, DIVISION OF CONSUMER ADVOCACY ("Consumer Advocate"), an ex officio party to this proceeding, pursuant to Hawaii Revised Statutes ("HRS") § 269-51 and Hawaii Administrative Rules ("HAR") § 6-61-62(a).

I.

Background

HECO, HELCO, and MECO are the franchised providers of electric utility service on the islands of Oahu (HECO), Hawaii (HELCO), Lanai, Maui, and Molokai (MECO). The power systems on each of these islands are stand-alone systems that are not interconnected with power systems on the other islands.

A.

Docket No. 02-0051

The HECO Companies' existing interconnection tariff, Rule 14H, Interconnection of Distributed Generating Facilities Operating in Parallel with the Company's Electric System ("Rule 14H"), first approved by the commission in November 2002, results from the commission's extensive review and decision making in In re Hawaiian Elec. Co., Inc., Hawaii Elec. Light Co., Inc., and Maui Elec. Co., Ltd., Docket No. 02-0051 ("Docket No. 02-0051").[2]

[2]See Docket No. 02-0051, Decision and Order No. 19773, filed on November 15, 2002; Decision and Order No. 20056, filed on March 6, 2003; and Order No. 20220, filed on May 30, 2003. See also In re Hawaiian Elec. Co., Inc., Hawaii Elec. Light Co., Inc., and Maui Elec. Co., Ltd., Docket No. 05-0037 (consolidated), Decision and Order No. 21877, filed on June 17, 2005 (inclusion of the cross-reference to Rule 18, Net Energy Metering, in Rule 14H).

B.

Docket No. 03-0371

By Decision and Order No. 22248, filed on January 27, 2006, in In re Public Util. Comm'n, Docket No. 03 0371 ("Docket No. 03-0371"), the commission's distributed generation investigative proceeding, the commission "set forth certain policies and principles for the deployment of distributed generation in Hawaii and certain guidelines and requirements for distributed generation, some of which will be further defined by tariff as approved by the commission."[3] On April 6, 2006, the commission: (1) granted in part and denied in part the motion for clarification filed by the HECO Companies; and (2) denied the HECO Companies' motion for partial reconsideration.[4]

Decision and Order No. 22248 sets forth certain requirements for the electric utilities, including the requirement that the utilities file proposed interconnection and standby service tariffs for the commission's review and approval. With respect to Rule 14H, the commission held that "[t]he HECO [Companies] shall be allowed to continue to utilize

[3]Docket No. 03-0371, Decision and Order No. 22248, filed on January 27, 2006, at 1. The parties in Docket No. 03-0371 were the HECO Companies, Kauai Island Utility Cooperative, the Consumer Advocate, Life of the Land, HREA, Hess Microgen, LLC, and the County of Maui. The County of Kauai was the sole participant.

[4]Docket No. 03-0371, Order No. 22375, filed on April 6, 2006.

interconnection tariff Rule 14.H until new amendments are approved by the commission."[5]

On July 27, 2006, the HECO Companies filed their proposed revisions to Rule 14H.[6] On August 8, 2006, the commission solicited comments from the parties and participant on whether the commission should adopt, modify, or decline to adopt in whole or part, the PURPA interconnection standards, including the extent to which the electric utilities have already met the PURPA interconnection standards.[7] On August 28, 2006, the HECO Companies filed their proposed standby service tariffs.[8]

On September 8, 2006, the HECO Companies and the Consumer Advocate filed their comments on the PURPA interconnection standards issue. The HECO Companies recommended that the commission decline to adopt the PURPA interconnection standards. The Consumer Advocate stated that it was unable to offer specific recommendations as to what

---

[5]Docket No. 03-0371, Decision and Order No. 22248, Ordering Paragraph No. 8, at 47.

[6]See Docket No. 03-0371, HECO Companies' Transmittal Letter, dated July 27, 2006 ("Transmittal Letter").

[7]The term "PURPA interconnection standards" refers to the federal interconnection standards set forth in Section 111(d)(15) of the Public Utility Regulatory Policies Act of 1978 ("PURPA"), as amended by the Energy Policy Act of 2005 ("EPACT"), which adopt by reference the Institute of Electrical and Electronics Engineers, Inc.'s Standard 1547, Standard of Interconnecting Distributed Resources with Electric Power Systems, "as they may be amended from time to time." 16 U.S.C. § 2621(d)(15).

[8]HELCO presently has a Standby Rider A. See Docket No. 03-0371, Decision and Order No. 22248, at 41 - 42 n.64. For the HECO Companies: (1) HECO proposes a standby service tariff; (2) HELCO proposes to revise its existing standby service tariff (from Rider A to Schedule SS); and (3) MECO proposed separate standby service tariffs for its Lanai, Maui, and Molokai divisions.

modifications should be made to adopt IEEE Standard 1547 to meet Hawaii's needs.

In addition, HREA, the Consumer Advocate, and the County of Maui filed their comments on the HECO Companies' proposed revisions to Rule 14H and the proposed standby service tariffs.[9] Moreover, the commission received unsolicited comments on the HECO Companies' proposed standby service tariffs from third-persons who were not parties or participants to the proceeding. The non-parties, in general, requested hearings on the proposed standby service charges, and the opening of a new standby service docket so that all interested stakeholders would have the opportunity to participate.

C.

Docket No. 2006-0497

As a result of the concerns raised by the interested, non-party stakeholders, the commission, on December 28, 2006, opened this investigative proceeding to review and address: (1) the proposed interconnection and standby service tariffs filed by the HECO Companies in Docket No. 03-0371; and

[9]On September 8, 2006, HREA commented on the HECO Companies' proposed revisions to Rule 14H. On October 3, 2006, the Consumer Advocate commented on the HECO Companies' proposed standby service tariffs and the proposed revisions to Rule 14H. On October 4, 2006, the County of Maui commented on the HECO Companies' proposed standby service tariffs. On November 3, 2006, the Consumer Advocate provided further comments on the HECO Companies' proposed tariffs.

(2) the PURPA interconnection standards issue.[10] The commission named the HECO Companies and the Consumer Advocate as parties to Docket No. 2006-0497, and invited interested persons to timely move to intervene or participate.

Thereafter, following public notice and the completion of public hearings,[11] the commission, on April 19, 2007, granted intervention to HREA, the BluePoint Energy Intervenors, the Marriott Intervenors, Kahala SLC, and USCHPA.[12]

On July 27, 2007, the commission, by Decision and Order No. 23562, declined to adopt the PURPA interconnection standards.[13]

---

[10]Order No. 23171, filed on December 28, 2006. Docket No. 2006-0497, in effect, supersedes Docket No. 03-0371. See Docket No. 03-0371, Order No. 23746, filed on October 19, 2007.

The issues identified by the commission in Order No. 23171 include:

> 2. Whether the HECO [Companies'] proposed revisions to their existing interconnection tariffs are just and reasonable and consistent in principle with the guidelines and requirements set forth in Decision and Order No. 22248, filed in Docket No. 03-0371, as clarified by Order No. 22375, filed in the same docket.

Order No. 23171, at 9.

[11]The notice of public hearings was published in The Garden Island, Hawaii Tribune-Herald, Honolulu Star-Bulletin, The Maui News, and West Hawaii Today, and public hearings were held during February and March 2007, on Oahu, Hawaii (Hilo and Kona), Maui, Molokai, and Lanai.

[12]Order No. 23373, filed on April 19, 2007.

[13]See Decision and Order No. 23562, filed on July 27, 2007.

On September 13, 2007, the HECO Companies, BluePoint Energy Intervenors, Marriott Intervenors, Kahala SLC, USCHPA, and the Consumer Advocate (collectively, the "Stipulating Parties"), jointly filed their Stipulation Regarding Hearing and Commission Approval Concerning Rule 14H Interconnection Tariffs.[14] Exhibit A of the Stipulation consists of the Stipulated Parties' proposed modifications to the HECO Companies' Rule 14H, referred to herein as the Stipulating Parties' Proposed Interconnection Tariff.

By their Stipulation, the Stipulating Parties timely submit for the commission's review and approval their agreed-upon Proposed Interconnection Tariff to govern the HECO Companies.[15] In reaching mutual agreement on the Stipulation:

> 1. The [Stipulating Parties] agree the HECO Companies' proposed modifications to their Rule 14H interconnection tariffs, attached as Exhibit A, are reasonable and should be approved by the Commission . . . .
>
> 2. The [Stipulating Parties] do not request additional procedural steps or an evidentiary hearing with respect to the HECO Companies' proposed modifications to their Rule 14H interconnection tariffs.
>
> 3. The HECO Companies agree to provide a copy to the parties in the subject docket when (1) a request is filed with the Commission by the HECO Companies to modify their Rule 14H

---

[14]Stipulation Regarding Hearing and Commission Approval Concerning Rule 14H Interconnection Tariffs; Exhibits A - D; and Certificate of Service, filed on September 13, 2007, as supplemented with the signature pages of the Marriott Intervenors on September 17, 2007, and USCHPA on September 24, 2007 (collectively, "Stipulation").

[15]See Parties' joint letter, dated June 22, 2007; Order No. 23521, filed on June 28, 2007; and Order No. 23608, filed on August 16, 2007.

> interconnection tariff as a result of new or revised IEEE standards, and/or (2) the HECO Companies notify the Commission in their annual Rule 14H Report that an IEEE standard is not being adopted. Such notifications shall be in writing, shall be made within fifteen (15) business days of the HECO Companies' filings to the Commission, and would be made for a period of five (5) years from the date of Commission approval of this stipulation, or until such time as the HECO Companies' routinely and timely post, on a publicly accessible website, any and all requests to modify their Rule 14H interconnection tariff as a result of any new or revised IEEE standard(s) and any and all determinations not to adopt any new or revised IEEE standard(s). The publicly accessible website shall also include the HECO Companies' current rules and tariffs.

Stipulation, at 3-4.

HREA is the sole party that did not sign or agree to the Stipulation. Instead, on September 21, 2007, HREA filed its Statement of Position on the Stipulation Regarding the Proposed Rule 14H Interconnection Tariff,[16] and on October 5, 2007, the HECO Companies filed their Reply to the Statement of Position of HREA,[17] in compliance with Order No. 23682, filed on September 26, 2007.

---

[16]Statement of Position of HREA on Stipulation Regarding Proposed Rule 14H Interconnection Tariff; and Certificate of Service, filed on September 21, 2007 (collectively, "Statement of Position").

[17]HECO Companies' Reply to Statement of Position of HREA on Stipulation Regarding Proposed Rule 14H Interconnection Tariff; and Certificate of Service, filed on October 5, 2007 (collectively, "Reply").

On October 29, 2007, the commission: (1) issued information requests; (2) instructed the HECO Companies to file their responses to the information requests; and (3) provided the remaining parties with the opportunity to respond to the same information requests.[18] On November 30, 2007, the HECO Companies and HREA responded to the commission's information requests.

D.

HECO Companies' Rule 14H

The HECO Companies' existing Rule 14H, as approved by the commission in Docket No. 02-0051, consists of the text of Rule 14H, and incorporates by reference the utilities' Distributed Generating Facility Interconnection Standards/Technical Requirements (Appendix I), Standard Interconnection Agreement (Appendix II), and Interconnection Overview Process (Appendix III).

---

[18]In Order No. 23171, the commission explained:

> The United States Environmental Protection Agency ("EPA"), as part of the EPA-State Energy Efficiency and Renewable Energy Projects, of which Hawaii is one of the states selected for this program, will assist the commission in its review of the proposed tariffs.

Order No. 23171, at 7-8 n.13.

The commission's information requests, issued to the Parties on October 29, 2007, reflect the EPA's observations of the Proposed Interconnection Tariff.

1.

Appendix I

Appendix I set forth comprehensive interconnection standards and technical requirements that are intended to facilitate the interconnection and parallel operation of a customer's distributed generating facility with the utility's electrical system. The underlying purposes of the technical requirements are to: (1) maintain safety, reliability, and power quality and restoration; (2) protect the utilities and customer's equipment and facilities; and (3) advance the operating efficiencies of the utility's electrical system.

In general, the interconnection standards and technical requirements consist of: (1) a definition section; (2) general interconnection guidelines; (3) design requirements; (4) operating requirements; (5) technology specific requirements; (6) protection, synchronizing, and control requirements; and (7) Exhibit A, consisting of schematic electrical diagrams illustrating "typical equipment and protective device requirements for large synchronous, induction, and inverter generators."

2.

Appendix II

Appendix II sets forth the Standard Interconnection Agreement ("Interconnection Agreement") between the utility and

customer. In general, the Interconnection Agreement consists of twenty-three sections[19] and three exhibits.[20]

Customers with on-site distributed generating facilities that are intended to operate in parallel with the utility's electrical system must execute and complete the Interconnection Agreement. Distributed generating facilities may be interconnected and operated in parallel with the utility's electrical system, in accordance with the standard terms and conditions of the Interconnection Agreement. At the customer's request, the Interconnection Agreement may be modified by the utility to make both the customer and a third-party that is the owner, operator, or both, of the distributed generating facility, parties to the Interconnection Agreement.

The Interconnection Agreement does not apply to a customer that enters into: (1) a power purchase agreement for the sale to the utility of energy generated by the distributed generating facility; or (2) a standard contract providing for net energy metering, pursuant to the utility's Tariff Rule 18.

---

[19]Section 1, Scope of Agreement; Section 2, Parallel Operation; Section 3, Facility; Section 4, Interconnection Facilities Owned by the Company; Section 5, Customer Payments; Section 6, Commencement of Producing Energy in Parallel; Section 7, Incidental Deliveries of Energy; Section 8, Continuity of Service; Section 9, Personnel and System Safety; Section 10, Transmission Service Not Provided with Interconnection; Section 11, Prevention of Interference; Section 12, Location of Metering; Section 13, Design Reviews and Inspections; Section 14, Permits, Approvals, and Licenses; Section 15, Term; Section 16, Termination; Section 17, Disconnection and Survival of Obligations; Section 18, Indemnification; Section 19, Insurance; Section 20, Force Majeure; Section 21, Warranties; Section 22, Good Engineering Practice; and Section 23, Miscellaneous.

[20]Exhibit A, Description of Customer's Generating Facility; Exhibit B, Facility Owned by the Customer or Third Party Owner; and Exhibit C, Interconnection Facilities Owned by the Company.

The utility agrees to furnish, install, operate, and maintain interconnection facilities on its side at the point of interconnection with the customer's facility, as required for the utility's parallel operation with the customer's facility. In consideration thereto, the customer agrees to pay: (1) a non-refundable contribution for the utility's investment in its interconnection facilities; and (2) the associated interconnection costs.

The utility and customer will install, operate, and maintain their respective equipment and facilities in accordance with: (1) good engineering practice in the electric industry; and (2) the applicable laws, rules, orders, and utility's tariff.

The Interconnection Agreement includes: (1) cross-indemnification provisions between the utility and its interconnecting customer; and (2) an insurance provision, requiring the customer to maintain a commercial general liability policy that "will protect the Customer and the Company with respect to the Facility, the Facility's operations, and the Facility's interconnection with the Company's system[.]"[21] The policy must cover bodily injury and property damage, with a combined single limit for any occurrence, as designated in the Interconnection Agreement, based on the nameplate rating of the customer's generator.

[21]Tariff Rule 14H, Appendix I, Section 19. Concomitantly, the insurance provision recognizes the ability of a governmental entity customer to self-insure.

The Interconnection Agreement "shall become effective when executed by the Customer and the Company and shall continue in effect until terminated."[22]

3.

Appendix III

Appendix III outlines the interconnection steps and procedures a customer should follow in seeking to interconnect with the utility. In general, these steps include the (1) Interconnection Process (Step 1); (2) Technical Review Process (Step 2); (3) Additional Technical Study Process, if required (Step 3); and (4) a Resolution of Disputes Process, if applicable, including alternative dispute resolution procedures and the option of filing an informal or formal complaint with the commission (Step 4).

E.

Stipulating Parties' Proposed Modifications to Rule 14H

The Stipulating Parties propose certain revisions to the appendices of Rule 14H; they do not propose any changes to the text of Rule 14H.

1.

Appendix I

The Stipulating Parties' proposed amendments to Appendix I include:

[22]Tariff Rule 14H, Appendix I, Section 15.

1. Clearly stating in the Preamble that in the event of a conflict between the technical specifications set forth in Appendix I any of the technical specifications set forth elsewhere in Rule 14H, "the specifications of this Appendix I shall prevail."[23]

2. Adding a new section to the Preamble that sets forth the utility's intent to conform to the IEEE interconnection standards, including IEEE Standard 1547, to the extent feasible:

> **Consistency with IEEE Standards**
>
> These technical interconnection standards are based on the requirements of IEEE 1547-2003 *Standard for Interconnecting Distributed Resources with Electric Power Systems*. HECO intends to maintain consistency between its requirements for interconnection of distributed generating facilities and IEEE interconnection standards to the extent feasible, considering the specific design and operating requirements of HECO's electric power system. Except as otherwise provided herein, HECO will evaluate all future revisions to IEEE standards directly related to interconnection of distributed generating facilities, if any, and update its Distributed Generating Facility Interconnection Standards Technical Requirements accordingly. If, as a result of reviewing such revised or new IEEE standards HECO determines that an update to its Rule 14H is required, HECO shall file a request with the Commission to modify its interconnection tariff. If, as a result of reviewing such revised or new IEEE standards HECO determines that an update to its Rule 14H is not required, HECO will provide a written explanation of its determination in its Rule 14H annual report to the Commission. HECO will also provide a written explanation of its determinations

[23]Stipulation, Appendix I, Preamble.

> concerning IEEE distributed generation interconnection standards to interested persons upon request, or will make such information available on a publicly accessible website.

Stipulation, Appendix I, at 34B-2 (footnotes and citations therein omitted).

3. Changing the standard set forth in Section 3(e), Dedicated Transformer, which currently provides that the distributed generating facility must install a dedicated transformer when the utility determines that an adverse impact may occur, to instead state that "[b]ased upon the results of the initial technical screening or additional technical study, the Company shall determine whether an adverse impact may occur and whether a dedicated transformer is necessary."[24]

4. For Section 3(f), Supervisory Control, changing the utility's basis for determining the need for computerized supervisory control of a distributed generating facility, from the facility's export capability (250 kW), to the capacity size of the generating unit (aggregate capacity greater than 1 MW).

5. For Section 3(h), Equipment Testing, incorporating fifteen-day time limits to govern the testing of customer-owned equipment, as follows:

> . . . . To ensure that verification tests of customer-owned equipment are performed correctly, the utility may request to witness the tests and receive written certification of the results from the qualified individual. The customer must inform the Company in writing of proposed changes in the customer's interconnection hardware or software that are related to the performance, operation, or timing of the protective functions not later than <u>fifteen (15) business days</u> prior to implementation of such changes. Upon receiving

[24]Stipulation, Appendix I, Section 3(e).

> notice of such proposed changes from the customer, the Company must notify the customer in writing of any concerns regarding the proposed changes within fifteen (15) business days, in which case the changes shall not be implemented until the customer and Company resolve the concerns to their mutual satisfaction and document the resolution in writing.

Stipulation, Appendix III, Section 3(h) (emphasis added).

6. Amending Section 4(g), Voltage Disturbances, to match the IEEE Standard 1547 voltage requirements for generating facility system responses to disconnect for utility system voltage disturbances.[25]

7. Expanding Section 4(i), Inadvertent Energization, to include Operation During Utility System Outage procedures, such that Section 4(i) is amended to now read as follows:

> i. Inadvertent Energization, Operating During Utility System Outage: The generating facility shall not energize a de-energized utility circuit for any reason. The generating facility may be operated isolated from the utility system during a utility outage or system emergency only with an open tie breaker or disconnect device which isolates the generating facility from the utility system. This shall generally be done through manual opening and lockout of the Customer's service breaker or isolation device by utility personnel prior to starting the generating facility.
>
> Where customers desire the ability to manually or automatically isolate their generating facility from the utility system by themselves, the utility will consider alternative designs proposed by the Customer that will prevent inadvertent energization of a de-energized utility circuit. Such alternative design proposals shall be reviewed and approved in writing by the Company prior to implementation. The utility shall not unreasonably withhold

[25] See Docket No. 03-0371, HECO Companies' Transmittal Letter, at 15.

> such approval. Upon implementation of an alternative design approved by the Company, the Customer may isolate itself from the utility system during a utility outage and operate its generating facility. Customers' alternative designs may, subject to review and approval by the Company, enable customers to manually or automatically reconnect back to the utility system upon restoration of utility system power, provided that the utility has not locked out the customers' service as described below and subject to the delay requirements specified in Section 4.j.
>
> In certain situations, including any time that utility personnel will be performing work on the distributed system serving the point of interconnection between the utility and Customer, the utility may determine the need to actively verify the open tie point, and to install a Company lock to ensure the safety of utility personnel. The Customer shall provide access to the service breaker or isolation device required under Section 3.c. for utility personnel to visually confirm the open tie point and install a Company lock if necessary. Following restoration of grid power or rectification of the emergency condition, the utility personnel shall, as soon as practicable, remove the Company lock to allow reconnection of the generating facility with the utility system.
>
> . . . .

Stipulation, Appendix I, Section 4(i).

8. Expanding Section 4(k), Loss of Protection, which currently applies to the "[f]ailure of the generating facility interconnection protection equipment," to include the failure of utility-owned protection equipment, as follows:

> . . . . In the case of failure of Company-owned protection equipment, following the rectification of the loss of protection, the utility shall provide, within fifteen (15) business days or such other period as is mutually agreed upon in writing

> by the utility and the customer, written documentation of the occurrence, and the disconnection of the customer's generating facility.

Stipulation, Appendix I, Section 4(k).

9. Deleting the reference to IEEE Standard 929-2000, in Section 3(e) (Dedicated Transformer), and in Sections 6(a) (Protection Requirements) and 6(b) (Suitable Equipment).

10. Amending Exhibit A, consisting of schematic electrical diagrams, to more accurately reflect the typical trip signal requirements for large synchronous, induction, and inverter generators.[26]

2.

Appendix II

The Stipulating Parties' proposed amendments to Appendix II include clarifying that: (1) the non-refundable contribution amount and interconnection costs the customer is responsible for must be "reasonable;"[27] (2) the utility's form of customer notification to the customer for temporary disconnection may include in-person, telephone, electronic mail, or facsimile;[28] (3) the utility and customer may terminate the Interconnection Agreement at any time upon mutual written agreement;[29] (4) the term "person" includes "entity" under the

[26]Docket No. 03-0371, HECO Companies' Transmittal Letter, at 15.

[27]Stipulation, Appendix II, Section 5.

[28]Stipulation, Appendix II, Sections 8(a) and 9; see also Stipulation, Appendix I, Sections 4(a) and 4(b).

[29]Stipulation, Appendix II, Section 16.

Indemnification provision;[30] (5) the temporary disconnection of a customer's facility by the utility for maintenance, testing, or inspection purposes shall not be subject to standby service charges, and in the event of such temporary disconnection, "[t]he 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" Appendix I, Section 4.i;[31] and (6) the temporary (or permanent) disconnection of a customer's facility by the utility for safety or emergency reasons shall not be subject to standby service charges, provided that the disconnection was caused by the utility or its equipment.[32]

After the temporary disconnection of a customer's facility by the utility, the Stipulating Parties propose the adoption of the following additional procedures:

> 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.
>
> . . . .

---

[30]Stipulation, Appendix II, Section 18(c).

[31]Stipulation, Appendix II, Sections 8(b) and 8(e); see also Stipulation, Appendix I, Sections 4(a)(Disconnection of Generating Facility for Utility Reasons) and 4(r)(Disconnection of Customer Generating Facilities).

[32]Stipulation, Appendix II, Section 9; see also Stipulation, Appendix I, Section 4(r)(Disconnection of Customer Generating Facilities).

> . . . . 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 . . . .

Stipulation, Appendix II, Sections 8(c) and 9; see also Stipulation, Appendix I, Sections 4(a) and 4(b).

The Stipulating Parties also propose material changes to the Insurance provision (Section 19) by removing the specified amounts of insurance coverage required by the utility, and instead, requiring the customer to maintain an adequate amount of insurance coverage as specified in Exhibit D of Appendix II, or be self-insured. Under either scenario, the "[c]ustomer is responsible for determining its own level and form of insurance."[33]

Material changes proposed by the Stipulating Parties to the exhibits attached to Appendix II include:[34]

1. For Exhibit C, under the Customer Payment for Company Interconnection Facilities section (Section 2), specifying the customer's ability to apply for a credit with the utility, upon a showing of system benefits for the utility:

> If the Customer can show that there are benefits to the utility system due to the Company interconnection facilities, the Customer may apply to the utility for a credit reflecting these

[33]Stipulation, Appendix II, Section 19; see also Appendix II, Exhibit D.

[34]In addition, for Exhibit B, the Stipulating Parties propose to clarify the requirement that a verification test of the customer's interconnection facilities be performed by a qualified individual, "hired or employed by the Customer." Appendix II, Exhibit B, Section 2(a).

> benefits, 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.

Stipulation, Appendix II, Exhibit C, Section 2.

2. For Exhibit C, under the Operation, Maintenance and Testing Costs section (Section 3), clarifying that the customer will reimburse the utility for any costs incurred in operating, maintaining, or testing the utility's interconnection facilities, "to the extent such are not included in or are not appropriate for inclusion in the Company's base rates."[35]

3. For Exhibit C, adding a Section 4, Customer Use of Company Interconnection Facilities Upon Termination, to specify that the customer, upon the customer's option and payment of the removal and restoration costs, is entitled to receive the interconnection equipment paid for by the customer.[36]

4. Amending Exhibit D, Customer Insurance Coverage, to now read as follows:

> In accordance with section 19 of the [Interconnection] 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:

Stipulation, Appendix II, Exhibit D.

---

[35]Stipulation, Appendix II, Exhibit C, Section 3.

[36]Stipulation, Appendix II, Exhibit C, Section 4.

3.

Appendix III

As noted above, Appendix III outlines the interconnection steps and procedures a customer should follow in seeking to interconnect with the utility. For Step 1, the Interconnection Process, the Stipulating Parties' proposed amendments include:

1. Identifying a utility central point of contact for distributed generation interconnection applications submitted by potential customers.[37]

2. Changing the five-day benchmark for the utility to provide an interested customer with a distributed generation interconnection application (i.e., Appendices I, II, and III) to a five-day requirement.[38]

3. Requiring the utility to maintain the confidentiality of customer-designated confidential information, unless determined otherwise by the commission.[39]

4. Establishing a fifteen business day time limit for the utility to review and notify the customer as to the "general completeness, or alternatively, incompleteness," of the customer's distributed generation interconnection application.[40]

---

[37]Stipulation, Appendix III, Section 1(a); see also id., Sections 5(a) and 5(b).

[38]Stipulation, Appendix III, Section 1(c).

[39]Stipulation, Appendix III, Section 1(c).

[40]Stipulation, Appendix III, Section 1(c).

5. Restating the fifteen business day time limit for the utility to complete the initial technical screening, following the receipt of the customer's completed application, provided that the time limit may be modified by the utility for good cause and upon the customer's consent.[41]

6. Clearly stating that "[t]he initial technical screening will determine whether additional technical study is required to complete the technical review."[42]

7. Clarifying that the utility and customer shall mutually agree "in writing" to a schedule by which the interconnection facilities will be constructed and when the customer's distributed generation facility shall be connected to the utility's electric system.[43]

For Step 2, the Technical Review Process, the Stipulating Parties propose to:

1. Include three more factors in determining whether "additional technical study will be needed," to wit: starting voltage drop; generating facility capacity; and type of interface transformer.[44]

2. Require the utility to provide the customer with a cost estimate and schedule to complete the required additional technical study, in the event the utility determines that

---

[41]Stipulation, Appendix III, Section 1(c); see also id., Section 2(c); and Stipulation, Appendix I, Section 2(b).

[42]Stipulation, Appendix III, Section 1(c).

[43]Stipulation, Appendix III, Section 1(d).

[44]Stipulation, Appendix III, Section 2(b); see also id., Section 3(a).

additional technical study of the customer's interconnection proposal is necessary. Moreover, "the Customer and Company may agree to have the additional technical study performed by a qualified third-party consultant, or by a qualified employee, contractor, or agent of the Customer in accordance with the provisions of Section 3.b of this Appendix [III]."[45] "Final results of all technical screenings and studies will be provided in writing to the Customer."[46]

3. Consistent with the additions to Appendix II, Exhibit C, governing interconnection costs, include language that specifies the customer's ability to apply for a credit with the utility, upon a showing of system benefits for the utility.[47] Thus, Section 2(d) of Step 2, as proposed, provides:

> The initial technical screening or additional technical screening may identify the need for Company interconnection facilities required to facilitate interconnection of the generating facility. The Company interconnection facilities and estimated cost shall be listed in Appendix II (Standard Interconnection Agreement), Exhibit C (Interconnection Facilities Owned by the Company). The Customer will be responsible for the cost of any Company interconnection facilities associated with the interconnection of its generating facility. <u>If the Customer can show that there are benefits to the utility system due to the Company interconnection facilities, the Customer may apply to the utility for a credit reflecting these benefits, subject to Commission approval</u>. For example, if there is a planned distribution system addition that may be deferred or displaced due to

[45]Stipulation, Appendix III, Section 2(c).

[46]Stipulation, Appendix III, Section 2(c); <u>see also</u> Stipulation, Appendix I, Sections 3(e) and 3(f).

[47]Stipulation, Appendix III, Section 2(d).

> the addition of the Company interconnection facilities associated with interconnection of a generating facility, the dollar value of the deferral or displacement would be determined and proposed to be credited to the Customer (subject to Commission approval) as a line item in Appendix II (Standard Interconnection Agreement), Exhibit C (Interconnection Facilities Owned by the Company), Section 2 (Customer Payment to Company for Company Interconnection Facilities, Review of Facility, and Review of Verification Testing). The calculation of the benefits to the utility system would have to be examined on a case-by-case basis taking into account what distribution system addition(s) would have been deferred or displaced by the Company interconnection facilities that resulted from the interconnection of a distributed generation customer. The Company would then escalate a dollar value of the deferral or displacement, and propose to credit the Customer for that deferral or displacement value. The Company shall file a letter providing the Commission with sufficient information to document the proposed credit to be provided to the Customer for said deferral or displacement value. The proposed deferral or displacement value would not be credited to the Customer until the Commission approves such credit.

Stipulation, Appendix III, Section 2(d) (emphasis added).

For Step 3, the Additional Technical Study Process, the Stipulating Parties propose to add, as an alternative to having the utility or its consultant undertaking and completing the additional technical study, providing the customer with the opportunity to have its employees, consultant, or contractor undertake and complete the additional technical study, at the customer's sole cost, provided that the customer-designated person meets certain specified qualifications and is approved in writing by the utility.[48] "In addition, the scope of work of the third-party consultant's study shall be mutually agreeable to both the Company and the Customer. Elements of the study scope

[48]Stipulation, Appendix III, Section 3(b).

of work may include items such as: (1) Feeder Load Flow; (2) Dynamic Stability Analysis; (3) Transient Overvoltage; and (4) Short Circuit and Relay Coordination. All study recommendations by the Customer's consultant shall be reviewed and approved by the Company."[49]

For Step 4, Insurance Coverage, the Stipulating Parties propose to add this new section which specifies the revised insurance requirements set forth in Appendix II, Section 19 and Exhibit D. Step 4, as proposed, also sets forth the utility's general recommendations regarding the types and scope of insurance coverage the customer should obtain.[50]

For Step 5, Resolution of Disputes (formerly Step 4), the Stipulating Parties propose to expand the present option of filing a complaint with the commission to include "or any other provisions contained under the Rules of Practice and Procedure before the Public Utilities Commission, currently codified in Title 6, Chapter 61, Subchapter 5 of the Hawaii Administrative Rules, or any other applicable statutes, orders, rules, or regulations."[51]

4.

Stipulating Parties' Position

The Stipulating Parties note that the Proposed Interconnection Tariff results from four technical meetings held

[49]Stipulation, Appendix III, Section 3(b).

[50]Stipulation, Appendix III, Sections 4(a) and 4(b).

[51]Stipulation, Appendix III, Section 5(c).

by the Parties, and the exchanging of written information between them. The Stipulating Parties contend that the Proposed Interconnection Tariff is reasonable.

F.

HREA's Position

"HREA is in agreement on most matters relevant to the interconnection of distributed generation . . . systems on HECO Companies' grids as included in the Stipulation."[52] Nonetheless, HREA expresses its concern about the cost responsibilities the proposed tariff will place on a customer or third-party that is the owner or operator of a distributed generation facility. Specifically, HREA takes issue with the proposed requirements that make the customer responsible for the costs of the utility's interconnection facilities associated with the interconnection of the customer's distributed generation facility. Instead:

> HREA supports the following overall approach. The "Interconnection Customer" shall own, operate and be responsible for any Interconnection Facilities on the Interconnection Customer's side of the Interconnection Point.
>
> Similarly, the Companies shall own, operate and be responsible for any Interconnection Facilities on the Companies' side of the Interconnection Point. The Companies shall also be responsible for the actual costs of any distribution upgrades, regardless of their location.

HREA's Statement of Position, at 4-5.

[52]HREA's Statement of Position, at 3.

In support of its position, HREA asserts that: (1) distributed generation provides a number of benefits to the HECO Companies; (2) for each interconnecting customer, the commission "should recognize these benefits now[,]" in this Decision and Order, so that the customer is able to apply to the utility for a systems benefit credit; and (3) imposing costs for interconnection facilities on the utility's side of the interconnection point and distribution upgrades constitute a barrier to the deployment of distributed generation. Finally, HREA "requests that the Commission reconsider its decision from the DG Docket, in light of the overall need to encourage [the] further deployment of [distributed generation]."[53]

---

[53]HREA's Statement of Position, at 6. HREA specifically refers to Section II.H.1 of Decision and Order No. 22248, filed in Docket No. 03-0371, which states:

> 1. <u>Interconnection Costs</u>
>
> Interconnection agreements are necessary to ensure appropriate coordination between the utility and the customer-generator. The costs of interconnection vary with the size of the project.
>
> The commission hereby requires that each utility require the interconnecting customer to pay for all costs of interconnecting, including the costs of system upgrades or network upgrades; however, if the interconnecting customer or generator can show that there are benefits to the utility system for such upgrades, it may apply to the utility for a credit reflecting these benefits, subject to commission approval.

Docket No. 03-0371, Decision and Order No. 22248, Section II.H.1, at 41.

G.

HECO Companies' Reply

The HECO Companies counter that HREA's position is flawed due to the following reasons: (1) HREA misinterprets the types of benefits that should be considered when determining the interconnection costs charged to the customer; and (2) distributed generation costs and benefits are highly variable and site specific, thus, it is inappropriate to generalize and conclude that net benefits are provided to the utility system by all distributed generation projects. Accordingly, "HREA['s] proposal inappropriately allocates costs of interconnection to the utility and its other customers, in clear odds with the Commission's Decision and Order No. 22248[,]" resulting in the inappropriate subsidization of distributed generation projects by the utility's customers or shareholders.[54]

H.

Responses to Commission's Information Requests

1.

Responses to PUC-IR-101

The commission, in PUC-IR-101, asked whether, for Appendix III, Sheet No. 34D-4, Step 5, of the Proposed Interconnection Tariff, the term "executable" should replace

[54]HECO Companies' Reply, at 3-4.

"finalized," consistent with the Federal Energy Regulatory Commission's ("FERC") procedures. The HECO Companies, in response, concurred with this observation. Thus, as reflected in the proposed amended tariff sheets attached to their response, the HECO Companies state that the applicable sentence should be amended to read as follows: "The executable Standard Interconnection Agreement then is provided to the Customer for review and signature."[55] HREA, in its response, concurs with the commission's inquiry.

2.

Responses to PUC-IR-102

Appendix III, Paragraph No. 2d, Sheets No. 34D-8 and No. 34D-9, of the Proposed Interconnection Tariff, includes language that specifies the customer's ability to apply for a credit with the utility, upon a showing of system benefits to the utility. The commission, in PUC-IR-102, asked the Parties to comment on the EPA's pertinent observations of Paragraph No. 2d, including the lack of a queuing system.[56]

---

[55]The HECO Companies, likewise, propose a corresponding amendment to the flowchart for Step 5.

[56]The EPA, as part of its observations, cites to Section 1.6 of FERC's Small Generator Interconnection Procedures (For Generating Facilities No Larger Than 20 MW) ("SGIP"):

Queue Position

The Transmission Provider shall assign a Queue Position based upon the date- and time-stamp of the Interconnection Request. The Queue Position of each Interconnection Request will be used to determine the cost responsibility for the Upgrades necessary to accommodate the interconnection. The Transmission Provider shall maintain a single queue per

The HECO Companies, in response:

1. "[A]cknowledge the difficulty for Customers to determine if there may be benefits to the utility system due to Company interconnection facilities associated with the interconnection of [a] generation facility[.]"[57] Thus, the HECO Companies "propose to implement the following revision to the relevant portions of Rule 14H, Appendix III, Paragraph No. 2.d, and Appendix II, Exhibit C, Section 2[:]"

> 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.

HECO Companies' response to PUC-IR-102, at 3.

2. "[A]gree in principle that a queuing system for interconnection requests is reasonable, and propose to add the following language as a new paragraph 2.e.in Appendix III of Rule 14H:"

> The individual Companies shall maintain a queue whereby Customers applying for interconnection to the utility system under Rule 14H shall be assigned a queue position upon receipt of all necessary information regarding the proposed distributed generation facility for the Company to perform its initial technical screening.

HECO Companies' response to PUC-IR-102, at 3.

> geographic region. At the Transmission Provider's option, Interconnection Requests may be studied serially or in clusters for the purpose of the system impact study.

Section 1.6, FERC's SGIP.

[57]HECO Companies' response to PUC-IR-102, at 3.

3. Concomitantly, based on their review of FERC's Order implementing Section 1.6 of the SGIP, the HECO Companies state that "the costs of Network (transmission system) Upgrades are initially borne by the interconnecting customer but are reimbursed, Distribution Upgrades are 'directly assigned' to the interconnecting customer, and the costs of Interconnecting Facilities, considered 'sole use facilities,' are borne by the interconnection customer. The FERC rule allows for the *possibility*, but does not require, that such costs may be shared with other entities that may benefit from the Interconnection Facilities."[58]

HREA, meanwhile, in response to PUC-IR-102, expands on the arguments made in its Statement of Position by asserting that it makes sense now for the commission to recognize in a policy statement that the benefits of distributed generation accorded to the utility may equal or exceed the costs incurred by the utility to pay for certain interconnection facilities and system betterments. In this manner, HREA reasons, the "utility and the DG owner/customer [will] . . . avoid the costs associated with conducting detailed analyses of the costs and benefits for each proposed facility."[59]

---

[58]HECO Companies' response to PUC-IR-102, at 6-7.

[59]HREA's response to PUC-IR-102, at 4.

II.

Waiver of Hearing

HREA requested the commission's approval to file its Statement of Position in lieu of submitting a proposed procedural schedule "setting forth dates for discovery, evidentiary hearing, etc."[60] The commission approved HREA's request by Order No. 23682, filed on September 26, 2007. Likewise, the Stipulating Parties, by their Stipulation, "do not request additional procedural steps or an evidentiary hearing with respect to the HECO Companies' proposed modifications to their Rule 14H interconnection tariffs."[61]

Here, the commission finds that HREA and the Stipulating Parties voluntarily and intentionally waive any hearing on the interconnection tariff issue.[62] Thus, the commission approves the Parties' voluntary and intentional waiver of hearing on the interconnection tariff issue.

III.

Discussion

This Decision and Order addresses whether the interconnection tariff proposed by the Stipulating Parties, as modified by the HECO Companies in response to the commission's information requests, is just and reasonable and consistent in

[60]HREA's letter, dated September 12, 2007, at 2. See Order No. 23682, filed on September 26, 2007.

[61]Stipulation, at 3.

[62]See Order No. 23521, filed on June 28, 2007 (commission's approval of the Parties' voluntary and intentional waiver of hearing on the PURPA interconnection standards issue).

principle with the guidelines and requirements set forth in Decision and Order No. 22248, filed in Docket No. 03-0371, as clarified by Order No. 22375, filed in the same docket.[63]

A.

Proposed Interconnection Tariff

HRS § 269-16(a) states in relevant part:

> **Regulation of utility rates; ratemaking procedures.** (a) All rates, fares, charges, classifications, schedules, rules, and practices made, charged, or observed by any public utility or by two or more public utilities jointly shall be just and reasonable and shall be filed with the public utilities commission. . . .

HRS § 269-16(a). See also HRS §§ 269-16(b) (just and reasonable standard) and 269-16.2 (any rules, guidelines, or other standards of a public utility that interpret state laws governing non-utility generators shall be approved by the commission).

With respect to the interconnection process, Decision and Order No. 22248 provides, in summary:

> The commission will take those actions that are necessary to promote the installation of distributed generation that is economically efficient and reliable. Those actions include, but are not limited to, the actions listed here and discussed further in this Decision and Order:
>
> (1) Establishing requirements to assure safety and reliability;
>
> (2) Establishing requirements for interconnecting distributed generation to the electric utility's distribution system;
>
> (3) Establishing technical requirements to ensure distribution safety;

[63]See Order No. 23171, at 9 (identification of preliminary issue number 2).

(4) Establishing a policy that permits utility participation in the distributed generation market, under specified circumstances;

(5) Establishing the parameters for standardized interconnection agreements;

(6) Requiring the utilities to perform pre-interconnection studies for customers at reasonable cost to the customer;

(7) Establishing requirements and parameters that: (a) allow qualified third parties to perform the pre-interconnection studies, and require the utility to accept them under specific conditions; (b) allow third party verification of alternative solutions and technologies; (c) create safe-harbor exemption from the study requirements for smaller projects whose interconnection is unlikely to affect the distribution system; (d) pre-certify certain equipment that meets certain standards set by appropriate organizations such as the Underwriters Laboratory ("UL") so as to expedite installation and obviate separately conducted equipment studies;

(8) Requiring the utility to: (a) negotiate or require contracts that allow the utility to dispatch the customer's generation unit where dispatching the unit is economical, and (b) make payments to the customer-generator for the dispatch, reflecting costs avoided by the utility;

(9) Refraining from requiring distributed generators to carry a standardized amount and type of liability insurance and precluding the utility from requiring the same;

(10) Requiring that the utility-incurred costs that benefit the distributed generation project are borne by the distributed generation project and the charges for these utility-provided services are properly allocated;

(11) Requiring the interconnection customer to pay for all costs of interconnecting, including costs of system upgrades or network upgrades, with certain exceptions;

(12) Requiring each utility to establish unbundled rates that identify the costs associated with providing each service (i.e., generation, distribution, transmission and ancillary services) to determine standby rates; and

(13) Considering whether there is a benefit to deferring the assignment of any unrecovered costs until a certain percentage of loads has been lost to distributed generation.

. . . .

THE COMMISSION ORDERS:

1. The policy of the commission is to promote the development of a market structure that assures: (a) distributed generation is available at the lowest feasible cost; (b) distributed generation that is economical and reliable has an opportunity to come to fruition; and (c) distributed generation that is not cost-effective does not enter the system. The commission will take those actions that are necessary to promote the installation of distributed generation that is economically efficient and reliable, including, but not limited to, the matters specified in Section II.A of this Decision and Order.

. . . .

4. The commission requires that each utility establish reliability and safety requirements, by proposed tariff for approval by the commission, for distributed generation that is connected to the electric utility's distribution system.

5. The commission requires that each utility establish a non-discriminatory interconnection policy, by proposed tariff for approval by the commission, that entitles distributed generation to interconnect when it can be done safely, reliably, and economically. The commission also requires the utilities to develop a standardized interconnection agreement, by proposed tariff for approval by the commission, to streamline the distributed generation application review process and eliminate long lead times that may lead to cancellation of a beneficial project, as more particularly described above.

> 6. To ensure that only economic distributed generation projects are developed, and that there is not cost shifting from the customer-generator to other customers or to utility shareholders, utility-incurred costs shall be allocated properly so that those costs that benefit the distributed generation project are borne by the project. This principle is applied to interconnection costs, standby and backup service costs, and unrecovered utility costs, as described above.
>
> . . . .
>
> 8. The HECO [Companies] shall be allowed to continue to utilize interconnection tariff Rule 14.H. until new amendments are approved by the commission.
>
> . . . .
>
> 11. To the extent any existing tariff or other regulatory provisions are applicable to any of the additional tariffs required to be developed by the commission in this Decision and Order, the utility shall be allowed to propose amendments to the same, as appropriate. The utility shall also be permitted to propose to the commission for its consideration other means that may be more efficient and appropriate, in lieu of a tariff, by which to accomplish the principles and policies established by the commission in this Decision and Order.

Decision and Order No. 22248, Section II.A, at 12-14, and Ordering Paragraphs Nos. 1, 4, 5, 6, 8, and 11, at 46-48 (emphasis added).

Since 2003, the HECO Companies have filed quarterly and annual status reports with the commission and the Consumer Advocate in Docket No. 02-0051, under partial confidential seal, describing their efforts in executing interconnection agreements with non-utility generators. These status reports reveal that the HECO Companies have executed

interconnection agreements with an array of distributed generation customers, pursuant to Rule 14H.[64] Moreover, Rule 14H authorizes customers to seek the commission's assistance or guidance in finalizing an interconnection agreement with HECO, HELCO, or MECO. To date, no customer has requested the commission's assistance or guidance in finalizing an interconnection agreement.

As previously noted by the commission in Decision and Order No. 23562:

> . . . . the Parties in this proceeding are in the midst of discussing and attempting to reach consensus on revisions to Rule 14H that comply with the applicable guidelines and requirements set forth in Decision and Order No. 22248, filed in Docket No. 03-0371, as clarified by Order No. 22375. This approach involves the collaborative efforts of a broad cross-section of interested stakeholders. Specifically, the HECO Companies, Consumer Advocate, potential and current distributed generation customers (HHSC, Kahala SLC, the Marriott Intervenors, and Starwood Resorts), a vendor of distributed generation systems (BluePoint Energy), a national combined heat and power organization (USCHPA), and a local non-profit, renewable energy organization.

Decision and Order No. 23562, at 16-17.

Utilizing the HECO Companies' Rule 14H as a starting point in their discussions, the Stipulating Parties have developed and reached agreement on their Proposed Interconnection Tariff. Moreover, HREA expresses its "agreement on most matters relevant to the interconnection of distributed generation . . .

---

[64]Some of the identities of the distributed customer-generators are filed under confidential seal. According to the most recent annual report, filed on January 31, 2008, HECO, HELCO, and MECO have no existing distributed generation customers without an executed interconnection agreement.

systems on HECO Companies' grids as included in the Stipulation."[65]

Viewed as a whole, the commission finds that: (1) the HECO Companies, in their responses to the commission's requests, have sufficiently responded to the commission's observations raised therein; and (2) the interconnection tariff proposed by the Stipulating Parties, as modified by the HECO Companies in response to the commission's information requests, appears to comply with the applicable guidelines and requirements set forth in Decision and Order No. 22248, as clarified by Order No. 22375, and as discussed below.[66]

1.

Safety and Reliability

Appendices I and II sufficiently address the safety and reliability guidelines and requirements set forth in Decision and Order No. 22248 governing the interconnection of distributed generating facilities with the utility's electric distribution system.[67] As noted by the HECO Companies:[68]

1. Appendix I incorporates: (A) the technical requirements to maintain the adequacy, security, and stability of

---

[65]HREA's Statement of Position, at 3.

[66]Hereinafter, the phrase "Proposed Interconnection Tariff" refers to the interconnection tariff proposed by the Stipulating Parties, as modified by the HECO Companies in their responses to PUC-IR-101 and PUC-IR-102.

[67]See Decision and Order No. 22248, Section II.F, at 30-33.

[68]See generally Docket No. 03-0371, HECO Companies' Transmittal Letter, Section I(A), Reliability and Safety, at 2-5.

the utility's distribution system, including reliability and safety requirements for distributed generation that is connected to the distribution system;[69] (B) control and monitoring requirements for generating facilities, including the capability to allow the utility to trip the interrupting device during emergency conditions, and requirements governing metering, telemetry, and communications for supplying failure reporting data on generation operation; (C) minimum documentation and test result criteria; and (D) requirements for the distributed generation unit to synchronize with the electric power system upon connection, with the unit prohibited from reconnecting to the power system until the synchronization requirement is met.

2. Appendix II: (A) defines the terms and conditions required to allow a distributed generating facility to

[69]To ensure distribution system safety, the technical standards set forth in Appendix I include requiring: (1) any distributed generating unit to have a positive disconnect that automatically isolates it from the distribution system where there is a fault; (2) that when there is a fault, the distributed generation unit may not reconnect to the distribution system until the fault is cleared; (3) all interconnected distributed generation to have a utility-accessible manual disconnect switch; (4) all distributed generators to comply with national, state, and local standards and electrical codes and safety practices; (5) the generator to follow the utility's safety procedures for ensuring that switching devices do not operate unless and until appropriate pre-conditions are met and verified; and (6) the distributed generation unit to have protective devices such as over current protection, circuits with reclosing schemes, inverters, synchronizing schemes and islanding abilities. See Docket No. 03-0371, HECO Companies' Transmittal Letter, at 5. Moreover, the reliability requirements include operating standards for voltage, power factors, frequency, and harmonic distortion, and procedures and equipment to allow for the transfer of electric power between the distribution system and the distributed generating facility, and allow for parallel operation to occur. See id. at 3.

interconnect and operate in parallel with the utility's system; and (B) requires customers to maintain logs on unit availability.

3. With respect to the revisions to Appendix I, Section 3(f), Supervisory Control, "[t]he need for control and monitoring of a generating facility is related more to the capacity size of the generating unit rather than its export capability."[70]

The HECO Companies note that Appendix II does not incorporate one of the recommendations set forth in Decision and Order No. 22248, Section II(F):[71]

> The commission, therefore, requires that each utility establish reliability and safety requirements, by proposed tariff for approval by the commission, for distributed generation that is connected to the electric utility's distribution system. . . . <u>In such situations, certain limitations should apply: (1) the distributed generation unit should be required to maintain a consistent degree of power flow, stable VAR (or volt amperes reactive) supply and voltage support</u>; (2) the distributed generation unit must be able to synchronize with the electric power system, within an acceptable degree; (3) upon disconnection from the power system, the distributed generation unit should be prohibited from reconnecting to the power system and re-commencing operation until the utility has verified that the unit can reestablish full voltage and power support to the distribution system and operate in a stable manner for a specified time period to be established by the utility. . . .

Decision and Order No. 22248, Section II(F), Reliability and Safety, at 31 - 32 (emphasis added).

---

[70]Docket No. 03-0371, HECO Companies' Transmittal Letter, at 4.

[71]<u>See</u> Docket No. 03-0371, HECO Companies' Transmittal Letter, at 3-4.

In particular, the HECO Companies note that Appendix II does not require a customer generator to provide voltage and power support to the distribution system or to maintain a consistent degree of power flow, VAR supply, and voltage support. In explaining this deviation, the HECO Companies state that: (1) Appendix II is intended for interconnection of generating facilities without a need or requirement for voltage, power, and system support; and (2) generating facilities with the intent of providing voltage, power, or system support will generally enter into a power purchase agreement with the utility.[72]

2.

Interconnection Process

Consistent with the requirements set forth in Decision and Order No. 22248, governing the interconnection process, the Proposed Interconnection Tariff: (1) establishes the policies that entitle distributed generation to interconnect with the utility's system when it can be done safely, reliably, and

---

[72]In this regard, Rule 14H states in pertinent part:

2. Interconnection Agreement

. . . .

c. The Standard Interconnection Agreement does not apply when (1) the Customer enters into a power purchase agreement for the sale to the Company of electric energy generated by the distributed generating facility, or (2) the Customer enters into a standard agreement providing for net energy metering pursuant to Rule No. 18.

HECO Companies' Rule 14H(2)(c)(emphasis added).

economically;[73] (2) encompasses the seven areas identified by the commission in Decision and Order No. 22248;[74] (3) sets forth the parameters for the Standard Interconnection Agreement;[75] and (4) incorporates specific interconnection standards adopted by IEEE or other recognized standard-setting groups.

In general, Appendix III outlines the overview process governing the interconnection of a distributed generating facility with the utility's distribution system, while Appendix II sets forth the Standard Interconnection Agreement provided to customers intending to operate in parallel in the utility's system.

3.

Pre-Interconnection Studies

Decision and Order No. 22248 requires:

> . . . each utility to perform pre-interconnection studies for customers at reasonable costs to the customer, and to set forth the terms and conditions of the same in a proposed tariff for approval by the commission. These requirements will require the utility to complete the study

[73] See Docket No. 03-0371, Decision and Order No. 22248, Section II.G, at 35, and Ordering Paragraph No. 5, at 46.

[74] The seven areas consist of: (1) interconnection; (2) pre-interconnection studies; (3) distribution system upgrades required for integration; (4) responsibility for control and operation of distributed generation equipment; (5) indemnification and liability insurance; (6) communication with customers; and (7) dispute resolution. See Docket No. 03-371, Decision and Order No. 22248, Section II.G, at 35.

[75] The parameters consist of: (1) the obligations of the utility relative to customer notification and communication requirements; (2) time lines for completion; (3) allowances for pre-interconnection studies and charges; (4) provision for third-party interconnection studies; and (5) disconnection and reconnection requirements. See Docket No. 03-0371, Decision and Order No. 22248, Section II.G(1), at 35-36.

> within a reasonable time, advise customers of its costs in advance, limit charges for redundant studies, provide the study results in writing, and provide similar features to facilitate customer interconnection. These requirements and parameters shall also: (1) allow qualified third parties to perform the studies, and require the utility to accept them under specified conditions; (2) allow third party verification of alternative solutions and technologies; [and] (3) create safe-harbor exemption from the study requirements for smaller projects whose interconnection is unlikely to affect the distribution system[.]

Docket No. 03-0371, Decision and Order No. 22248, Section II.G(2), at 36-37; see also id., Section II.A(6) and (7), at 13.

Appendix III incorporates the requirements set forth in Decision and Order No. 22248 governing pre-interconnection studies. In summary:

1. Following the submission of the customer's complete proposal, the utility will perform an initial technical screening within a specified time period, at no charge to the customer, to determine whether additional technical study is required to complete the technical review.[76]

2. If the utility determines that additional technical study of the interconnection proposal is necessary, the utility will provide the customer with a cost estimate and schedule to complete the required additional technical study, before the overall study is initiated. The utility or its consultant may perform the analyses included in the additional technical study, with the final results of all technical screenings and studies provided in writing to the customer.[77]

---

[76]Stipulation, Appendix III, Sections 1 and 2.

In the alternative, upon the mutual agreement of the utility and customer, the customer, at the customer's expense, may have the additional technical study performed by a qualified third-party consultant, or a qualified employee, contractor, or agent of the customer (or verify alternative solutions and technologies). All study recommendations by the customer's consultant shall be reviewed by the utility.[78]

3. In order to limit charges for redundant interconnection studies, Section 3(d) provides in relevant part:

> With respect to additional technical studies performed or contracted by the Company, the Customer will be responsible for the cost of any additional technical study (or such lesser amount as the Company may specify to facilitate the processing of interconnection requests for similarly situated facilities) that needs to be performed in order to evaluate the impacts of the generating facility's interconnection to the utility system. Customers with existing generating facilities already operating in parallel with the Company's system on March 21, 2003 will not be charged for any additional technical studies . . . .

Stipulation, Appendix III, Section 3(d).

4. With respect to establishing a safe-harbor exemption for smaller projects whose interconnection in unlikely to affect the distribution system, Section 2 includes a flowchart that provides for an expedited review process for such projects.

---

[77]Stipulation, Appendix III, Sections 2 and 3.

[78]Stipulation, Appendix III, Sections 2 and 3.

4.

Distribution System Upgrades
Required for Integration

To minimize the possibility of the utility insisting that the customer install redundant, protective equipment, Decision and Order No. 22248 requires:

> . . . the utility to: (1) accept certification of distributed generation equipment, which meets the standards from qualified entities such as IEEE and UL; (2) train its personnel in new technologies relating to integration equipment; and (3) where new equipment is required to facilitate interconnection, propose an allocation of cost responsibility that recognizes both the costs caused by the generator and the system benefits, if any, derived from the new equipment. Each utility may establish detailed terms and conditions for the foregoing requirements, by proposed tariff for approval by the commission.

Docket No. 03-0371, Decision and Order No. 22248, Section II.G(3), at 37-38; see also id., Section II.A(7)(d), at 13.

For the commission's requirements governing integration, the HECO Companies: (1) reiterate that equipment that meets IEEE-929 and UL-1741 will, in general, expedite the review process and not require separately conducted studies for that equipment;[79] and (2) state that they will continue to train

[79]In this regard, Appendix III, Section 2(b), states in relevant part:

> For example, photovoltaic systems less than 250 kW interconnecting through inverters that meet UL 1741, or latest version (the Standards for Inverters, Converters and Controllers for Use in Independent Power Systems) and IEEE 929-2000, or latest version (the Recommended Practice for Utility Interface of Photovoltaic Systems) may qualify for an expedited review process. Self-excited synchronous generators present more interconnection issues.

their personnel in new technologies relating to integration equipment.[80]

Moreover, with respect to the allocation of cost responsibility where new equipment is required to facilitate interconnection that recognizes both the costs caused by the generator and the system benefits, if any, derived from the new equipment, Appendix III, Exhibit C, provides the means for the utility to itemize and charge the customer for new utility-owned interconnection equipment costs. In regards to system benefits, Appendix III, Section 2(d), authorizes the customer to apply for a credit to the utility, subject to the commission's approval, if the customer is able to show that there are benefits to the utility system due to the interconnection facilities.[81]

5.

Indemnification and Liability Insurance

Decision and Order No. 22248 states:

> . . . the commission will not require distributed generators to carry a standardized amount of insurance, and hereby prohibits any utility from imposing a standardized insurance requirement for distributed generation projects. The commission allows each utility, however, to require that distributed generation customers disclose whether they intend to self-insure (and if so their means and capability of self-insuring) or if they intend

---

Stipulation, Appendix III, Section 2(b).

[80]Docket No. 03-0371, HECO Companies' Transmittal Letter, at 11.

[81]See also HECO Companies' response to PUC-IR-102.

> to obtain an insurance policy (and, if so, in what forms and amounts), as part of the interconnection application process with the utility.

Docket No. 03-0371, Decision and Order No. 22248, Section II.G.(5), at 38-39; see also id., Section II.A(9), at 14.

Appendix II, Section 19, presently contains an Insurance provision that requires the customer-generator to maintain a commercial general liability policy at specified amounts, depending upon the nameplate rating of the generating facility.

Consistent with the commission's requirements, the Proposed Interconnection Tariff amends Appendix II, Section 19 and Exhibit D, by: (1) removing the standardized insurance policy limits; and (2) including language that requires the customer generator to state whether the customer intends to self-insure (and if so, the customer's means and capability of self-insuring), or if the customer intends to obtain an insurance policy (and if so, in what forms and amounts).[82] "This approach allows a customer-generator more flexibility in providing for adequate risk management of the project without the burdensome and potentially overly costly standardized insurance requirements."[83]

---

[82] See also Stipulation, Appendix III, Section 4, Insurance Coverage.

[83] Docket No. 03-0371, Decision and Order No. 22248, at 39.

6.

Utility Communication with Customer-Generators

Decision and Order No. 22248 "requires each utility to (a) establish a centralized point of contact for distributed generation applications, (b) train certain utility employees in distributed generation matters as appropriate, and (c) maintain the confidentiality of information the customer-generator deems confidential, unless the commission determines that disclosure is necessary to protect the public or as otherwise determined by the commission."[84]

Consistent with the commission's requirements, the Proposed Interconnection Tariff amends Appendix III by: (1) designating a specific utility department as the central point of contact for applications for distributed generation; and (2) including a provision that requires the utility to maintain the confidentiality of information designated as confidential by the customer, unless the commission determines that disclosure is necessary to protect the public or as otherwise determined by the commission. Moreover, the HECO Companies represent that they will "continue training of [their] personnel in distributed generation matters.[85]

---

[84]Docket No. 03-0371, Decision and Order No. 22248, Section II.G(6), at 39-40.

[85]Docket No. 03-0371, HECO Companies' Transmittal Letter, at 14.

7.

Interconnection Costs

Decision and Order No. 22248 "requires that each utility require the interconnecting customer to pay for all costs of interconnecting, including the costs of system upgrades or network upgrades; however, if the interconnecting customer or generator can show that there are benefits to the utility system for such upgrades, it may apply to the utility for a credit reflecting these benefits, subject to commission approval."[86]

With respect to the commission's requirement for the interconnecting customer to pay for all the costs of interconnecting, including the costs of system or network upgrades, Appendix II, Exhibit C, provides the means for the utility to itemize and charge the customer for new utility-owned interconnection equipment costs. Furthermore, consistent with the commission's requirement governing system benefits, Appendix III, Section 2(d), authorizes the customer to apply for a credit to the utility, subject to the commission's approval, if the customer is able to show that there are benefits to the utility system due to the interconnection facilities.[87]

---

[86]Docket No. 03-0371, Decision and Order No. 22248, Section II.H(1), at 41; see also id., Section II.A(10) and (11), at 14; and Ordering ¶ 6, at 47.

[87]See also PUC-IR-102.

Finding that the Proposed Interconnection Tariff complies with the applicable requirements set forth in Decision and Order No. 22248 governing interconnection costs, the commission declines to adopt HREA's contrary position in this regard.

B.

Conclusion

Viewed as a whole, the commission approves as reasonable the Proposed Interconnection Tariff. HECO, HELCO, and MECO shall file their revised tariff sheets for Rule 14H, with the appropriate revisions. The revised tariff sheets shall reconcile the apparent inconsistencies in the Proposed Interconnection Tariff, with respect to the references to IEEE 929-2000 or its latest version, and the proposed deletions of the references to IEEE 929-2000 or its latest version.[88]

III.

Orders

THE COMMISSION ORDERS:

1. The Parties' voluntary and intentional waiver of hearing on the interconnection tariff issue is approved.

---

[88] Compare Stipulation, Appendix I, Preamble, at 34B-2 (consistency with IEEE standards); Appendix I, Section 4(m) (IEEE 929-2000 or latest version); Appendix I, Section 5(c) (IEEE 929-2000 or latest version); Appendix II, Exhibit A, Section 7, at 34C-19 (IEEE 929); Appendix III, Step 2, at 34D-6 (IEEE 929) and 34D-7 (IEEE 929-2000 or latest version) with Appendix I, Section 3(e) (deletion of IEEE 929-2000 or its latest version); Appendix I, Section 6(a) (deletion of IEEE 929-2000 or its latest version); and Appendix 6(b) (deletion of IEEE 929-2000 or its latest version).

2. The interconnection tariff proposed by the Stipulating Parties, as modified by the HECO Companies in response to the commission's information requests, to govern the interconnection of distributed generation facilities operating in parallel with the utility's system, is approved, effective from the date of this Decision and Order.

3. By May 7, 2008, HECO, HELCO, and MECO shall file their revised tariff sheets for Rule 14H, with the appropriate revisions and the applicable issued and effective dates.

4. The HECO Companies shall comply with Item No. 3 of the Stipulation regarding new or revised IEEE standards.

5. The failure to comply with the applicable Ordering Paragraphs, above, may constitute cause to void this Decision and Order, and may result in further regulatory action as authorized by State of Hawaii law.

6. The commission reserves the right review anew the HECO Companies' Interconnection Tariff, also known as Rule 14H, at any time, consistent with the public interest.

DONE at Honolulu, Hawaii APR 1 8 2008.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By _____
Carlito P. Caliboso, Chairman

By _____
John E. Cole, Commissioner

By _____
Leslie H. Kondo, Commissioner

APPROVED AS TO FORM:

_____
Michael Azama
Commission Counsel

2006-0497.laa

CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Decision and Order No. 24159 upon the following persons, by causing a copy hereof to be mailed, postage prepaid, and properly addressed to each such person.

CATHERINE P. AWAKUNI
EXECUTIVE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
DIVISION OF CONSUMER ADVOCACY
P. O. Box 541
Honolulu, HI 96809

WILLIAM A. BONNET
VICE PRESIDENT
HAWAIIAN ELECTRIC COMPANY, INC.
HAWAII ELECTRIC LIGHT COMPANY, INC.
MAUI ELECTRIC COMPANY, LTD.
P. O. Box 2750
Honolulu, HI 96840-0001

DEAN MATSUURA
DIRECTOR, REGULATORY AFFAIRS
HAWAIIAN ELECTRIC COMPANY, INC.
P. O. Box 2750
Honolulu, HI 96840-0001

THOMAS W. WILLIAMS, JR., ESQ.
PETER Y. KIKUTA, ESQ.
GOODSILL ANDERSON QUINN & STIFEL
Alii Place, Suite 1800
1099 Alakea Street
Honolulu, HI 96813

Counsel for HECO, HELCO, MECO

WARREN S. BOLLMEIER II
PRESIDENT
HAWAII RENEWABLE ENERGY ALLIANCE
46-040 Konane Place, #3816
Kaneohe, HI 96744

RENE McWADE
HAWAII HEALTH SYSTEMS CORPORATION
3675 Kilauea Avenue
Honolulu, HI 96816

WILLIAM W. MILKS, ESQ.
LAW OFFICE OF WILLIAM W. MILKS
American Savings Bank Tower
Suite 977, 1001 Bishop Street
Honolulu, HI 96813

Counsel for CHAPEAU, INC., dba BLUEPOINT ENERGY; STARWOOD HOTELS AND RESORTS WORLDWIDE, INC.; and HAWAII HEALTH SYSTEMS CORPORATION

BEN DAVIDIAN, ESQ.
LAW OFFICES OF BEN DAVIDIAN
P. O. Box 2642
Fair Oaks, CA 95628

Counsel for CHAPEAU, INC., dba BLUEPOINT ENERGY; STARWOOD HOTELS AND RESORTS WORLDWIDE, INC.; and HAWAII HEALTH SYSTEMS CORPORATION

TYRONE CROCKWELL
AREA DIRECTOR OF ENGINEERING
HAWAII & PACIFIC ISLANDS
2552 Kalakaua Avenue
Honolulu, HI 96815

GREGG W. ROBERTSON
TREASURER
KAHALA SENIOR LIVING COMMUNITY, INC.
c/o ROBERTSON & COMPANY
Suite 2290, Pauahi Tower
1001 Bishop Street
Honolulu, HI 96813

THOMAS C. GORAK, ESQ.
GORAK & BAY, L.L.C.
1161 Ikena Circle
Honolulu, HI 96821

Counsel for JW MARRIOTT IHILANI RESORT & SPA; WAIKOLOA MARRIOTT BEACH RESORT & SPA; MAUI OCEAN CLUB; and WAILEA MARRIOTT; and for KAHALA SENIOR LIVING COMMUNITY, INC.

ERIC WONG, ENERGY POLICY CHAIR
UNITED STATES COMBINED HEAT AND POWER ASSOCIATION
980 Ninth Street, Suite 2200
Sacramento, CA 95814

Karen Higashi

Karen Higashi

DATED: APR 18 2008