BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

---------In the Matter of---------- PUBLIC UTILITIES COMMISSION Instituting a Proceeding Under Hawaii's Net Energy Metering Law, Hawaii Revised Statutes §§ 269-101-269-111, to Investigate Increasing; (1) the Maximum Capacity of Eligible Customer-Generators to More Than Fifty Kilowatts; and (2) the Total Rated Generating Capacity Produced by Eligible Customer-Generators to an Amount Above 0.5 Percent of Peak Demand	Docket No. 2006-0084

ORDER REGARDING NET ENERGY METERING PROPOSALS

BEFORE THE PUBLIC UTILITIES COMMISSION

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---------In the Matter of----------)) PUBLIC UTILITIES COMMISSION)) Instituting a Proceeding Under) Hawaii's Net Energy Metering Law,) Hawaii Revised Statutes §§ 269-101-) 269-111, to Investigate Increasing;) (1) the Maximum Capacity of) Eligible Customer-Generators to) More Than Fifty Kilowatts; and (2)) the Total Rated Generating Capacity) Produced by Eligible Customer-) Generators to an Amount Above) 0.5 Percent of Peak Demand))	Docket No. 2006-0084

ORDER REGARDING NET ENERGY METERING PROPOSALS

By this Order, the commission: (1) approves the Proposed Plan to Address Net Energy Metering ("NEM") filed by HAWAIIAN ELECTRIC COMPANY, INC. ("HECO"), HAWAII ELECTRIC LIGHT COMPANY, INC. ("HELCO"), MAUI ELECTRIC COMPANY, LIMITED ("MECO") (collectively, "HECO Companies"), and the DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, DIVISION OF CONSUMER ADVOCACY ("Consumer Advocate") on August 14, 2009; (2) approves the Stipulation on the HECO Companies' NEM System Cap filed by the HECO Companies and the Consumer Advocate on January 7, 2010, subject to certain conditions, as set forth in this Order; (3) denies the request to forego the development of an NEM Pilot Program filed by the HECO Companies, the Consumer Advocate, HAWAII RENEWABLE ENERGY ALLIANCE ("HREA"), and HAWAII SOLAR ENERGY ALLIANCE ("HSEA") on December 18, 2009, with further required actions set forth in this Order; (4) approves the Stipulated Proposed NEM Pilot Program and Alternative Rate Structure for KAUAI ISLAND UTILITY COOPERATIVE ("KIUC") filed by KIUC, the Consumer Advocate, HREA, and HSEA on October 15, 2009; and (5) dismisses as moot the Stipulation on HECO's NEM System Cap filed on August 24, 2010 by the HECO Companies and the Consumer Advocate.[1]

I.

Background

A.

Net Energy Metering Law

Hawaii's Net Energy Metering Law, codified as Hawaii Revised Statutes ("HRS") §§ 269-101 to 269-111 ("Net Energy Metering Law"), which was enacted in 2001, allows residential and commercial customers of an electric utility (including a government entity) who own and operate eligible renewable energy generators to use "net energy metering" to measure electricity usage for billing purposes. As defined by HRS § 269-101, "net energy metering" means "measuring the difference between the electricity supplied through the electric grid and the electricity generated by an eligible customer-generator and fed back to the electric grid over a monthly billing period[.]" In essence, eligible customer-generators who use NEM are billed only on the net kilowatt-hours ("kWh") of electricity they use.

[1]The parties to this docket are the HECO Companies, the Consumer Advocate, KIUC, HREA, and HSEA (collectively, "Parties"). The commission also approved ZERO EMISSIONS LEASING LLC as a participant in this docket.

The Net Energy Metering Law specifies that a customer's generating facility must be solar, wind, biomass, hydroelectric, or a hybrid system consisting of two or more of the foregoing types of facilities.[2] The statute further specifies that the maximum generating capacity per customer must be no more than fifty kilowatts ("kW").[3] The law, however, expressly authorizes the commission to increase the maximum generating capacity for customers: "The eligible customer-generator shall have a capacity of not more than fifty kilowatts; provided that the public utilities commission may increase the maximum allowable capacity that eligible customer-generators may have to an amount greater than fifty kilowatts by rule or order."[4]

In addition, the Net Energy Metering Law provides a cap on the total power producing capacity of eligible customer-generators, which is currently set in the statute at 0.5 percent of an electric utility's peak demand.[5] As with the maximum generating capacity of individual customers established in HRS § 269-101.5, the Net Energy Metering Law authorizes the commission to "modify, by rule or order, the total rated generating capacity produced by eligible customer-generators[.]"[6]

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[2] See HRS § 269-101.

[3] See HRS § 269-101.5.

[4] Id.

[5] See HRS §§ 269-102, 269-104.

[6] HRS § 269-102.

B.

Initiation of this Docket

By Order No. 22380, filed on April 10, 2006, the commission initiated this investigation to determine whether, and to what extent, the commission should increase: (1) the maximum capacity of eligible customer-generators to more than 50 kW; and (2) the total rated generating capacity produced by eligible customer-generators to an amount above 0.5 percent of an electric utility's system peak demand, under Hawaii's Net Energy Metering Law.

C.

Decision & Order No. 24089

On March 13, 2008, the commission issued Decision and Order No. 24089 ("D&O No. 24089"), which approved two stipulations to increase the NEM limits that were separately filed on September 17, 2007 by the HECO Companies and KIUC. In approving the stipulation affecting the HECO Companies, the commission approved, in sum, the following:

- An increase in the maximum size of eligible customer-generators from 50 kW to 100 kW;
- An increase in the system cap from 0.5% to 1.0% of system peak demand;
- For HECO, a reservation of 40% of the 1.0% system peak demand for small systems that have a NEM generator size of 10 kW or less, leaving 60% of the 1.0% system peak demand for systems with an NEM generator size of over 10 kW on HECO's grid;

- For the HELCO and MECO grids, a reservation of 50% of the 1.0% system peak demand for small systems that have a NEM generator size of 10 kW or less, leaving 50% of the 1.0% system peak demand for systems with a NEM generator size of over 10 kW; and

- A proposal to analyze any future potential increases to the NEM limits for the HECO Companies in each utility's IRP process.

For KIUC, the commission approved, in sum, the following:

- The maximum size of KIUC's eligible customer-generators shall remain at 50 kW;

- An increase in KIUC's total rated generating capacity limit from 0.5% to 1.0% of KIUC's peak demand;

- The 1.0% of KIUC's peak demand shall be allocated as follows: (a) 50% will be allocated to systems whose size is 10 kW or smaller; and (b) the remaining 50% will be allocated to systems whose size is greater than 10 kW, but not greater than 50 kW; and

- A mechanism by which KIUC's NEM limits will be regularly reviewed in its IRP process.

Additionally, the commission ordered the HECO Companies and KIUC to design and propose NEM Pilot Programs for the commission's review and approval, according to the following parameters:

- The NEM Pilot Program should evaluate the effects of further increasing the NEM unit size and system capacity limits beyond those that are established in this Decision and Order.

- The NEM Pilot Program shall be designed for a limited number of participants, with nominal generating unit sizes of at least 100 kW to 500 kW, while allowing for larger units (i.e., 500 kW+) if technically and economically reasonable and practicable;

- The NEM Pilot Program shall be designed to provide sufficient economic incentives to encourage participation, while identifying and implementing any safeguards necessary to assure the safety, reliability, and power quality of the utility system.

- The NEM Pilot Program shall be conducted outside the laws governing NEM, as set forth in the Net Energy Metering Law or commission order, unless and until the unit sizes in the NEM Pilot Program subsequently fall within the NEM size limits established by statute or commission order. As such, the utilities may propose additional interconnection or safety obligations for the NEM Pilot Program, and the generation from participants in the NEM Pilot Program will not be counted towards the threshold established in this docket of 1% of the utility's system peak demand. In addition, the utilities may propose an alternative rate structure for the NEM Pilot Program.

- The utilities may consider NEM standards and programs in other states that permit larger NEM units (i.e., 100 kW+).

- Each electric utility shall report on the status and results from the NEM Pilot Program in the annual NEM Status Reports currently filed with the commission. The reports shall address any relevant impacts related to the implementation of larger NEM units on the utility system through the NEM Pilot Program.[7]

[7] D&O No. 24089 at 19-20.

D.

Energy Agreement

On October 20, 2008, the Governor of the State of Hawaii, the State of Hawaii Department of Business, Economic Development and Tourism, the Consumer Advocate, and the HECO Companies entered into a comprehensive agreement designed to move the State away from its dependence on imported fossil fuels for electricity and ground transportation, and toward "indigenously produced renewable energy and an ethic of energy efficiency."[8] A product of the Hawaii Clean Energy Initiative ("HCEI"),[9] the Energy Agreement is a commitment on the part of the State and the HECO Companies to accelerate the addition of new, clean resources on all islands; transition the HECO Companies away from a model that encourages increased electricity usage; and provide measures to assist consumers in reducing their electricity bills.

Regarding NEM, the Energy Agreement provides:

> The parties are in agreement that there should be no system-wide caps on [NEM] at any of the [HECO Companies]. Instead, the parties agree to the following:
>
> - Distributed generation [("DG")] interconnection will be limited on a per-circuit basis, where generation

[8]Energy Agreement Among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies, dated October 20, 2008 ("Energy Agreement"), at 1.

[9]On January 31, 2008, the State of Hawaii and the U.S. Department of Energy entered into a Memorandum of Understanding designed to establish a partnership, called the Hawaii Clean Energy Initiative. The partnership aims to have 70% of all of Hawaii's energy needs generated by renewable energy sources by 2030.

(including [photovoltaic ("PV")], micro wind, internal combustion engines, and net metered generation) feeding into the circuit shall be limited to no more than 15% of peak circuit demand for all distribution-level circuits of 12kV or lower;

- New DG requests shall be processed and interconnected on a first-come, first-served basis unless the Commission specifies some other method;

- For those circuits where interconnection requests (particularly for PV) approach the 15% limit, the utility will perform and complete within 60-days after receipt of an interconnection request, a circuit-specific analysis to determine whether the limit can be increased. For non inverter-based DGs, the analysis to determine whether the limit can be increased will be performed on a case-by-case basis based on the specifics of the DG project(s) proposed;

- If the utility believes a specific DG installation poses a significant risk to circuit reliability and safety or grid stability, it will notify the applicant, the Consumer Advocate and the Commission, within 30 days from receipt of the completion of a circuit analysis and the identification of the need to defer the installation until further analysis can be conducted, and shall conduct that analysis within no more than three months from the date of the application request.

NEM currently provides an interim measure to encourage the installation of and pay for renewable energy generated from customer-sited systems, generally PV systems. The parties agree that NEM will be replaced with an appropriate feed-in tariff and new net metered installations shall be required to incorporate time-of-use metering equipment and, when time-of-use rates are implemented on a full scale basis in Hawaii or the applicable area, the net metered customer shall move to time-of-use net metering and sale of excess energy.

> As part of the Clean Energy Scenario Planning ("CESP") process, Locational Value Maps ("LVM") identified in the CESP process can trigger an engineering review by the [HECO Companies] to determine whether circuit limits can be safely raised above the threshold for the specific circuits in the LVM and if distribution circuit modifications can be made to increase the level of DG/NEM within the LVM.
>
> Current provisions relating to interconnection requirements will remain in force.[10]

II.

Proposals

A.

HECO Companies' Proposed Plan to Address NEM

On December 26, 2008, the commission ordered the HECO Companies and the Consumer Advocate to file a proposed plan to address the NEM section of the Energy Agreement.[11] The HECO Companies and the Consumer Advocate filed their proposed plan regarding the Energy Agreement's NEM provisions on August 14, 2009, which requires the HECO Companies to:

- Adopt a 15% per-circuit DG interconnection limitation designed to be consistent with Section 19 of the Energy Agreement;[12]

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[10]Energy Agreement at 28, Section 19.

[11]See Order Approving, in Part, and Denying, in Part, Stipulations filed on December 3, 2008, filed on December 26, 2008.

[12]This limitation is not a strict cap, but rather a benchmark, where additional technical studies may be required for a given circuit once the threshold is reached. See HECO

- Assess the removal of NEM system-wide caps;[13]
- Develop LVM specific to each of the HECO Companies' service territories;[14] and
- Revise their tariff rules accordingly.[15]

The HECO Companies represent that they have completed or are in the process of completing the commitments they have made under the proposed plan.

The commission has evaluated the merits of individual elements of the stipulated proposed plan and finds that the plan represents a reasonable approach to facilitating the continued development of NEM that is consistent with the HCEI, while allowing for the procurement of renewable energy resources via other mechanisms, such as feed-in tariffs ("FIT"). Based on these factors, the commission concludes that the proposed plan is reasonable and in the public interest, and should accordingly be approved.

Companies' Response to Information Requests, filed on January 8, 2010.

[13]See Section II.B., infra.

[14]These maps have been completed and are available on HECO's website.

[15]The revised tariff rules were allowed to take effect upon operation of law, effective from May 27, 2010, pursuant to the commission's Decision and Order, filed on May 26, 2010, in Docket No. 2010-0015.

B.

Stipulation on the HECO Companies' NEM System Cap

On January 7, 2010, the HECO Companies and the Consumer Advocate filed a stipulation proposing to eliminate NEM system-wide caps and replace them with a 15% per-circuit distribution threshold for DG penetration. In support of the stipulation, the HECO Companies and the Consumer Advocate explained that the HECO Companies "are pursuing a number of steps to implement consistent measures which advocate standards and a transparent process to assess overall grid reliability and impacts due to emerging resources on the grid."[16] The stipulation further stated:

> Reliability and Interconnection standards shall provide the basis by which protection measures on system reliability are maintained and periodically reviewed. . . . Overall system level caps can be derived based on these protection measures and re-evaluated. As such, the goal is to move away from setting caps on each individual procurement program (etc. NEM, FIT, PV Host) and instead evaluate the system level impact of resources interconnected at the distribution level and those that are connected at the sub-transmission and/or transmission level, depending on the applicable island grid.[17]

In addition, the stipulation states that: (1) the HECO Companies will remove the NEM system caps "with the adoption of the Rule 14H modifications and the establishment of Reliability Standards (anticipated to be filed on February 4, 2010 in Docket

[16]Stipulation on the HECO Companies' NEM System Cap, filed on January 7, 2010, Exhibit 1 at 5.

[17]Id. at 6-7.

No. 2008-0273)[;]"[18] and (2) the maximum size of the eligible customer-generators that qualify for NEM will remain unchanged at 100 kW.[19]

Upon review, the commission finds the Stipulation on the HECO Companies' NEM System Cap to be reasonable. The proposals therein are consistent with the agreements reached in the Energy Agreement, as well as the Proposed Plan to Address NEM, filed on August 14, 2009, approved above. Moreover, the commission supports the assertion in the stipulation that additions of renewable energy generators at the distribution level could have an impact on overall grid reliability and responsiveness, and therefore must be "planned, assessed and reviewed in the context of the whole system in order to ensure circuit reliability, safety and grid stability."[20]

Accordingly, the commission hereby approves the stipulation, subject to the following conditions and clarifications:

- The commission recognizes that the system-wide cap is established in the Net Energy Metering Law. However, pursuant to its authority granted in HRS § 269-102, the commission approves the adoption of essentially unlimited (or 100%) system-wide limits when the per-circuit caps are in effect.

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[18]Id. at 8.

[19]Id.

[20]Id. at 7 (citation omitted).

- The approval of the HECO Companies' stipulation does not modify or consolidate any of the existing reporting requirements associated with NEM.[21]

- With respect to system reliability, the commission's approval of the stipulation is based on the HECO Companies' support provided therein. The responsibility for assuring system reliability remains with the HECO Companies.

- According to HRS § 269-102: "the public utilities commission shall ensure that a percentage of the total rated generating capacity produced by eligible customer-generators shall be reserved for electricity produced by eligible residential or small commercial customer-generators." The HECO Companies must file a plan, within thirty days of the date of this Order, describing how this requirement should be fulfilled in light of the transition from system-wide to per-circuit DG limits.

- With respect to implementation, with the 15% per-circuit cap in place, the commission expects the HECO Companies to remove the system-wide caps without waiting for final approval of reliability standards in the FIT docket. The HECO Companies shall report to the commission if such an implementation schedule compromises system reliability, or is otherwise unfeasible.

[21] For example, NEM reporting should not be replaced by cumulative reports on DG.

C.

Proposal Regarding the HECO Companies' NEM Pilot Program

As set forth above, on March 13, 2008, the commission issued D&O No. 24089, ordering the HECO Companies to implement an NEM Pilot Program. The HECO Companies submitted their initial pilot program proposal on April 28, 2008, but after several revisions and extensions, a revised and completed proposal has not yet been filed.

By letter filed on December 18, 2009, the HECO Companies, the Consumer Advocate, HREA, and HSEA informed the commission that the NEM Pilot Program was no longer necessary.[22] These parties suggested that the pilot program would produce the same information that is expected to be obtained from studies in the FIT docket and other proceedings. The commission was asked to accept the results from these other studies, in lieu of proceeding with the NEM Pilot Program.

Upon review, the commission denies the request in the December 18, 2009 letter, and instructs the HECO Companies and other parties to proceed with development of the NEM pilot program on an expedited basis. The commission is not persuaded that the FIT docket studies will be an adequate replacement for the NEM Pilot Program. In the FIT docket, the HECO Companies have sought to defer the interconnection of any intermittent renewables on the MECO and HELCO grids due to the unknown impact

[22] See Status of Proposed Net Energy Metering Pilot Program, filed on December 18, 2009, by the HECO Companies, the Consumer Advocate, HREA, and HSEA, at 1.

of renewables on system reliability,[23] yet these issues may have been resolved earlier through timely implementation of the NEM Pilot Program. The terms and conditions for NEM are established and the pilot program offers a real-world resource available now for evaluating the HECO Companies' reliability concerns. The commission's Decision and Order issued on September 25, 2009 in the FIT docket specified that the NEM and FIT programs will continue to coexist due to the different types of customer-generators that each program benefits.[24]

The commission accordingly denies the request to forego development of the NEM Pilot Program for the HECO Companies and orders its development on an expedited basis, in adherence to the following:

- The HECO Companies must file a revised pilot program proposal within thirty days of the date of this Order, incorporating suggested revisions from the Parties that the HECO Companies believe are appropriate. The revised pilot program proposal shall take effect upon review and approval by the commission.

- The Parties will have ten days to file defined changes to the HECO Companies' revised proposal, with citations as to where the changes should be incorporated in the document.

- The HECO Companies must file a report, within thirty days of the date of this Order, detailing the extramural funding they have received, and their

[23]HECO Companies' Report on Reliability Standards, filed on February 8, 2010, in Docket No. 2008-0273, Exhibit 1 at 4.

[24]See Decision and Order, filed on September 25, 2009, in Docket No. 2008-0273, at 20.

opportunities for additional funding to examine the technical aspects of larger DG penetration on utility distribution circuits, as noted in their November 13, 2009 letter to the commission.[25] The report should detail the amounts and sources of funding, scopes and timeframes for studies, and a summary of what has been completed and learned from the studies at this point that relates to the NEM Pilot Program objectives. Additionally, the report should identify whether the funding may be applicable to the development of the NEM Pilot Program.[26] Furthermore, the HECO Companies shall include in this report details of what, if any, actions they have taken to date with respect to preparing for and developing the NEM Pilot Program, including the identification of any potential participants that they have contacted and the status of prospective participants.

- Commencing after the approval of a NEM Pilot Program by the commission, the HECO Companies must report monthly on progress achieved with the NEM Pilot Program during the prior month, until further notice by the commission.

D.

Stipulation Regarding KIUC's Proposed
NEM Pilot Program and Alternative Rate Structure

On October 15, 2009, KIUC, the Consumer Advocate, HREA, and HSEA filed a stipulated proposal for KIUC's NEM Pilot Program. The significant components of the proposal include:

[25]See HECO Companies' Proposed NEM Pilot Program Update, filed on November 13, 2009, at 1.

[26]This report may be submitted in conjunction with the report required by Section II.B. of this Order.

- Paying the NEM Pilot Program participant a fixed $0.20 per kWh rate for excess energy that will apply for the 20 year term of the agreement, in lieu of the existing NEM compensation structure;

- Operating the NEM Pilot Program on a first-come, first-served basis for three years, or until certain capacity limits are reached;

- Expanding the NEM Pilot Program from the 50 kW to 200 kW range, as ordered by the commission, by also including some smaller facilities of less than 50 kW in size;[27]

- Allowing for up to two megawatts ("MW") of alternating current ("AC") generation capacity from 50 kW to 200 kW facilities in the aggregate under the program; and

- Allowing for up to one MW of AC generation capacity in the aggregate from facilities smaller than 50 kW, with 50% of the 1 MW going to participants of 10 kW to 50 kW in size and 50% going to participants less than 10 kW in size.

Upon review, the commission finds that KIUC's proposed NEM Pilot Program conforms to the parameters in D&O No. 24089, and should aid KIUC in evaluating the economic and reliability impacts of including larger as-available generating units on KIUC's system. KIUC, the Consumer Advocate, HREA, and HSEA agree that the $0.20 per kWh rate is sufficient compensation for participants in the program and that, with the proposed capacity limits, the pilot program should not have a significant adverse

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[27]In the stipulating parties view, inclusion of smaller units will allow for a more comprehensive analysis of the impacts of the pilot program. See Stipulated Proposed NEM Pilot Program and Alternative Rate Structure for KIUC, filed on October 15, 2009, at 4.

effect on non-participant ratepayers. The commission finds this support for the program reasonable and approves KIUC's proposed NEM Pilot Program.[28]

E.

Stipulation on HECO's NEM System Cap

On August 24, 2010, HECO and the Consumer Advocate filed a stipulation, seeking to increase the 1% NEM system cap on Oahu to 2%. In general, the remaining elements of the NEM program (e.g., allocations of capacity between large and small customers) remain the same under the August 24, 2010 proposal. The stipulation states that HECO expects NEM customer requests to reach or exceed the existing 1% system cap by year end 2010. In addition, the stipulation notes the parties' previously filed stipulation on January 7, 2010 to remove the NEM system caps, with the adoption of certain modifications to Rule 14H and the establishment of appropriate reliability standards.

The commission herein has approved the January 7, 2010 stipulation to remove the HECO Companies' system caps, which will meet HECO's need for a higher NEM capacity allowance in the near term, and will eliminate the need for subsequent stipulations to increase the system cap. With the approved removal of the system

[28]However, new customers eligible under KIUC's existing NEM program must still have the option of participating in the existing program. The stipulated NEM Pilot Program approved herein represents another option and does not replace the existing program for customers under 50 kW in size.

caps, the commission dismisses the stipulation on HECO's NEM System Cap, filed on August 24, 2010, as moot.

III.

Orders

THE COMMISSION ORDERS:

1. The Proposed Plan to Address NEM, filed on August 14, 2009, is approved.

2. The Stipulation on the HECO Companies' NEM System Cap, filed on January 7, 2010, is approved with conditions, as specified in this Order.

3. The request to forego completion of the NEM Pilot Program for the HECO Companies, filed on December 18, 2009, is denied and the HECO Companies are ordered to continue development of the pilot program in accordance with this Order.

4. KIUC's NEM Pilot Program and Alternative Rate Structure Proposal, filed on October 15, 2009, is approved.

5. The stipulation on HECO's NEM System Cap, filed on August 24, 2010, is dismissed as moot.

DONE at Honolulu, Hawaii JAN 13 2011.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By Carlito P. Caliboso
Carlito P. Caliboso, Chairman

By John E. Cole
John E. Cole, Commissioner

APPROVED AS TO FORM:

Kaiulani Kidani Shinsato
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2006-0084.cp

CERTIFICATE OF SERVICE

The foregoing order was served on the date of filing by mail, postage prepaid, and properly addressed to the following parties:

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