

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

----- In the Matter of -----)
)
PUBLIC UTILITIES COMMISSION)
)
Instituting a Proceeding to)
Investigate the Implementation)
Of Feed-in Tariffs.)
_____)

DOCKET NO. 2008-0273

DECISION AND ORDER

FILED

2009 SEP 25 P 4: 28

PUBLIC UTILITIES
COMMISSION

TABLE OF CONTENTS

I.	PROCEDURAL BACKGROUND	2
A.	Initiation of the Docket	2
B.	Intervention	3
C.	Procedural Order	4
D.	Discovery	6
E.	Panel Hearing	9
II.	DISCUSSION	12
A.	FITs as a Procurement Mechanism	12
1.	Role of FITs	12
2.	Role of Other Methodologies	17
a.	Net Energy Metering ("NEM")	18
b.	Competitive Bidding	22
c.	Negotiated Power Purchase Agreements	24
d.	Schedule Q	27
e.	Public Utility Regulatory Policies Act of 1978 ("PURPA") Avoided Cost Offerings	29
B.	Eligibility	29
1.	Technology	29
a.	Projects Eligible For Technology-Specific Rates - PV, Onshore Wind, In-Line Hydropower, CSP	31
b.	Ineligible for Technology-Specific Rates But Eligible For "Baseline" Rates	32
1.	Ineligible Technologies	32
a.	Biomass and Biogas Projects	32
b.	Geothermal Projects	33
c.	Biofuel Projects	34
d.	Wave Energy, Ocean Thermal, Tidal Power, and Offshore Wind Projects	34
e.	Hybrid Projects	35
f.	Ancillary Services or Storage	36
2.	Baseline FIT	36
2.	Size	37
a.	Parties' Positions	37
b.	Size Limits	40
c.	Reliability	47
3.	System Cap	52
4.	Other Eligibility Issues	58
a.	Projects Owned By Utility Affiliates	58
b.	Incremental Additions To Existing Projects	59
C.	Rates	60
1.	Rate Components	60
a.	Project Costs	60
b.	Interconnection Costs	63
c.	Curtailement	70
d.	Residual Value	71
e.	Renewable Energy Credits ("RECs")	72
f.	Rate of Return	73
2.	Rate Structure	75
a.	Levelized Rates	75

b.	Technology and Size-Differentiated Rates	78
c.	Location-Differentiated Rates	79
d.	Time-Differentiated Rates	80
e.	Adjustments for System Benefits or Lack Thereof	81
3.	Process for Determining Rates.....	83
D.	Non-Rate Terms and Conditions	85
1.	Term	85
2.	Legal Obligation to Sell Energy.....	85
3.	Standard Offer Contracts.....	87
4.	Information Filing Requirements.....	88
a.	Utility	88
b.	FIT Project Owner	89
5.	Rights and Obligations Following the FIT Term	90
E.	Queuing and Interconnection	92
F.	Utility Financial Issues	94
G.	Compensation for Curtailment of Existing Projects	97
H.	Periodic Reexaminations	98
III.	SUBSEQUENT TARIFF PROCEEDING	100
IV.	ORDER	101

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DECISION AND ORDER

By this Decision and Order, the commission sets forth general principles for the implementation of feed-in-tariffs ("FITs") in the service territories of HAWAIIAN ELECTRIC COMPANY, INC. ("HECO"), HAWAII ELECTRIC LIGHT COMPANY, INC. ("HELCO"), and MAUI ELECTRIC COMPANY, LTD. ("MECO") (collectively, the "HECO Companies"), as set forth below.

Specifically, to reduce the State's fossil fuel dependence and accelerate the acquisition of renewable energy, the commission approves FITs as a mechanism for the procurement of renewable resources in the HECO Companies' service territories. For the initial FIT, there will be rates for photovoltaic ("PV"), concentrated solar power ("CSP"), onshore wind, and in-line hydropower projects up to 5 MW depending on technology and location. There will also be a "baseline" FIT rate to encourage other renewable energy technologies. Net energy metering ("NEM"), competitive bidding, negotiated power purchase agreements ("PPAs"), Schedule Q, and avoided cost offerings will continue to exist as additional and complementary

mechanisms to provide multiple avenues for the procurement of renewable energy.

FIT rates will be based on the project cost and reasonable profit of a typical project. The rates will be differentiated by technology or resource, size, and interconnection costs; and will be levelized. The FIT program will be reexamined two years after it first becomes effective and every three years thereafter.

FIT tariffs, which will include specific FIT rates, shall be filed with commission in the next phase of this proceeding.

I.

PROCEDURAL BACKGROUND

A.

Initiation of the Docket

By Order Initiating Investigation, filed on October 24, 2008, the commission opened this docket to examine the implementation of FITs in the HECO Companies' service territories. In the order, the commission acknowledged that:

On October 20, 2008, the Governor of the State of Hawaii, the State of Hawaii Department of Business, Economic Development and Tourism, the State of Hawaii Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("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." A product of the Hawaii Clean Energy Initiative, the 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; to transition the HECO Companies away from a model that encourages increased electricity usage; and to provide measures to assist consumers in reducing their electricity bills.

Included in the Agreement is a commitment by the HECO Companies to implement feed-in tariffs "to dramatically accelerate the addition of renewable energy from new sources" and to "encourage increased development of alternative energy projects."¹

In the Order Initiating Investigation, the commission stated that "[a]ny interested individual, entity, agency, or community or business organization may file a motion to intervene or participate without intervention in this docket."² In that order, the commission also directed the parties to file a stipulated procedural order setting forth the issues, procedures, and schedule to govern this proceeding.

B.

Intervention

Motions to intervene were filed by 1) the Department of Business, Economic Development, and Tourism ("DBEDT"); 2) the City and County of Honolulu ("CCH"); 3) the County of Hawaii

¹Order Initiating Investigation, at 1-2. The Agreement refers to the Energy Agreement Among the State of Hawaii, Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs, and the Hawaiian Electric Companies ("Energy Agreement"). It arose from a Memorandum of Understanding between the State of Hawaii and the U.S. Department of Energy to establish a partnership, called the Hawaii Clean Energy Initiative, which aims to have 70% of all of Hawaii's energy needs generated by renewable energy sources by 2030. Order Initiating Investigation, at 2 n.3.

²Order Initiating Investigation, at 6.

("COH"); 4) Life of the Land ("LOL"); 5) Haiku Design and Analysis ("HDA"); 6) Hawaii Renewable Energy Alliance ("HREA"); 7) Blue Planet Foundation ("Blue Planet"); 8) Hawaii Solar Energy Association ("HSEA"); 9) The Solar Alliance ("SA"); 10) Hawaii Bioenergy, LLC ("HBE"); 11) Sempra Generation ("Sempra"); 12) Maui Land & Pineapple Company, Inc. ("MLP"); 13) Zero Emissions Leasing LLC ("Zero Emissions"); 14) Sopogy Inc. ("Sopogy"); 15) Hawaii Holdings, LLC, doing business as First Wind Hawaii ("First Wind"); 16) Clean Energy Maui LLC ("CEM"); 17) Tawhiri Power LLC ("Tawhiri"); and 18) Alexander & Baldwin, Inc. through its division, Hawaiian Commercial & Sugar Company ("HC&S") (collectively, "Intervenors"). The motions to intervene were approved by Order Granting Intervention, filed on November 28, 2008.

C.

Procedural Order

Thereafter, on January 20, 2009, the commission approved, with modifications, the proposed Stipulated Procedural Order submitted on December 22, 2008, by the HECO Companies, the DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, DIVISION OF CONSUMER ADVOCACY ("Consumer Advocate"), DBEDT, CCH, COH, Sempra, and First Wind. The commission, however, modified the Statement of Issues, and adopted the Regulatory Schedule proposed by HDA with certain modifications.³

³Order Approving the HECO Companies' Proposed Procedural Order, as Modified, filed on January 20, 2009 ("Procedural Order").

The Statement of Issues approved by the commission was as follows:

I. STATEMENT OF ISSUES

Purpose of Project-Based Feed-In Tariffs (PBFiTs)

1. What, if any, purpose do PBFiTs play in meeting Hawaii's clean energy and energy independence goals, given Hawaii's existing renewable energy purchase requirements by utilities?
2. What are the potential benefits and adverse consequences of PBFiTs for the utilities, ratepayers and the State of Hawaii?
3. Why is or is not the PBFiT the superior methodology to meet Hawaii's clean energy and energy independence goals?

Legal Issues

4. What, if any, modifications are prudent or necessary to existing federal or state laws, rules, regulations or other requirements to remove any barriers or to facilitate the implementation of a feed-in tariff not based on avoided costs?
5. What evidence must the commission consider in establishing a feed-in tariff and has that evidence been presented in this investigation?

Role of Other Methodologies

6. What role do other methodologies for the utility to acquire renewable energy play with and without a PBFiT, including but not limited to power purchase contracts, competitive bidding, avoided cost offerings and net energy metering?

Best design for a PBFiT or alternative method

7. What is the best design, including the cost basis, for PBFiTs or other alternative feed-in tariffs to accelerate and increase the development of Hawaii's renewable energy resources and their integration in the utility system?

Eligibility Requirements

8. What renewable energy projects should be eligible for which renewable electricity purchase methods or individual tariffs and when?

Analysis of the cost to consumers and appropriateness of caps

9. What is the cost to consumers and others of the proposed feed-in tariffs?
10. Should the commission impose caps based upon these financial effects, technical limitations or other reasons on the total amount purchased through any mechanism or tariff?

Procedural Issues

11. What process should the commission implement for evaluating, determining and updating renewable energy purchased power mechanisms or tariffs?
12. What are the administrative impacts to the commission and the parties of the proposed approach?

D.

Discovery

In its Order Initiating Investigation, the commission stated that it would be issuing a "scoping paper on feed-in tariffs."⁴ Consistent with the order, on December 11, 2008, the commission provided a paper titled "Feed-In Tariffs: Best Design Focusing Hawaii's Investigation" which was developed by the commission's consultant, the National Regulatory Research Institute ("NRRI Paper"). The commission directed that, any written comments on the NRRI Paper should be provided to the commission within twenty days of the date of the letter, and further directed that the parties respond to the questions in Appendices A and C within forty-five days of the date of the

⁴Order Initiating Investigation, at 4, 8.

letter, and within thirty days for the threshold legal questions in Appendix A.⁵

Also, in the Order Initiating Investigation, the commission "direct[ed] the HECO Companies and the Consumer Advocate to submit to the commission a joint proposal on feed-in tariffs that addresses all of the factors identified in their Agreement within sixty days of the date of this Order."⁶ The Joint Proposal on Feed-in Tariffs of the HECO Companies and the Consumer Advocate was filed on December 23, 2008 ("HECO/CA Joint Proposal").

Comments on the NRRI Paper were filed by HDA on December 23, 2008; Blue Planet, SA, HC&S, HBE, MLP, and Tawhiri on December 31, 2008; and HSEA and CEM on January 2, 2009.⁷

Responses to the threshold legal questions set forth in Appendix C of the NRRI Paper were filed on January 8, 2009 by HDA⁸; and on January 12, 2009 by DBEDT,⁹ HBE, MLP, First Wind,

⁵Letter dated and filed December 11, 2008, from the commission to the Service List.

⁶Order Initiating Investigation, at 4, 8.

⁷By letter dated December 31, 2008, the HECO Companies and the Consumer Advocate informed the commission that, given their filing of the HECO/CA Joint Proposal, they did not intend to file comments on the NRRI Paper. Also, by separate letters dated December 31, 2008, the Consumer Advocate and DBEDT informed the commission that they had no comments on the NRRI Paper.

⁸HREA joined in HDA's responses. See Hawaii Renewable Energy Alliance's Joinder to Haiku Design and Analysis's Response to Threshold Legal Questions in Appendix C of the National Regulatory Research Institute Scoping Paper filed on January 8, 2009, filed on January 12, 2009

⁹COH joined in DBEDT's responses. See Letter from William Brilhante Jr. to the commission, filed January 12, 2009.

LOL, Blue Planet, Tawhiri, Zero Emissions, SA, HC&S, the HECO Companies and Consumer Advocate, Sempra, and the CCH.

Responses to the non-legal questions in NRRI's Paper were filed by LOL, COH, First Wind, Zero Emissions, DBEDT, HSEA, HBE, MLP, Blue Planet, Tawhiri, Sopogy, SA, HC&S, HREA, the HECO Companies and Consumer Advocate, on January 26, 2009; and CCH on January 27, 2009.¹⁰

Pursuant to the Regulatory Schedule approved by the commission, information requests ("IRs") on the HECO/CA Joint Proposal were issued on January 28, 2009, by HREA, HDA, HC&S, SA, HBE, Tawhiri, DBEDT, HSEA, and CCH. Responses were filed by the Consumer Advocate and the HECO Companies on February 11, 2009.

Opening statements of position were filed by HDA, Zero Emissions, CEM, HBE, Sempra, First Wind, DBEDT,¹¹ Sopogy, Tawhiri, Blue Planet, HSEA, the HECO Companies and Consumer Advocate, HREA, HC&S, SA, and CCH on February 25, 2009.¹²

By letters dated March 2, 2009 and March 16, 2009, the commission issued IRs prepared by its consultant, NRRI. Zero Emissions, HC&S, SA, DBEDT, Tawhiri, Blue Planet, HREA, and the HECO Companies served IRs on various parties on March 4, 2009.

¹⁰By letter dated January 24, 2009, filed January 26, 2009, HDA informed the commission that it lacked specific cost information and would not be able to respond to the non-legal questions in Appendices A and C of the NRRI Paper.

¹¹By letter dated February 26, 2009 and filed February 27, 2009, COM stated that it was joining in DBEDT's opening statement of position.

¹²LOL filed a Tariff Sheet on February 25, 2009.

Responses to the IRs were filed by the parties between March 13, 2009 and April 1, 2009.

Consistent with the Regulatory Schedule approved by the commission, final statements of position were filed by Sempra, CEM, HDA, Zero Emissions, Blue Planet, LOL, Tawhiri, DBEDT, Sopogy, SA and HSEA, HC&S, CCH, the HECO Companies and Consumer Advocate, First Wind and HREA on March 30, 2009.

E.

Panel Hearing

On March 27, 2009, the commission issued a Notice of Panel Hearing and Prehearing Conference informing the parties that a panel hearing would be held on April 13, 2009 - April 17, 2009, at 9:00 a.m., at Honolulu Country Club, 1690 Ala Puumalu Street, Honolulu, HI 96818-1599; and that a prehearing conference would be held on April 6, 2009, at 9:30 a.m., at the commission's hearing room.

On April 1, 2009, the commission issued its Order Establishing Hearing Procedures setting forth the procedures to govern the panel hearing. In the order, the commission stated that the hearing would consist of eight distinct panels representing the major subject areas requiring commission decisions:

- I. Given the four existing renewable producer options (Schedule Q, net metering, competitive bid, and non-bid PPAs), what contribution would FiTs make toward achieving Hawaii's renewable energy goals?
- II. What are the physical limitations on the utility's ability to purchase renewables?

- III. What are the appropriate criteria for eligibility to sell under FiT tariffs?
- IV. What decisions are necessary to ensure that FiT rates are just and reasonable, as required by Hawaii law?
- V. What non-rate terms are necessary to make FiTs just and reasonable?
- VI. Utility cost recovery: What principles should apply?
- VII. What are the appropriate processes for accepting and interconnecting FiT projects?
- VIII. If the commission does approve FiTs, what actions can it take to keep total costs reasonable?

To assist the parties' preparation for the hearing, the commission identified the decisions the commission must make once the record closes for each of the eight panels; identified questions whose answers will help the commission make those decisions; and included them in the Order Establishing Hearing Procedures.

Commencing on April 13, 2009, and ending on April 17, 2009, the commission held a panel-format evidentiary hearing, with Mr. Scott Hempling, Esq. moderating,¹³ and Chairman Carlito P. Caliboso presiding with Commissioners John E. Cole and Leslie H. Kondo.¹⁴ Blue Planet, CEM, the Consumer Advocate, DBEDT, HDA, HC&S, the HECO Companies, HREA, HSEA, LOL, SA,

¹³The commission retained Mr. Hempling, Executive Director of NRRI, as moderator for the panel hearing.

¹⁴Citations to the transcript of the April 13, 2009 to April 17, 2009 panel hearing are as follows: Transcript of Proceedings ("Tr."), followed by the applicable volume number ("Vol. ___") and page number(s), followed by the last name of the individual in parentheses. For example, "Tr. Vol. I at 34 (Hempling)."

Sopogy, Tawhiri, and Zero Emissions participated in the panel hearing.¹⁵

On June 12, 2009, HDA, LOL, Blue Planet, Zero Emissions, SA and HSEA, Sopogy, HREA, the HECO Companies and Consumer Advocate, Tawhiri, and DBEDT filed their post-hearing opening briefs.¹⁶ On June 26, 2009, HDA, LOL, Zero Emissions and CEM, DBEDT, Tawhiri, Blue Planet, HREA, SA and HSEA, Sopogy, and the HECO Companies and Consumer Advocate, filed post-hearing reply briefs.

¹⁵Prior to the panel hearings, MLP, HBE, COH and CCH filed separate motions to amend their status from intervenors to participants, which the commission granted. See, e.g., Order Granting Maui Land & Pineapple Company, Inc.'s Motion For Approval to Amend its Status as an Intervenor/Party to a Participant, filed on April 1, 2009; Order Granting Hawaii Bioenergy, LLC's Motion For Approval to Amend its Status as an Intervenor/Party to a Participant, filed on April 9, 2009.

The commission also sua sponte amended First Wind and Sempra's status from intervenors to participants. See Order Granting the County of Hawaii's Motion for Approval to Amend its Status as an Intervenor to a Participant, Filed on April 8, 2009; Granting the City and County of Honolulu's Motion for Approval to Amend its Status as an Intervenor to a Participant, Filed on April 8, 2009; Amending Hawaii Holdings, LLC, doing business as First Wind Hawaii and Sempra Generation's Status As Intervenor to Participants; and Amending the Procedural Schedule, filed on April 27, 2009.

Thereafter, on May 26, 2009, the commission filed an Order Granting Alexander & Baldwin, Inc. through its division Hawaiian Commercial & Sugar Company's Motion to Amend its Status as an Intervenor to a Participant, Filed on May 8, 2009, filed on May 26, 2009.

As a result, the current parties to this docket are Blue Planet, CEM, the Consumer Advocate, DBEDT, HDA, the HECO Companies, HREA, HSEA, LOL, SA, Sopogy, Tawhiri, and Zero Emissions (collectively, "Parties") The participants are MLP, HBE, COH, CCH, First Wind, Sempra, and HC&S (collectively, "Participants").

¹⁶CEM untimely filed its post-hearing opening brief on June 17, 2009.

II.

DISCUSSION

A.

FITs as a Procurement Mechanism

1.

Role of FITs

Section 269-27.2(b) of the Hawaii Revised Statutes ("HRS") states, in relevant part:

- (b) The public utilities commission may direct public utilities that supply electricity to the public to arrange for the acquisition of and to acquire electricity generated from nonfossil fuel sources as is available from and which the producers of same are willing and able to make available to the public utilities, and to employ and dispatch the nonfossil fuel generated electricity in a manner consistent with the availability thereof to maximize the reduction in consumption of fossil fuels in the generation of electricity to be provided to the public .
 . . .

HRS § 269-27.2(b). Thus, section 269-27.2(b) allows the commission to direct the HECO Companies to acquire electricity generated from renewable sources "to maximize the reduction in consumption of fossil fuels in the generation of electricity to be provided to the public."¹⁷

The commission opened this docket in November 2008 to determine whether to implement feed-in-tariffs or FITs in the HECO Companies' service territories. In doing so, the commission acknowledged that FITs, which are a "set of standardized,

¹⁷HRS § 269-27.2(b). Pursuant to HRS §§ 269-6, 269-7, the commission also has general supervisory and investigatory powers over all public utilities.

published purchased power rates, including terms and conditions, which the utility will pay for each type of renewable energy resource based on project size fed to the grid,"¹⁸ were a possible mechanism "to dramatically accelerate the addition of renewable energy from new sources" and to "encourage increased development of alternative energy projects."¹⁹

As articulated by DBEDT in its opening brief, a FIT is needed for the following reasons:

- The State of Hawaii is heavily dependent on imported fossil fuel for its electricity generation.
- Despite an abundance of renewable resources, the State relies on imported fossil fuels for 90% of its electric generation.
- "On Oahu, which accounts for approximately 80% of the total kilowatt-hour sales of the HECO Companies, only 4% of HECO's sales (Oahu) were supplied by renewable energy, and 96% were supplied by imported fossil fuels."²⁰
- "HECO, which serves the island of Oahu, and accounts for approximately 80% of the electricity load in the State, signed only one purchased power agreement for a renewable energy project (with a capacity of only 300 kW). This PPA was signed in November 2007 and is still not in service. HECO's only other renewable purchased power agreement is with H-POWER, and that was signed over two decades ago (in 1986)."²¹

¹⁸Order Initiating Investigation, at 2 (footnotes and text therein omitted).

¹⁹Order Initiating Investigation, at 1-2.

²⁰The Department of Business, Economic Development, and Tourism's Opening Brief, filed on June 12, 2009 ("DBEDT Opening Brief"), at 21.

²¹DBEDT Opening Brief, at 22.

- "Since the implementation of the competitive bid process in 2006, only one RFP has been issued by the HECO Companies to date, and only for Oahu. No RFPs have been issued for either HELCO or MECO."²²

According to the parties, a FIT will promote and encourage the accelerated acquisition of renewable energy in Hawaii by providing predictability and certainty with respect to the future prices to be paid for renewable energy and the terms and conditions pursuant to which the renewable energy will be provided.²³ This certainty "reduces the amount of time and money the developer and [the] HECO Companies have to spend determining price and interconnection terms and conditions of the Power Purchase Agreement. In doing so, they reduce the risk, and hence the cost, of non-utility generated power."²⁴ According to SA and HSEA:

Although the ratepayers may experience an increase in rates in the short-run, in the long run (the 20 year term of the FIT contract), the ratepayer will benefit from: (i) the utility's ability to procure power at a known cost that are [sic] derived from the cost of money in the base year and not derived from or linked to the unstable price of oil; (ii) a decrease in rates

²²DBEDT Opening Brief, at 22.

²³Opening Brief of the HECO Companies and Consumer Advocate, filed on June 12, 2009 ("HECO/CA Opening Brief"), at 9-10; DBEDT Opening Brief, at 23 ("FiTs provide a clear, transparent, and streamlined utility procurement and interconnection process, and when designed appropriately, offer a superior alternative and complementary method to the current utility procurement methods."); Solar Alliance and Hawaii Solar Energy Association's Opening Brief, filed on June 12, 2009 ("SA/HSEA Opening Brief"), at 3; Sopogy's Post-Hearing Opening Brief, filed on June 12, 2009 ("Sopogy's Opening Brief"), at 2.

²⁴SA/HSEA Opening Brief, at 3; see also DBEDT Opening Brief, at 24 ("FiTs eliminate the need for a long contracting process, which ultimately reduces the developer's and the utility's costs, benefiting the ratepayers in the long-run").

based on historical rates of utility price appreciation, that will likely be even larger in the face of factors such as the predicted increase in oil prices, the impending addition of various carbon taxation/pricing schemes; (iii) economic growth generally because the use of renewables, especially distributed PV will create an economically sustainable source of "green collar" jobs in the State of Hawaii; and economic growth due to reduced export of dollars earned in the State being exported to purchase fossil fuels.²⁵

According to DBEDT, FITs, like net energy metering, "are open to all who meet the eligibility requirements, terms, and conditions provided and specified in the FiTs tariff, which helps encourage and promote renewable energy development. FiTs create a renewable energy market environment with transparent procurement rules that are not driven or controlled by the utilities as the competitive bid process and the non-bid PPAs are."²⁶

Given Hawaii's overdependence on imported fossil fuels for its current electric generation, and the clear benefits a FIT can provide, the commission finds that a FIT should be adopted in Hawaii. There is no other state in the nation that is as dependent on oil as Hawaii is. That oil, which is the primary source of our electric generation, is imported into our State and comes from countries that may not be sympathetic to U.S. interests. A procurement mechanism, such as a FIT, may accelerate the acquisition of renewable energy onto the HECO Companies' systems thereby reducing our State's overall dependence on foreign oil; and produce some certainty as

²⁵SA/HSEA Opening Brief, at 3-4 (emphasis in original) (footnote and text therein omitted).

²⁶DBEDT Opening Brief, at 26.

the price of electricity will no longer be as heavily tied to volatile oil prices. A process that is predictable in setting forth the essential terms under which renewable energy will be purchased by the utilities will, as SA and HSEA assert, reduce "the risk, and hence the cost, of non-utility generated power" and provide economic growth through "green collar" jobs and reduced export of dollars earned to purchase fossil fuels.²⁷

Some of the intervenors point to Germany as a model of a successful FIT program in its ability to encourage the rapid adoption of renewable energy onto utility grids.²⁸ However, certain foreign FITs, specifically Germany's, were designed as economic policies to promote domestic industrial development. These foreign FITs may not have been created with the same ratepayer considerations and obligations that bind the commission to provide rates that are just and reasonable.²⁹ While the commission anticipates that a FIT may provide certain economic development benefits, the primary motivation for this policy, however, is the reduction of Hawaii's fossil fuel dependence, not promoting industrial development, which would likely be limited due to Hawaii's size and location. In addition, given Hawaii's isolated island grids, the commission must consider reliability and system stability; and given the State's high electricity rates, the commission must carefully examine ratepayer

²⁷SA/HSEA Opening Brief, at 3-4 (footnote and text therein omitted).

²⁸See, e.g., Sopogy's Opening Brief, at 2.

²⁹See HRS § 269-16.

consequences. These differences in motivations explain the more deliberate approach that the commission must take with respect to Hawaii's FIT, as compared to those taken elsewhere.

Accordingly, for the reasons stated above, the commission will direct the HECO Companies to adopt FITs in their respective service territories. The FITs should be consistent with the principles described below. Those principles are subject to review, to the extent applicable, at the first periodic examination two years from the effective date of the FIT tariffs.³⁰

2.

Role of Other Methodologies

The adoption of FITs raises the issue of the role of existing renewable procurement mechanisms, such as NEM, competitive bidding, negotiated power purchase agreements ("PPAs"),³¹ Schedule Q, and avoided cost offerings, in the procurement of renewable generation in Hawaii. In the commission's view, FITs provide an additional and complementary option to existing and future renewable resource procurement

³⁰The dissent would require no more (or perhaps even less) of the HECO Companies than what they offer. With this Decision and Order, the commission is requiring more, while still providing safeguards to ensure system reliability and to limit ratepayer impact. The FIT is but one tool to aid the State's transition to renewable energy, and much work remains to be done. It would certainly make decisions easier to have perfect evidence and a perfect record, but that is rarely the case.

³¹Note, however, that competitive bidding and negotiated PPAs are not limited solely to the procurement of renewable generation.

mechanisms, and should not result in replacement of any existing mechanisms. The commission, however, may revisit this issue in connection with the first FIT reexamination in two years.

a.

Net Energy Metering ("NEM")

With respect to NEM, the signatories to the Energy Agreement had proposed that NEM be phased out with the adoption of a FIT. Most parties to this docket object, arguing that NEM should continue to be an option for existing and future customer-generators. In SA and HSEA's view, "NEM addresses the need of many home[-]owning and business[-]owning ratepayers to manage their operating costs. FIT is a mechanism for deriving income from the production of energy. As a result, different types of customer-generators are best served by different programs and the overall market is best served by giving ratepayers access to both options."³² According to SA and HSEA:

The distinct situations of customer-generators under FIT and NEM can best be understood by noting that under current rules, net-metered customer-generators are incapable of entering the energy production business because they cannot be compensated for annual aggregate production in excess of annual aggregate usage. This clarifies that NEM is a mechanism for the customer generator to manage the operating costs of his/her home or business but precludes him/her from deriving additional financial benefit. In contrast, a customer-generator under a feed-in tariff has the option of investing in generating equipment at whatever level his/her financial resources and physical site can accommodate and entering the energy production business.

³²SA/HSEA Opening Brief, at 4.

In order to most aggressively meet the State's renewable energy goals NEM can and should be permitted to continue as "NEM + FIT." In this configuration, the option to be compensated at the FIT rate for annual excess generation will induce entities to install more renewable energy generating capacity than under either NEM or FIT alone.³³

Citing the success of NEM, DBEDT asserts that customer-generators should be allowed the following options: "(1) the option to apply for net energy metering as currently provided in Part VI of chapter 269, HRS; (2) the option to apply for FiTs for the entire output of the customer-generator; or (3) the option originally proposed in DBEDT's statement of position (i.e., excess, unused kWh compensated through the FiTs rate)."³⁴

HRS §§ 269-101 - 269-111, Hawaii's Net Energy Metering Law, allows residential and commercial customers of an electric utility who own and operate eligible renewable energy generators to use "net energy metering" to measure electricity usage for billing purposes. As defined in 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[.]"³⁵ "In essence, eligible

³³SA/HSEA Opening Brief, at 4.

³⁴DBEDT Opening Brief, at 30, 32.

³⁵HRS § 269-101.

customer-generators who use net energy metering are billed only on the net kilowatt-hours of electricity they use."³⁶

HRS § 269-108, which governs excess electricity produced by a customer-generator, states:

At the end of each monthly billing period, where the electricity generated by the eligible customer-generator during the month exceeds the electricity supplied by the electric utility during that same period, the eligible customer-generator is a net electricity producer and the electric utility shall retain any excess kilowatt-hours generated during the prior monthly billing period; provided that the excess electricity generated by the customer-generator, if any, in each monthly billing period shall be carried over to the next month as a monetary value to the credit of the eligible customer-generator, which credit may accumulate and be used to offset the compensation owed the electric utility for the eligible customer-generator's net kilowatt-hour consumption for succeeding months within each twelve-month period; provided further that the electric utility shall reconcile the eligible customer-generator's electricity production and consumption for each twelve-month period as set forth in section 269-106. The eligible customer-generator shall not be owed any compensation for excess kilowatt-hours unless the electric utility enters into a purchase agreement with the eligible customer-generator for those excess kilowatt-hours.³⁷

Here, in reviewing the applicable statutes and the parties' briefs, the commission agrees with those parties that argue that NEM should not be eliminated and, specifically, that FIT-eligible projects can still utilize NEM (so long as they are eligible).

³⁶In re Public Utilities Commission, Docket No. 2006-0084, Decision and Order No. 24089, filed on March 13, 2008, at 3-4.

³⁷HRS § 269-108.

Current NEM customers or owners of new projects that are eligible for both NEM and the FIT will receive a one-time choice to opt for either NEM or the FIT. They may apply for NEM under HRS §§ 269-101, et seq., or they may opt to sell their entire output under a FIT. In the latter case, they may sell electricity fed into the grid at FIT rates and pay retail rates for consumption of electricity provided by the HECO Companies. For the FIT projects, the meter will never run backwards, such that excess generation in one period would offset excess consumption in another. This option may require special metering equipment.

Projects utilizing NEM cannot sell excess energy production at FIT rates over a billing cycle (where the meter runs backwards when production exceeds consumption to offset periods where consumption exceeds production). Under the existing law, net energy metered generators are not currently compensated for annual excess generation, see HRS § 269-108. In some cases, certain parties have argued that it would be efficient to oversize projects in net energy metered locations if the generators were compensated for excess generation. The commission recognizes that this may be suboptimal in certain situations, but finds that allowing both NEM and the ability to sell excess generation at FIT rates provides excessive benefits to such customers at the expense of other ratepayers.

If a project owner seeks to install additional generation at the same site as an existing net energy metered project, but wishes to keep the existing project under net energy

metering and sell the additional generation via the FIT, it can meter the additional generation as a separate project under the FIT.³⁸

b.

Competitive Bidding

Through the course of this proceeding, some intervenors have been critical of the competitive bidding process, which is the required procurement method for utility acquisition of generation resources with a net output available to the utility of 1% or less of a utility's total firm capacity or with a net output of 5 MW or less (for HECO) and 2.72 MW (for HELCO and MECO), absent waiver or exemption.³⁹ DBEDT, for example, has argued that the Framework for Competitive Bidding should be modified to, among other things, require the utilities to file a procurement plan, define a timeline for the RFP process, and provide a complaint procedure.⁴⁰ HREA and other intervenors have argued that the threshold size limit on competitive bidding should be increased to 20 MW.⁴¹

³⁸See infra Section II.B.4.b

³⁹Competitive bidding is governed by the Framework for Competitive Bidding, which was adopted by the commission in Decision and Order No. 23121, filed on December 8, 2006, in Docket No. 03-0372.

⁴⁰DBEDT Opening Brief, at 37-39.

⁴¹Hawaii Renewable Energy Alliance's Post-Hearing Reply Brief ("HREA" Reply Brief), at 7 ("HREA agrees on keeping the competitive bidding framework in place, but with the caveat discussed above to increase the competitive bidding threshold to at least 20 MW"); Sopogy Opening Brief, at 8.

As with any new procurement mechanism, including a FIT, there is a learning curve, which may result in a more protracted process in the beginning and adjustment in future processes. Initiated in 2008, HECO is in the midst of its first competitive bidding process under the Competitive Bidding Framework. According to the schedule described in HECO's pending Request for Proposals ("RFP") for up to 100 MW of renewable energy on Oahu, negotiated PPAs arising from that bid process will be filed by the end of 2009.⁴²

As with any new process, while there may be room for improvement in the current Competitive Bidding Framework, this is not the proper forum to address that issue; rather the focus is the role of competitive bidding given the commission's direction to the HECO Companies to adopt a FIT. Competitive bidding has long been recognized as an effective tool in "discovering prices" and achieving "the most economical pricing for ratepayers,"⁴³ which may be helpful in setting future FIT rates. In addition, competitive bidding may protect the ratepayer by helping to ensure the procurement of generation at a competitive cost. Accordingly, the commission declines to order any modification of the Competitive Bidding Framework at this time.

⁴²See In re Public Utilities Commission, Docket No. 2007-0331 (Proposed Final Request for Proposals, filed on June 12, 2008, Exhibit A, at 13.); see also Tr. Vol. I at 36-37 (Seu).

⁴³HECO/CA Opening Brief, at 15.

C.

Negotiated Power Purchase Agreements

Another existing method for procurement of renewable energy is a negotiated PPA. DBEDT argues that FITs should replace "non-bid purchase power contracting for the procurement of FiTs-eligible renewable resources with capacity size of less than the minimum capacity threshold required under competitive bidding."⁴⁴ In contrast, the HECO Companies and Consumer Advocate assert that "bilateral negotiations between the utilities and any renewable resource developer continue to be an option, in particular to address those projects or situations which may not be easily addressed through the utilities' other procurement programs and options."⁴⁵

As with other existing procurement mechanisms, the commission will allow bilateral negotiations to remain an option. Given the aggressive energy goals articulated by the parties, and the newness of FIT implementation, it is preferable to provide developers with more options rather than less. If the commission precludes the bilateral negotiation option for FIT-eligible projects, it could potentially eliminate a project that provides benefits to the system, but for which the FIT may not be able to accommodate the necessary financial requirements or terms and conditions. For instance, certain projects could provide system benefits but have high interconnection costs that render FIT rates insufficient. However, as noted by the HECO Companies

⁴⁴DBEDT Opening Brief, at 39.

⁴⁵HECO/CA Opening Brief, at 13.

and Consumer Advocate, "projects which qualify for the FIT should not be allowed to utilize the bilateral negotiation option to gain an unfair advantage over those projects which elect the FIT option" so the utility is under "no obligation to offer a project which is eligible for the FIT the same pricing, terms or conditions that are available under the [] FIT, through the bilateral negotiation process" and "a project otherwise eligible for the FIT should not be allowed to achieve a better position in the procurement queue as a result of the bilateral negotiation process . . . [and] should retain the position assigned to such a resource pursuant to the queuing guidelines approved as a part of this proceeding."⁴⁶

With respect to existing negotiated PPAs, DBEDT argues that a FIT-eligible project with an existing PPA should be allowed to opt-in to a FIT if it can show that "first, the existing PPA [] meets the eligibility requirements of the FiTs tariff; second, that the existing PPA rates are based on the utility's avoided cost which is based on the fossil fuel prices; third, that the existing PPA transitioning to FiTs does not result in a significant rate increase impact on the ratepayers."⁴⁷ The commission disagrees.

⁴⁶HECCO/CA Opening Brief, at 14.

⁴⁷DBEDT Opening Brief, at 40; see also Opening Brief and Proposal for Feed-in Tariff of Zero Emissions Leasing LLC, filed on June 12, 2009 ("Zero Emissions Opening Brief"), at 29 ("negotiated PPA projects using renewable energy technologies otherwise eligible for the FiT should be eligible for the FiT if the Commission concludes that the cost to ratepayers of renewable energy from such projects under the FiT over the next 20 years is likely to be no more than the cost to ratepayers of such energy under . . . the existing PPAs over the next 20 years");

A renewable resource under an existing PPA should not be allowed to convert to a FIT. Given the purpose of FITs, which is to hasten the acquisition of renewable energy, the commission finds that existing projects with negotiated PPAs are not eligible to convert to FIT rates. The FIT aims to stimulate the development of new renewable energy projects; an objective not accomplished by providing FIT rates to existing projects. The commission recognizes the value of moving away from fossil fuel-based avoided cost rates. However, without the ability to compel all projects receiving avoided cost rates to convert to FIT rates, the commission can not fully accomplish this goal. Only projects that anticipate higher revenues through the FIT would likely convert to the FIT, increasing ratepayer costs without fully delinking electricity rates from fossil fuel prices.

Additionally, in allowing such conversion, the commission would need to further complicate the FIT by deciding how the rates and terms might differ for existing projects. The commission, moreover, has no authority to relieve parties to existing contracts of their contractual obligations. If parties mutually consent to a contract revision they may bring the revised contract to the commission for approval.

d.

Schedule Q

Schedule Q applies to power purchases from small qualifying facilities with a capacity of 100 kW or less. Most parties argue that FITs should replace Schedule Q.⁴⁸ According to the HECO Companies and the Consumer Advocate, "[o]nce a FIT is available, no new applications for Schedule Q contracts should be accepted" and "[e]xisting Schedule Q generators would have the option of opting to the Proposed FIT or staying under the existing contractual arrangements through the terms of their agreement."⁴⁹ There is disagreement, however, as to whether the Schedule Q generator should be entitled to the FIT rate or some discounted rate. The HECO Companies argue that "existing Schedule Q generators should be aware that the rate they will receive under the FIT may be discounted from the rate offered to attract a new renewable resource, given that an existing generator will have different costs compared to a new resource."⁵⁰ In contrast, DBEDT argues that the rate impact

⁴⁸Hawaii Renewable Energy Alliance's Post-Hearing Opening Brief, filed on June 12, 2009 ("HREA's Opening Brief"), at 1 ("HREA strongly supports discontinuation of Schedule Q contracts in favor of FiTs"); DBEDT's Opening Brief, at 27 ("DBEDT recommends that FiTs replace the HECO Companies' future procurements from small qualifying facilities currently acquired through Schedule Q for those renewable resources or technologies that qualify or are covered under FiTs"); Sopogy Opening Brief, at 7 ("As Hawaii's policy is to now de-link the purchase of renewable energy from the price of fossil fuel (i.e., avoided cost), the preferred policy option would be to convert Schedule Qs to FiTs for qualifying technologies.").

⁴⁹HECO/CA Opening Brief, at 12.

⁵⁰HECO/CA Opening Brief, at 13.

of providing the existing Schedule Q generators with the option to transition to FIT is negligible.⁵¹ HREA further argues that "since our state policy is now to de-link our purchases of renewable energy from the price of fossil fuel, i.e., avoided cost, the preferred policy option would be to convert Schedule Qs to FiTs."⁵²

As with negotiated PPAs, the commission finds that new projects will have both FIT and Schedule Q as options. In addition, existing projects with Schedule Q contracts will not be eligible to convert to FIT rates. As discussed above, the FIT aims to stimulate the development of new renewable energy projects; an objective not accomplished by providing FIT rates to existing projects. As noted by DBEDT, there are only five existing Schedule Q contracts and they are all located on the Island of Hawaii.⁵³ Given their small number and cumulative size, existing Schedule Q contracts have little impact, but raise similar issues to negotiated PPAs over whether the terms and rates for existing and new projects should be the same given that existing projects have already recovered some of their costs. To be consistent with negotiated PPAs, which cover larger projects, Schedule Q contracts may not convert to FIT rates. In the commission's view, as with negotiated PPAs, the optional

⁵¹DBEDT Opening Brief, at 27-29; HREA Reply Brief, at 6 ("given the small number of Qs, we do not agree on the need to discount the FiT rate").

⁵²HREA Opening Brief, at 1 ("HREA also support[s] offering existing Schedule Q suppliers the option of converting to a FiT.").

⁵³DBEDT Opening Brief, at 28.

transition would provide very limited benefit for ratepayers, as producers would de-link their rates from fossil fuel only if they concluded that they would likely receive higher revenues as FIT projects. This would cost ratepayers more without increasing the amount of renewable energy.

e.

Public Utility Regulatory Policies
Act of 1978 ("PURPA") Avoided Cost Offerings

With respect to PURPA qualified facilities, if they are eligible, new projects can continue to apply for avoided cost rates based on their rights under PURPA. Thus, Schedule Q contracts and avoided-cost PPAs are still available for projects that meet the PURPA standards for qualifying facilities.⁵⁴ Once a project has elected to utilize the FIT, however, it is bound by FIT prices and obligations until the termination of the FIT term.

B.

Eligibility

1.

Technology

The State's Renewable Portfolio Standards ("RPS") law defines renewable energy as energy generated or produced from the following sources: wind, sun, falling water, biogas (including landfill and sewage-based digester gas), geothermal, ocean water, currents, and waves, including ocean thermal energy conversion; biomass (including biomass crops, agricultural and animal

⁵⁴See HAR § 6-74-1, et seq.

residues and wastes, and municipal solid waste and other solid waste), biofuels, and hydrogen produced from renewable resources.⁵⁵ Within each of these listed technologies or resources, there may be subsets such as onshore wind versus offshore wind and biomass from varying feedstocks.⁵⁶ A residential rooftop solar PV installation, for example, has a different cost structure than a large-scale solar PV installation.⁵⁷

In determining the technologies eligible for the initial FIT, several parties recommended that the commission select technologies that are "commercially viable," which they defined as biomass and biogas, geothermal, landfill gas or sewage treatment plant gas, hydropower, PV, CSP, and onshore and offshore wind.⁵⁸ DBEDT argued that "all proven, commercially available and RPS-eligible renewable generation resources and technologies which have relatively established operational experience in the HECO Companies' service territories," should be eligible for the initial FIT, which DBEDT defined as wind, solar (PV and CSP), hydropower, biomass, biogas and geothermal.⁵⁹

In contrast, the HECO Companies and the Consumer Advocate assert that the "FIT should target those technologies

⁵⁵HRS § 269-91, as amended by Act 155, Session Laws of Hawaii (2009).

⁵⁶NRRI Paper, at 6.

⁵⁷NRRI Paper, at 6.

⁵⁸See, e.g., Blue Planet Opening Brief, at Ex. A, at 4; Zero Emissions Opening Brief, at 27.

⁵⁹DBEDT Opening Brief, at 51.

that are actively being developed in Hawaii" and for which "there is already a high degree of market desire and development experience in Hawaii," which they define as PV, CSP, in-line hydropower, and wind.⁶⁰ Noting that they had originally recommended that the initial FIT be available to numerous technologies, SA and HSEA assert that the initial FIT should be limited to PV, CSP, in-line hydropower, and wind, as proposed by the HECO Companies and the Consumer Advocate, on the ground that these are the only technologies that are "shovel-ready" at this time.⁶¹

a.

Projects Eligible For Technology-Specific
Rates - PV, Onshore Wind, In-Line Hydropower, CSP

As outlined above, the consensus of the parties is that the initial FIT should include, at a minimum, PV, onshore wind, in-line hydropower, and CSP projects. The commission agrees that PV, onshore wind, in-line hydropower should be included as they are mature technologies with experience in Hawaii, and thus

⁶⁰HECO/CA Opening Brief, at 43, 45. The HECO Companies and the Consumer Advocate argue that "Phase 2 implementation, via the FIT Update process, will give priority consideration to" wave energy, landfill gas, sewage-based digester gas generating systems; as well as biomass and biofueled resources. Id. at 46-47.

⁶¹SA/HSEA Opening Brief, at 6-7. SA and HSEA note that they are amenable to inclusion of biomass and biogas provided "there is appropriate evidence in the record regarding pricing, the ability to standardize terms and the viability of this technology at eligible sizes, to support inclusion at this time." Id. at 7 n.13. HREA asserts that the initial FIT should be limited to wind, solar and biomass; and Sopogy argues that the initial FIT should include solar (PV and CSP), wind, in-line hydro, biomass and biogas. HREA Opening Brief, at 12; Sopogy Opening Brief, at 10.

would be able to provide cost and performance information. The HECO Companies and the Consumer Advocate have also indicated that these technologies do not present unacceptable land use and permitting challenges, accounting problems, or system interconnection difficulties. As such, these technologies can immediately contribute to meeting Hawaii's renewable energy and fossil fuel independence goals in a reliable and cost-effective manner.

While CSP currently has limited application in the State, it is a technology with a long track record of established costs and performance information. Accordingly, CSP should also be included in the initial FIT. However, only CSP that produces electricity solely from solar energy is eligible for the CSP FIT rates. Cost uncertainty and the added complexity of determining FIT rates for CSP utilizing biofuels or conventional fuels render hybrid CSP inappropriate for the initial FIT.

b.
Ineligible for Technology-Specific
Rates But Eligible For "Baseline" Rates

1. Ineligible Technologies

a. Biomass and Biogas Projects

Several parties have argued that the initial FIT should include biomass and biogas projects. At the panel hearing, however, there was testimony that biomass projects are difficult to permit and the costs of biomass and biogas projects are

difficult to ascertain.⁶² In the commission's view, a lengthy permitting process would preclude the rapid development that the FIT seeks to facilitate. In addition, the uncertainty of feedstock cost and availability would increase the potential risk that FIT rates will prove insufficient in the future. Accordingly, biomass and biogas projects are excluded from the initial FIT. However, depending on their size, they can seek contracts through the FIT baseline rates described below, negotiated PPAs, competitive bidding, or any other available procurement mechanism.

b. Geothermal Projects

Several parties have also argued that geothermal projects should be included in the initial FIT. However, Hawaii has very limited experience with geothermal and geothermal projects have locational limitations and lengthy development timelines⁶³ that preclude the rapid development that the FIT seeks to facilitate. In response to PUC-IR-19, the HECO Companies described in detail the lengthy permitting and siting process necessary to develop geothermal resources, stating that "the time, resources and related costs required to seek and secure approvals for geothermal energy would not fit well into the proposed FIT program."

In arguing for inclusion of geothermal projects, DBEDT noted that its recommendation to include geothermal in the initial FIT was to facilitate Puna Geothermal Venture's

⁶²Tr. Vol. II at 79-80 (Allione); Tr. Vol. II at 75 (Seu).

⁶³Tr. Vol. II at 75 (Seu).

current negotiations with HELCO for an 8 MW expansion of its existing facility.⁶⁴ The commission, however, disagrees that the FIT should be utilized as a means to negotiate pricing for one or a very limited number of projects, and finds that the large up-front costs and lengthy development timelines, render geothermal an inappropriate resource for the initial FIT. As with biomass and biogas, the baseline FIT and other procurement mechanisms remain available to developers of geothermal projects.

c. Biofuel Projects

None of the parties appear to argue that biofuel projects should be included in the initial FIT. Given the uncertainty of feedstock cost and availability, the commission agrees, and will not include biofuel projects in the initial FIT.

d. Wave Energy, Ocean Thermal, Tidal Power, and Offshore Wind Projects

The parties generally agree that the initial FIT should only include commercially available technologies. Accordingly, the initial FIT will not include technology-specific rates for wave energy, ocean thermal, tidal power, and offshore wind projects. Such developing technologies lack established cost and performance information in Hawaii, making it more difficult to establish initial FIT rates for them. More importantly, as noted by DBEDT, "[g]iven Hawaii's already high electricity rates, . . . Hawaii ratepayers should [not] be further burdened with financing

⁶⁴Tr. Vol. II at 139 (Seese).

R&D costs of non-commercial, non-market-ready renewable projects or technologies."⁶⁵

e. Hybrid Projects

With respect to hybrid projects, the commission declines to include technology-specific rates. Due to the potential variability in feedstock costs and the percentage of energy production from the secondary power source, it would be difficult to craft technology-specific rates for hybrid projects using biogas or biomass. Hybrid projects featuring other renewable energy technologies would also be difficult to craft rates for, given the variability in their composition.

In addition, for policy reasons, hybrid projects using fossil fuels are not eligible for the FIT. The purpose of the FIT is to reduce fossil fuel use, promoting energy independence. Projects that use fossil fuels, even if only partially, do not accomplish this goal.⁶⁶ The total cost of electricity from such projects would directly relate to that of fossil fuels, which runs contrary to the goal of de-linking renewable energy costs from fossil fuel prices.

⁶⁵DBEDT Opening Brief, at 53.

⁶⁶See DBEDT Opening Brief, at 54 ("Extending FITs to technologies using up to 49.9% fossil fuel . . . is contrary to the State's goal of reducing Hawaii's dependence on imported fossil-fuel and will instead perpetuate this dependence for the life of such technology, which could last for several generations."); HECO/CA Opening Brief, at 47 n.6 ("It is the opinion of the HECO Companies and Consumer Advocate that hybrid projects utilizing fossil fuels rather than renewable fuels should not be eligible for the Proposed FIT which targets the addition of new, renewable resources to the island grids.").

f. Ancillary Services or Storage

Some parties argued that the initial FIT should include technologies that provide ancillary services or storage. The commission, however, is concerned that the costs of such technologies are highly uncertain, rendering FIT rates imprecise and potentially unjust and unreasonable. The commission may consider adding FIT rates for ancillary services or storage in the first periodic reexamination.

2. Baseline FIT

In an effort to encourage other cost-effective projects, the commission will allow any projects utilizing RPS-eligible technologies, see HRS § 269-91, but lacking specific FIT rates to apply for the FIT under a baseline rate.⁶⁷ Accordingly, all of the technologies identified in the preceding sections (with the exception of biofuel projects, and hybrid projects using conventional fuels or biofuels) and any other RPS-eligible technology, may apply for the baseline rate. The baseline rate shall equal the lowest specified FIT rate for any given project size. However, projects using the baseline rate cannot exceed the maximum size limits for FIT projects.

⁶⁷See, e.g., Haiku Design and Analysis Opening Brief ("HDA Opening Brief"), filed on June 12, 2009, at 4, 11; Joint Reply Brief and Proposal for Feed-in Tariff of Zero Emissions Leasing LLC and Clean Energy Maui LLC, filed on June 26, 2009 ("CEM and Zero Emissions Reply Brief"), at 12 (CEM and Zero Emissions "support establishment of a 'generic' FIT under which the utility would be obliged to take delivery of, purchase and pay for renewable energy, generated with technologies other than the technologies described above, at an FIT rate set low enough to ensure that purchases of such renewable energy would not result in any additional costs to ratepayers").

In this way, if a technology is inexpensive enough to utilize the baseline rate, and it otherwise complies with the requirements set forth in the FIT tariff, it should be included in the FIT as it would provide a benefit to the State.

2.

Size

a.

Parties' Positions

The HECO Companies and the Consumer Advocate argue that the initial FIT should "be focused on PV, CSP, in-line hydropower, and wind, with the following individual project sizes targeted to provide a greater likelihood of more straightforward interconnection, project implementation and use of standardized energy rates and power purchase contracting."⁶⁸ Specifically, the HECO Companies and the Consumer Advocate suggest the following size limits:

- PV systems up to and including 500 kW on Oahu; 250 kW on Maui and Hawaii, and 100 kW in size on Lanai and Molokai.
- CSP systems up to and including 500 kW in size on Oahu, Maui and Hawaii Island, and up to and including 100 kW on Lanai and Molokai.
- In-line hydropower systems up to and including 100 kW in size on Oahu, Maui, Lanai, Molokai and Hawaii
- Wind power systems up to and including 100 kW in size on Oahu, Maui, Lanai, Molokai, and Hawaii.⁶⁹

⁶⁸HECO/CA Opening Brief, at 45-46.

⁶⁹HECO/CA Opening Brief, at 46.

In contrast, Blue Planet and Zero Emissions argue that "projects of all sizes should be eligible for the FIT, subject only to island-wide grid penetration caps for intermittent renewable generation and aggregate renewable generation caps equal to island-wide peak load for each island."⁷⁰

HREA supports a 5 MW project size limit on Oahu and a 3 MW limit on Maui and Hawaii for the initial FIT.⁷¹ Similarly, SA and HSEA propose an initial FIT size limit of 5 MW on Oahu and up to "2.75 MW each for HELCO and MECO" as it is a compromise between the project size limit proposed by the HECO Companies and that originally proposed by many intervenors; it will cover the "void" between NEM limits and the competitive bidding threshold; and it is large enough "to make a meaningful impact [on] the renewable energy market."⁷²

Likewise, DBEDT proposes that the initial FIT apply to renewable generation with a capacity size up to "5 MW for Oahu, and up to 3.0 MW for HELCO and MECO."⁷³ According to DBEDT, the project sizes are reasonable for the following reasons: 1) the "project sizes will allow a bigger pool of market participants, resulting in potentially greater diversity of the renewable distributed generation portfolio in HECO's service territories"; 2) "a greater number of relatively small

⁷⁰Blue Planet Opening Brief, at Ex. 1 at 5; Zero Emissions Opening Brief, at 47.

⁷¹HREA Opening Brief, at 12. See also Sopogy Opening Brief, at 5 (proposing an initial FIT size limit of 5 MW for Oahu, 3 MW for Hawaii and Maui, and 1 MW for Lanai and Molokai).

⁷²SA/HSEA Opening Brief, at 8.

⁷³DBEDT Opening Brief, at 54-57.

distributed generation will potentially provide system benefits by helping replace central generation stations and improving grid operation and reliability as they are dispersed in different locations in the system grid"; 3) "replacing central generation stations with renewable distributed generation will also reduce line losses, which in turn reduces the imported fossil fuel used by the HECO Companies"; 4) these project sizes "will attract more local market participants or developers"; 5) the "project sizes are easier to site relative to much larger project sizes as proposed by the other Parties"; 6) the "proposed project sizes do not overlap or conflict with the minimum capacity size thresholds of generators for the existing competitive bid process, while at the same time filling the procurement process gap for those projects below the capacity size threshold for the bid procurement process" 7) "DBEDT's proposed 5 MW project size limit for Oahu is reasonable based on HECO's system load and the almost negligible penetration of variable generation in its system."⁷⁴

The HECO Companies and Consumer Advocate disagree that the initial FIT project size limits should be as proposed by certain intervenors. According to the HECO Companies and the Consumer Advocate, system security and power quality cannot be assured at the project size limits proposed by the intervenors.⁷⁵ "Project sizes of 2.75 MW on Maui would equate to 50% of some of MECO's largest circuits and represents approximately 1.5% of

⁷⁴DBEDT Opening Brief, at 54-57.

⁷⁵Reply Brief of the HECO Companies and Consumer Advocate, filed on June 26, 2009 ("HECO/CA Reply Brief"), at 11.

the peak generation and nearly 2% of the generation during typical daytime loads on both the MECO and HELCO systems."⁷⁶ "[G]eneration of this size has a significant impact on these systems as a whole, especially if it is non-dispatchable and therefore, would require modifications to the utilities' online regulating reserve. At this proposed size, HELCO would require monitoring and control capabilities in order to be able to insure grid stability and power quality."⁷⁷

b.

Size Limits

As demonstrated above, the parties' positions vary widely with respect to the appropriate project size limit. Most parties recognize, as stated by HREA, that "it may be prudent to introduce certain physical limits during the initial implementation phase of the FIT program to ensure grid integrity and reliability" and "to limit program costs and provide time and information to address questions of overall costs and benefits of FIT."⁷⁸ For those reasons, the commission is disinclined to approve an initial FIT that lacks project size limits, as suggested by certain intervenors. The commission is also extremely concerned, however, that the size limits proposed by the HECO Companies and the Consumer Advocate would lead to a relatively low aggregate level of FIT renewable energy

⁷⁶HECO/CA Reply Brief, at 11.

⁷⁷HECO/CA Reply Brief, at 11.

⁷⁸HREA Opening Brief, at 12.

development. In addition, the commission finds that the initial FIT should not overlap with the Competitive Bidding Framework. At the FIT reexamination, the commission, however, may reevaluate whether the FIT should include larger projects.

In determining project size limits, the commission favors a middle ground between the parties, articulated by SA/HSEA, DBEDT, and others as the competitive bidding threshold of 5 MW for Oahu and 2.72 MW each for Maui and Hawaii. To be precise, the exemption from competitive bidding is for "generating units with a net output available to the utility of 1% or less of a utility's total firm capacity, including that of independent power producers, or with a net output of 5 MW or less, whichever is lower."⁷⁹ For MECO, the system firm capacity is considered on a consolidated basis such that, at the time of the filing of the Framework, the 2.72 MW for MECO was derived as follows: 1% of 250 MW + 10.4 MW + 12 MW.⁸⁰

In setting the FIT project size limit at the competitive bidding threshold, the commission addresses the eligibility gap that currently exists between NEM and the Competitive Bidding Framework. Currently, owners of projects within this gap must agree to negotiated PPAs with the utility. Developers have described such PPAs as lacking standardization

⁷⁹The exemption is set forth in Part II.A.3.f. of the Framework for Competitive Bidding, attached as Exhibit A to Decision and Order No. 23121, filed on December 8, 2006, in Docket No. 03-0372.

⁸⁰Decision and Order No. 23121, filed on December 8, 2006, in Docket No. 03-0372, at 5 n.9.

and otherwise being suboptimal vehicles for the rapid development of renewable energy projects. By allowing the FIT to fill that gap, the commission provides a structured program to facilitate development of projects of these sizes, in addition to facilitating smaller projects.

In addition, in the commission's view, the size limits include projects large enough to feature certain economies of scale. The initial FIT will include projects larger than those proposed by the HECO Companies and the Consumer Advocate in order to include types of projects that may not be economically or technically feasible at small sizes. These include larger wind turbines and certain types of solar technologies that are less feasible for smaller projects. These larger size limits will facilitate the development of residential, commercial, and large-scale projects.

In their reply brief, the HECO Companies and the Consumer Advocate acknowledge that "project sizes in the range of 5 MW may be possible" for Oahu. Given the size of the HECO system and its low penetration of renewables, a more aggressive approach is clearly warranted for Oahu. The commission is cognizant that larger projects may not necessarily be "plug and play" and could require additional time to develop and interconnect, and furthermore, that the interconnection costs and process would be less standardized.⁸¹ However, the commission's

⁸¹See HECO/CA Opening Brief, at 42 ("if a FIT is developed for larger resources on Oahu, it would be necessary to bifurcate the interconnection review process and corresponding interconnection contractual requirements from the

desire to accelerate the adoption of renewable energy and reduce the State's dependence on imported fossil fuel outweighs this consideration.

Of greater concern to the commission are the HELCO and MECO grids, which are much smaller and have considerable renewable penetration, compared to the HECO system. The HECO Companies and the Consumer Advocate argue that projects of the size proposed by DBEDT (i.e., 3 MW) "will in many circumstances, particularly on the HECO Companies' neighbor island systems raise issues regarding the need for appropriate study of the resource's impact on the system, the need for additional regulating reserves, and the need for appropriate controls upon the resource."⁸² In addition, even on the HECO system, projects might not be feasible or appropriate in all locations, even if they fall below the size limits.

non-interconnection issues and contract terms and conditions (including pricing) which could be included in a FIT").

⁸²HECO/CA Reply Brief, at 12. According to the HECO Companies and the Consumer Advocate:

Put another way, increasing the proposed limit up to 5 MW as some in this proceeding have proposed would result in the potential generation on a circuit being almost twice the amount of the corresponding load on that circuit which would require modification to the protection schemes and voltage regulating equipment on those circuits. While it is possible to implement these types of modifications, they should not be undertaken without a demonstrated need or without an appropriate evaluation of the cost relative to the resource to be added - factors which are considered as a part of the utility's other procurement mechanisms for projects of this size.

HECO/CA Opening Brief, at 29.

To address these concerns, the commission will limit additional wind generation projects (up to 100 kW) on the HELCO and MECO systems for purposes of eligibility for the initial FIT. In addition, the commission will reiterate the HECO Companies' continuing obligation to ensure system reliability. As such, the HECO Companies maintain the ability and obligation to refuse to interconnect projects that will substantially compromise reliability or result in an unreasonable cost to ratepayers. For instance, based on the reliability standards discussed below, the utility could determine that projects above certain sizes or using certain technologies are not possible in certain locations without degrading reliability or necessitating costly system upgrades. As discussed below, the utility need not interconnect projects that would likely face significant curtailment or cause significant curtailment for existing renewable energy generators. However, when the utility rejects applications for projects smaller than the maximum FIT size limits, it must file a detailed report with the commission describing why the project is not feasible and should not be interconnected.⁸³

⁸³The dissent claims that the commission "simply ignored" the technical challenges the HECO Companies must address to maintain system reliability while integrating projects greater than 500 kW. Here, however, the commission acknowledges those challenges and ensures that the HECO Companies retain the ability to reject FIT projects that would compromise system reliability, and at the same time holds them accountable by requiring that they report the detailed reasons for any such rejection.

The following table depicts the project size tiers for the initial FIT:

Tier	Project Size
1	0-20 kW on all islands
2	Greater than 20 kW and up to and including: PV: 500 kW on Oahu, 250 kW on Maui and Hawaii, and 100 kW on Lanai and Molokai; CSP: 500 kW on Oahu, Maui, and Hawaii and 100 kW on Lanai and Molokai; In-line hydropower and onshore wind: 100 kW on all islands
3	Greater than Tier 2 maximums and up to and including the lesser of 5 MW on Oahu and 2.72 MW on Maui and Hawaii or 1% of the system peak load from the previous year, except that wind generation is precluded on Maui and Hawaii

The first size tier, which includes projects up to and including 20 kW, is intended to include residential and small commercial projects on all islands. The second size tier will extend up to the maximum limits proposed by the HECO Companies and the Consumer Advocate.

Based on the record in this proceeding, projects in the first and second size tiers should enjoy relatively uniform interconnection costs and should be less likely than larger projects to need Interconnection Requirements Study ("IRS") examinations. The commission elected to use these tier cutoffs based on the HECO Companies' arguments and evidence that projects up to those sizes could be rapidly evaluated and integrated into the HECO Companies' systems at relatively low cost and with fewer reliability concerns. If experience demonstrates that these size limits do not accurately reflect the sizes of projects needing an

IRS or do not reflect where economies of scale are realized, the commission will consider adjusting them at the first periodic reexamination.

The third size tier shall apply to projects larger than the HECO Companies and the Consumer Advocate's proposed maximum size limits and up to the lesser of one percent of peak load for each island, or 5 MW on Oahu and 2.72 MW on the Island of Hawaii and Maui (except Molokai and Lanai for which Tier 3 does not apply). These maximum sizes are the current minimum thresholds for the Competitive Bidding Framework, with which the commission does not want the FIT to overlap. This size is for projects that are in many cases not behind-the-meter and are designed to export large amounts of electricity to the grid. The commission concluded that a three-class system balances the desire for FIT rates to reflect economies of scale and differences in interconnection costs between projects of varying sizes and the desire to have simple FIT rates.

The commission recognizes that the largest size tier, Tier 3, will have more complex issues to resolve following issuance of this Decision and Order. The commission encourages the parties to initially focus on resolving the issues in Tiers 1 and 2, to facilitate the immediate implementation of FITs in those tiers.

c.

Reliability

During the hearing and in their various submissions, the HECO Companies described numerous reliability concerns associated with adding intermittent resources. According to the HECO Companies and the Consumer Advocate:

Connecting any variable generation source to a system has the potential for a negative impact. For example, large PV systems or a large aggregate of PV on a system can displace conventional generation which could otherwise be utilized to respond to changes in the system. Also, the fluctuation of power output from any intermittent generation source, including a PV facility (e.g., due to passing clouds), can have a negative impact on reliability and power quality. This is because a standard PV system, like most intermittent generation sources, does not have any of the characteristics of conventional generation that an electric grid requires (e.g., load following, droop response, inertial response, quick load pickup, and voltage regulation).

As already stated, the Joint Parties contend that the potential impact of any generation source depends on many different factors. One of those factors also includes the system or electric grid to which the proposed generation source seeks to connect. For a larger grid, the addition of an intermittent source of energy might have a potentially negative impact, but that impact may be immaterial depending on the grid and the unit. However, on a smaller grid, the impact of that addition may not be immaterial. The electric systems on each island are definitely smaller relative to most systems, but even just within Hawaii, the relative size differences among the island systems do not allow a "one size fits all" approach.

This simply highlights the fact that it is difficult to make generalized statements regarding any particular resource or that resource's impact upon the utility grid. To a large extent, one cannot know what that impact, positive or negative, will be until the resource type, size, operating characteristics, and location of that resource is known and evaluated. This again presents the issue of why it is difficult to provide a specific number or numbers as to the amount of a particular type of resource a particular grid can accept. The most correct response to this question is

not to guess at a particular number, but rather to conduct the appropriate evaluations necessary to determine what those amounts could be given reasonable assumptions that can be made. As discussed herein and in the Joint Parties' Opening Brief, this is the process that the HECO Companies are presently engaged in. Focusing on PV in particular, depending on the amount and type of distributed generation that is connected to a grid, and the operational ability of that grid to integrate the PV resource, PV resources can have negative impacts on system reliability and power quality. This is why it is reasonable to have initial system level and circuit penetration limits for certain types of generation such as PV.⁸⁴

DBEDT proposes that the HECO Companies be required to file information, as requested by DBEDT in its opening brief, "at least four weeks before the settlement discussions among the parties scheduled to begin in August 2009" and recommends that the commission order:

the HECO Companies to commission a third-party study of each island's grid (Maui, Big Island, Oahu) to determine how much renewable power the current system can accept, and what system upgrades are needed for varying increases in the amount of renewable power that the system can accept (i.e., increase by 25%, 50%, 75%, 100%), and the costs of such upgrades. DBEDT recommends that the utilities be ordered to file the results of this study at least six months before the first Commission update of the initial FiTs.⁸⁵

Sopogy and HDA propose that the commission direct the HECO Companies to "develop such standards that clarify what constitutes grid system reliability."⁸⁶

⁸⁴HECO/CA Reply Brief, at 9-10.

⁸⁵DBEDT Opening Brief, at 49.

⁸⁶Sopogy Opening Brief, at 14-15. See also HDA Opening Brief, at 9 ("There are currently no system reliability standards adopted or applicable to the HECO Company systems that are meaningful in determining the amount of distributed generation or as-available generation that can be accommodated without adversely affecting service reliability. There are no standards that can serve to determine what demand response, load

Blue Planet and Zero Emissions, however, indicated that the "[e]xisting reliability standards (i.e., Rule 14H) are adequate for utility determination whether additional intermittent generation can or cannot be interconnected to island grids without comprising grid security and for determining whether specific renewable energy projects would comprise system security."⁸⁷ Similarly, the HECO Companies and the Consumer Advocate argue that the HECO Companies comply with General Order No. 7, which contains "broad reliability standards for voltage, frequency and reliability that the Hawaii utilities are required to comply with," and file regular reports with the commission concerning their reliability performance.⁸⁸

Though some parties dispute the HECO Companies' specific assertions, the commission finds that reliability constraints exist and could affect the amount, type, and location of renewable energy that can be incorporated into the HECO Companies' systems without compromising reliability. Citing the multiplicity of factors incorporated into reliability determinations, the HECO Companies declined at the panel hearing and in their submissions to define how much renewable energy each island could incorporate.

management, energy storage or grid improvement measures could mitigate or accommodate increasing levels of distributed and/or as-available generation. The Commission should initiate a process or could direct the HECO Companies to initiate a process to develop reliability standards.").

⁸⁷Blue Planet Opening Brief, at Ex. A, at 4; Zero Emissions Opening Brief, at 26.

⁸⁸HECO/CA Reply Brief, at 17.

The commission recognizes the need of developers for transparency with respect to what the reliability and interconnection standards are that may preclude a project from being implemented under the FIT. At the same time, the commission acknowledges that simple metrics might not fully capture reliability considerations. It is concerned though, that without some transparency and predictability in reliability determinations, developers are unable to gauge the probability that their projects could be developed, which increases the developer's risk.

As such, the commission directs the HECO Companies to develop reliability standards for each company, which should define most circumstances in which FIT projects can or cannot be incorporated on each island. The HECO Companies should incorporate the other parties to this docket into the process of crafting these standards. The standards should complement existing standards, including those in the HECO Companies' tariff Rule 14, and should provide greater predictability with respect to reliability issues for developers. While the commission prefers that the standards be filed prior to FIT rates taking effect, the commission will entertain proposals from the parties on an alternate means or timeline for completion of the standards within fourteen days of the date of this Decision and Order. The commission in particular wants the HECO Companies to adopt standards that establish when additional renewable energy can or cannot be added on an island or region therein without markedly increasing curtailment, either for existing or new renewable

projects. FIT generation should meet new load requirements and displace fossil fuel generation. Accordingly, FIT projects should not meaningfully displace existing renewable energy generation. For instance, minimum load standards could demonstrate whether additional wind generation could be added to the HELCO and MECO grids without harming reliability or directly leading to more curtailment of existing renewables during off-peak hours.

Standards alone shall not be absolutely dispositive in determining whether to include or exclude projects from FIT eligibility. If a given standard indicates that a project is not viable in a location, the developer could still request, and pay for, additional studies to further assess the project's feasibility. In some instances, standards could indicate that projects are possible, but more comprehensive analyses such as an IRS could conclude that they are not feasible. In such cases, the HECO Companies could still deny the project, though they would need to file a detailed explanation for the rejection with the commission.

The standards should also be flexible, based on experience and changes in system conditions. The commission asks that the HECO Companies modify the standards for each company after each year of the FIT's operation, or more frequently if appropriate, to reflect changes to transmission, distribution, generation, demand, generation mix, ancillary services availability, the results of ongoing studies, and any other relevant factors.

System Cap

As pointed out by LOL, there has been little information provided by developers on Hawaii-specific project costs, despite the commission's request; and "[e]vidence regarding rate impacts is entirely missing."⁸⁹ Likewise, HAD notes that "[s]ince aggressively priced FiTs would require utilities to accept large or unlimited amounts of renewable generation projects by tariff without project by project review and approval, it is necessary to ensure that the FiT design and terms, (caps, limits or conditions) prevent undue burdens on the utility or result in uneconomic resource procurement."⁹⁰ HDA also notes that "important information" is missing from the record:

In particular, there is still no generation and transmission system plan that identifies how much of each type of generation is compatible or necessary to accommodate new renewable generation. It is not known how much of each type of renewable generation can be accommodated. It is not known what measures, improvements and investments in utility system infrastructure would be necessary to accommodate various amounts of new renewable generation. It is not known when, whether or to what extent any measures being taken to accommodate substantial amounts of new renewable generation on the utility systems will be effective. There is no estimate of any sort of what impacts the proposed (or any other) feed-in tariffs will have on generation costs or retail rates. The rate impacts are entirely unknown.⁹¹

⁸⁹Life of the Land's Final Statement of Position, filed on June 12, 2009, at 5.

⁹⁰HDA Opening Brief, at 12.

⁹¹HDA Opening Brief, at 2 (citing HDA's Final Statement of Position, filed March 30, 2009, at 1-2).

Citing the NRRI Paper, the HECO Companies argue for limits on project size and system penetration to address these issues. According to the HECO Companies and the Consumer Advocate: "One of the greatest challenges to maintaining system reliability and power quality is uncertainty regarding the addition of new resources onto an island grid. One way to reduce the level of uncertainty is to set certain reasonable limits upon the size and system penetration of FIT resources during a particular period of time. In this way, a system operator can have at least some ability to forecast the size of resource that will come onto the grid through a FIT and the maximum amount of that resource that can be expected during a given defined period of time."⁹²

HECO utilizes the following examples of its concerns:

(1) addition of multiple 250 kW PV resource on unconstrained portions of the HECO distribution system may not have any significant impact upon HECO system reliability while addition of those same resources to an already constrained HELCO system may raise significant operational concerns which would have to be remedied, to the extent possible, either through the addition of costly grid infrastructure or operational actions to attempt to manage the new resource (also at a potential cost if other less costly renewable resources must be curtailed or reduced or more expensive resources dispatched as part of the grid management process); (2) addition of a significant amount of variable wind resources in a particular location on the system may result in the utility not being able to accept any additional variable generation at that location; and (3) the addition of a resource which could provide grid benefits (dispatchable, load following and able to provide ancillary services as an example) could be accepted at a particular location on the HELCO system, whereas a variable generation resource could result in unacceptable system impacts because it is non-dispatchable and would likely

⁹²HECO/CA Opening Brief, at 38.

contribute to existing balancing issues on the HELCO system resulting from existing variable generation projects.⁹³

If the commission adopts a cost-based cap, Zero Emissions and Blue Planet propose the initial expenditure cap should be \$1,256,159,321, and if the commission adopts a quantity-based cap, they propose "grid penetration caps equal to 25% of island-wide peak load for wind generation and 20% of island-wide peak load for solar generation."⁹⁴

In the commission's view, some system cap is required based on the concerns articulated by certain parties as described above. Accordingly, the initial FIT will feature caps for each island based on the cumulative nameplate capacity of FIT projects. Caps are an appropriate mechanism by which to limit the potential initial ratepayer consequences and reliability effects of the FIT. Caps are particularly important prior to the first periodic reexamination, given the inherent imprecision in setting initial FIT rates and the uncertainties of the types of projects likely to be constructed and at what locations.

The initial caps derive from the nameplate capacity of FIT projects. The commission considered employing a cost-based cap but determined that, given the likely range of FIT rates for different technologies, such caps would reduce FIT predictability for developers. Costs would have to be estimated, as actual

⁹³HECO/CA Opening Brief, at 39.

⁹⁴Zero Emissions Opening Brief, at 24-25; see also Blue Planet Opening Brief, at Ex. A, at 2-3.

electricity production and resulting payments would not be certain before project operation. For the same reason, the commission also ruled out caps based on electricity production.

The FIT's initial caps will be nameplate capacity equal to 5% of 2008 peak demand for each of the HECO Companies. The commission finds that these cap levels are appropriate because they are large enough to facilitate the development of a variety of projects, but at a measured pace. It is also particularly important that the caps will limit potential ratepayer effects; although the limitation will be variable depending on the technology and their respective rates.

The commission is cognizant of the HECO Companies' concerns that system penetration limits "cannot be determined in a vacuum but must instead appropriately and comprehensively account for" each of the following factors to have a "general concept as to the amount of variable generation that can be accepted on a power system"⁹⁵:

- (1) the characteristics of the variable generation such as rate of change, correlation with other resources, degree of possible change in a given time period, predictability of output, and control capabilities;
- (2) the characteristics of the other controllable or dispatchable resources such as available ramp rate, frequency response, minimum load, and startup time;
- (3) the minimum number of conventional generators which are necessary to provide for the reliable operation of the power system: as necessary to survive reasonably probable faults and disturbances, ability to regulate voltages, perform load balancing and frequency control;
- (4) the operational configuration to mitigate reliability impacts and their costs, for example, the inclusion of increased reserves (minimizing displacement of dispatchable units);
- (5) evaluation of possible technical solutions and their costs such as supplemental controls on the variable generation,

⁹⁵HECO/CA Reply Brief, at 27.

modification of the dispatchable generation, infrastructure modifications; and (6) establishing minimum reliability criteria to be maintained on the power system⁹⁶

However, in the commission's view, the caps are not mandates, but maximum levels for FIT participation. For reliability reasons, it might not be possible to reach all caps. As noted above, the HECO Companies maintain their obligation to ensure reliability. Based on reliability standards or interconnection studies, the HECO Companies must reject projects that substantially compromise reliability. As discussed in Section II.B.2.b, the utility must not interconnect projects that will substantially compromise reliability or result in an unreasonable cost to ratepayers or would lead to significant curtailment of new or existing renewable energy generators.⁹⁷

In addition, if the FIT caps are met, FIT-eligible projects can still apply for negotiated PPAs. The FIT caps are not intended to serve as hard caps for all renewable energy

⁹⁶HECO/CA Reply, at 26.

⁹⁷The dissent expresses concern that requiring the HECO Companies to consider costs to ratepayers in deciding whether to interconnect a FIT project shifts the commission's statutory responsibility to the HECO Companies. That concern is misplaced. The HECO Companies take costs (typically borne by ratepayers) into account in many decisions. The commission does not make every spending decision for the HECO Companies, but reviews costs and expenses in rate cases and decides whether they are prudent and reasonably incurred. If they are not, they are not recoverable from ratepayers.

Likewise, as with the project size limits, here, with the system penetration cap, the HECO Companies should not interconnect projects that compromise system reliability.

investment; rather, they are meant only to control the scope and pace of the FIT program, and to manage ratepayer impact.⁹⁸

The commission is also aware of the concern on project diversity, and will reserve five percent of the FIT cap of each of the HECO Companies for projects under 20 kW. The FIT caps, along with the project size limits, described in Section II.B.2.b, will enable multiple developers to develop multiple projects. The commission sees value in encouraging a diverse local industry of renewable energy developers, installers, and operators, and wants to ensure that the FIT, in conjunction with net energy metering, supports small commercial and residential projects.

The caps will apply for the entire two-year period prior to the first periodic reexamination, which is described in Section II.H. The commission considered annual caps. It concluded, however, that annual caps are more likely to be quickly filled than caps covering a longer time period, increasing the risk to developers that the FIT could be fully subscribed before the completion of preliminary development. Annual caps would also bias the FIT towards project sizes and technologies with fast development timelines.

⁹⁸The dissent also seems to imply that because the commission does not know the precise impact FITs will have on ratepayers its decision is unreasonable. The 5% system penetration cap limits ratepayer impact. While the prices to be paid for energy under the FITs are not yet established, the commission would not approve prices that are so high that the ratepayer impact would be unreasonable.

The caps' space will be consumed when a project applies for the FIT. The commission considered having the caps fill when projects receive final regulatory approval or actually interconnect. Such a policy would increase project risks because developers could be midway through construction or have already paid for an IRS, only to find that the cap has been filled. This risk could discourage development. However, to deter frivolous projects from filling the caps, a significant application fee should be required.

The commission may consider amendments to the caps in the first periodic reexamination.

4.

Other Eligibility Issues

a.

Projects Owned By Utility Affiliates

An issue at the panel hearing was whether projects owned by a utility affiliate may participate in the initial FIT. Although the HECO Companies "have committed not to directly participate in the initial FIT through any utility affiliates,"⁹⁹ the commission confirms that projects owned by utility affiliates should not be eligible for the initial FIT. The utility could

⁹⁹HECO/CA Opening Brief, at 50-51. The HECO Companies argue that "given the HECO Companies' legal obligation to comply with the RPS, the HECO Companies reserve the right to develop or acquire utility-owned renewable resources outside of the FIT process to the extent that such development and/or acquisition is necessary to insure the RPS requirements, both existing and as modified in the future, may be met and the HECO Companies are able to satisfy their obligation under law."

potentially favor its affiliates in reliability, queuing, and interconnection decisions. The commission is also concerned that the utility's intimate knowledge of its system could provide an unfair advantage for affiliate projects. Procedures to prevent discrimination by the utility in favor of affiliate projects could mitigate such concerns. The commission, however, seeks to avoid the added complexity, oversight, and enforcement that such procedures would entail. The commission may reconsider the inclusion of projects owned by utility affiliates in the first periodic reexamination.

b.

Incremental Additions To Existing Projects

With respect to incremental additions to existing projects, such additions are eligible for the FIT as stand-alone projects, provided they use separate meters. The commission is concerned with the feasibility of differentiating electricity produced by existing projects from that produced by incremental additions. Thus, incremental additions to existing projects are permissible so long as they are separately metered.

C.

Rates

1.

Rate Components

a.

Project Costs

In determining FIT rates, most parties appear to argue that the rates should be based on project cost plus a reasonable profit.¹⁰⁰ According to DBEDT, project costs should include:

- (a) The design, permitting, and construction costs, including labor and materials costs;
- (b) Land cost or actual cost of site acquisition;
- (c) Metering costs incurred by the project developer;
- (d) Operation and maintenance labor and non-labor costs including renewable fuel costs, if any; and
- (e) Other project development or operational costs such as taxes, interest payments, and monthly land rents or leases.¹⁰¹

DBEDT further asserts that project costs should be adjusted for applicable "State and/or federal tax credits or tax

¹⁰⁰See DBEDT Opening Brief, at 59 ("The FiT rates should be based on the project cost plus a reasonable rate of return on capital investment"); HECO/CA Opening Brief, at 53 ("The HECO Companies and the Consumer Advocate . . . support FIT rates that are designed to cover the producer's costs of energy production plus reasonable profit."); Sopogy Opening Brief, at 4 ("FiT rates should be based on the cost of energy production plus a reasonable rate of return for the project developer/owner.").

¹⁰¹DBEDT Opening Brief, at 59.

policies, rebates, or development or investment incentives for renewables that exist when the FiT rates are determined."¹⁰²

The HECO Companies and the Consumer Advocate assert that "there is a range of applicable costs for any particular technology."¹⁰³ According to the HECO Companies and the Consumer Advocate, the relevant cost and performance information necessary to calculate FIT rates include but are not limited to:

- Capital costs: This component includes installed capital costs for both generation equipment and transmission and interconnection, including applicable sales taxes. It may also consider, as applicable, net decommissioning costs (if decommissioning costs are expected to exceed any residual value) or residual value.
- Project performance: including net capacity factors, estimated project life and projected generation degradation.
- Initial development costs: including engineering, permitting, environmental, management, legal, accounting, and contracting costs.
- Financing costs and cost of capital: including construction financing, up-front financing fees and transaction costs. The cost of permanent financing involves making assumptions about the assumed capital structure as well as the cost of debt (if used) and the target IRR. Lender requirements such as reserves and minimum debt coverage ratios should also be considered as applicable.
- Ongoing costs: these include estimates of the following costs both initially and as they change (escalate) over time: fixed and variable O&M expenses; fuel costs (if any); replacement parts; land lease costs; insurance; state and Federal income taxes (including the tax effects of

¹⁰²DBEDT Opening Brief, at 59. DBEDT, however, argues that the FIT rate "should not be automatically adjusted for any future tax credits, rebates, or incentives for renewables." Id.

¹⁰³HECO/CA Opening Brief, at 55.

depreciation), property taxes, excise and all other applicable taxes. Any grid support services or volumetric costs or charges typically required of and imposed on generators should also be accounted for. These types of services will vary widely depending on the project and location.

- Applicable Federal and state tax or other incentives.
- Discount rate: a discount rate must be selected for determining the equivalent NPV of the projected and levelized revenue streams. While the discount rate selected is typically related to the cost of capital, we recommend selecting a common discount rate to apply across all technologies for this purpose, as the required equity returns may vary by technology.¹⁰⁴

In reviewing the record, the commission finds that FIT rates should support a typical or average project¹⁰⁵ that is reasonably cost-effective,¹⁰⁶ and that included in the calculation of FIT rates should be project and generation cost information, energy production, and the target internal rate of return.¹⁰⁷ The project costs, as identified by the HECO Companies and the Consumer Advocate, should include, but are not limited to, capital costs for generation equipment and transmission;

¹⁰⁴HECO/CA Opening Brief, at 56-57.

¹⁰⁵See, e.g., HECO/CA Opening Brief, at 53; Blue Planet Opening Brief, at Ex. A, at 6; Zero Emissions Opening Brief, at 30. The HECO Companies and the Consumer Advocate argue that, basing FIT costs on a "typical project" is consistent with the commission's policy on distributed generation set forth in Decision and Order No. 22248, filed on January 27, 2006, in Docket No. 03-0371. HECO/CA Opening Brief, at 53.

¹⁰⁶In granting waivers from the Competitive Bidding Framework, the commission has stated that the price paid for nonfossil fuel generated electricity should be "fair." See, e.g., In re HECO and HELCO, Docket No. 2008-0091, Decision and Order, filed on August 8, 2008, at 9-10.

¹⁰⁷HECO/CA Opening Brief, at 53-54.

initial development costs; financing costs; the ongoing costs associated with operating and maintaining the project; and applicable federal and State taxes or other incentives. With respect to State and federal taxes and other incentives, the commission agrees with DBEDT that "adjusting the project development costs for such tax credits, tax policies, rebates or incentives for renewables is consistent with the inclusion of the taxes incurred in the project development cost used in the determination of the FiT rates."¹⁰⁸

b.

Interconnection Costs

With respect to interconnection, there are a number of costs, such as: 1) utility system costs and upgrades, 2) project specific equipment (e.g., line extensions, substation and transformation equipment and equipment installed at the customer site, SCADA, control system and curtailment system specific to the project), 3) IRS costs, 4) risk assessment study costs, and 5) system and feeder studies and technology verification studies.¹⁰⁹

On the issue of interconnection cost allocation, Blue Planet argues that the utility should not pay for, or compensate through FIT rates, any project-side modifications or additional requirements resulting from IRS studies for small or

¹⁰⁸DBEDT Opening Brief, at 59. DBEDT, however, argues that the FIT rate "should not be automatically adjusted for any future tax credits, rebates, or incentives for renewables." Id.

¹⁰⁹HECO/CA Opening Brief, at 62; SA/HSEA Opening Brief, at 19.

large projects.¹¹⁰ In addition, Blue Planet argues that the utility should not pay for IRS studies for small or large projects.¹¹¹ In contrast, Zero Emissions argues that the utility should pay for, or compensate through FIT rates, all project-side modifications or additional requirements resulting from IRS studies for small and large projects.¹¹² Zero Emissions also argues that the utility should pay for the IRS studies for small projects, but not large projects.¹¹³

DBEDT asserts that FIT rates should include interconnection costs and that "costs of interconnection requirements on the utility side of the interconnection point should be borne by the utilities, and the costs of the interconnection requirements on the project side of the interconnection point be borne by the project developers."¹¹⁴

The HECO Companies and the Consumer Advocate delineate in their opening brief their proposal for how interconnection costs should be allocated. For example, they argue that

¹¹⁰Blue Planet Opening Brief, at Ex. A, at 8.

¹¹¹Blue Planet Opening Brief, at Ex. A, at 8.

¹¹²Zero Emissions Opening Brief, at 33.

¹¹³Zero Emissions Opening Brief, at 33; see also SA/HSEA Opening Brief, at 19 (allocating IRS costs to the utility for projects up to 1 MW, and to the developer for projects between 1 MW and 5 MWs).

¹¹⁴DBEDT Opening Brief, at 60; see also Sopogy Opening Brief, at 6 ("Sopogy believes that the developer should bear the cost up to the point of grid interconnection and that the utility should bear the costs at the point of interconnection and into the grid, including any equipment or circuit upgrades required to support the renewable energy delivered").

IRS costs should be the developer's responsibility, and that risk assessment study costs and project specific equipment should be paid for by the developer; but that system and feeder studies and technology verification studies should be the utility's responsibility.¹¹⁵ Likewise, SA and HSEA describe their recommended allocation of interconnection costs. For example, SA and HSEA propose that the utility pay for IRS costs and project risk assessment costs for projects 1 MW and smaller, for system and feeder studies and technology verification studies and for utility system costs and upgrades; while the developer would pay for line extension and transformation equipment and equipment installed at the customer site specific to the project regardless of project size.¹¹⁶

In response to SA and HSEA's cost allocation proposal, the HECO Companies and the Consumer Advocate caution that "allowing developers to avoid the reasonable cost of interconnection and other studies and project costs would open the door to developers submitting any number of project proposals regardless of practicality, economics or engineering."¹¹⁷ As an example, they argue that, "if the utilities are required to pay for a substation for a project and the project does not materialize or is not able to continue operations for whatever reason, the utilities, and ultimately the ratepayers, will have paid for something that is no longer useful. Without financial

¹¹⁵HECO/CA Opening Brief, at 62.

¹¹⁶SA/HSEA Opening Brief, at 19.

¹¹⁷HECO/CA Reply Brief, at 23.

risk to the developers, there is little to prevent developers from pulling up stakes at any point during the project and leaving the utility bearing the costs of an unusable facility. With no financial burden, developers could also propose new generation sites far from compatible grid resources, requiring the utility to construct costly system facility upgrades."¹¹⁸

In response to DBEDT's proposal that the utility pay for interconnection requirements on the utility side of the interconnection point, the HECO Companies and the Consumer Advocate argue that "the Commission must be careful not to effectively subsidize developers by allowing developers to pass on their project specific costs to ratepayers:

Because the developer receives 100% of the profits from the power sales, the developer should bear the total cost of interconnection to the electric grid to maintain the safety, reliability, and power quality of the electric grid. Having the developer pay the total cost associated with the project will allow for more economical projects to be installed over less economical projects. This is consistent with Rule 14H which requires larger distributed generation projects that have a higher negative impact to the electric grid to bear more of the cost regardless of the location of the point of interconnection."¹¹⁹

¹¹⁸HECO/CA Reply Brief, at 23; see also HECO/CA Reply Brief, at 43 ("without any financial risk or economic restraints due to system costs, a developer would be able to design its project without any consideration for the location and/or capacity of existing utility system facilities in the area, forcing the utilities to bear the costs of upgrading what could be miles of system facilities. This would be an unfair financial burden to the rest of the utilities' customers for the benefit of the developer").

¹¹⁹HECO/CA Reply Brief, at 43.

The HECO Companies state that, "[a]s one example, supervisory control cost is installed on the utility's side of the point of interconnection for communication and control to the utility's system operator to maintain the safety, reliability, and power quality of the electrical grid."¹²⁰

With respect to the allocation of interconnection costs, the commission is concerned that, with the exception of the HECO Companies/Consumer Advocate and SA/HSEA, the parties have contributed little to the record on how the various interconnection costs should be specifically allocated. Even the HECO Companies/Consumer Advocate and SA/HSEA did not elaborate on their proposed cost allocations sufficient for the commission to determine which up-front interconnection costs should be the responsibility of the utility, which costs should be the responsibility of the developer, and which costs should be explicitly included in the calculation of the FIT rates. For example, the record is not clear as to how some of the interconnection costs identified by the HECO Companies/Consumer Advocate and SA/HSEA are currently allocated, and whether there is a basis to shift certain costs from the developer to the utility. The commission, however, recognizes that FITs should include rates to cover the typical interconnection costs that are the responsibility of developers.¹²¹

¹²⁰HECO/CA Reply Brief, at 43.

¹²¹The commission recognizes that not every interconnection cost identified by the HECO Companies/Consumer Advocate and SA/HSEA will be necessary for every project. The interconnection costs included in FIT rates should be clearly delineated in the

With respect to the smaller projects in Tiers 1 and 2, the commission expects the parties to quickly reach an agreement on interconnection costs to have a FIT in place for those tiers as expeditiously as possible. To the extent applicable, the parties should use the HECO Companies' Rule 14.H, which was recently revised in Docket No. 2006-0498, for guidance in establishing the interconnection costs and standards for projects in these tiers.

For Tier 3 the commission recognizes that, at the panel hearing, several intervenors acknowledged that interconnection may not be standardized at those sizes. The HECO Companies and the Consumer Advocate in their reply brief argued that it was not feasible to assume standard interconnection requirements or costs for projects larger than their proposed maximum project sizes (i.e., larger than Tier 2).¹²² According to HECO and the Consumer Advocate, "if a FIT is developed for larger resources on Oahu, it would be necessary to bifurcate the interconnection review process and corresponding interconnection contractual requirements from the non-interconnection issues and contract terms and conditions (including pricing) which could be included in a FIT."¹²³

tariff and should be limited to typical costs borne by developers.

¹²²HECO/CA Reply Brief, at 25.

¹²³HECO/CA Reply Brief, at 25.

The commission recognizes the difficulty in determining standardized interconnection processes for larger projects, but finds that FITs should not be bifurcated. Bifurcation will add a level of complexity and frustrate the goal of deploying projects quickly. The parties must attempt to determine an amount of interconnection cost that is appropriate to include in the FITs. They should include rates that cover the typical interconnection costs usually borne by the developer. This could be accomplished by including a description of interconnection rates in the FIT, which serves to maximize the FIT's transparency and predictability.

In attempting to develop tariffs for larger projects, the Parties should first determine and clearly state which costs developers must bear, and then, for each project size and technology, include rates in the FIT that cover those interconnection costs typically borne by developers.

The commission acknowledges the difficulty in assuming standardized interconnection processes for larger projects, but prefers that FITs contain a set cost for interconnection. The developer can then make the determination whether its project can proceed under the FIT rate. If a developer's interconnection costs are so high as to render use of the FIT uneconomical, it always has the option of negotiating a PPA with the utility.

c.

Curtailment

Most intervenors argue that compensation for curtailment should be included in the FIT rate.¹²⁴ However, estimating curtailment "is very difficult to do accurately" and would "require extensive modeling."¹²⁵

As isolated island grids, the HECO Companies' systems have no export outlet for excess energy, and, as such, where conditions with excess energy begin to develop, curtailment is required. The record in this docket, however, is insufficient to perform the difficult task of estimating the amount of curtailment that would result from or affect FIT projects, and to determine what, if any, compensation should be due the developer. The intermittent nature of the generation expected from FIT projects will in itself be one of the predominant causes of potential curtailment for both FIT projects and other renewable energy projects. The efforts of the HECO Companies to upgrade

¹²⁴DBEDT Opening Brief, at 64 (DBEDT argues that curtailment, "due to reasons such as minimum load conditions or due to must-run utility-owned generating units" should be included in FIT rates); Sopogy Opening Brief, at 5 (FIT projects "should be paid for any curtailment, thereby creating a necessary incentive for the utility to aggressively upgrade grid infrastructure to accommodate the targeted levels of renewable energy penetration."); Blue Planet Opening Brief, at Ex. A, at 10; Zero Emissions Opening Brief, at 37 ("projects should be compensated at FIT rates for all renewable energy that would have been generated and delivered to the utility but for curtailment").

¹²⁵HECO/CA Opening Brief, at 63 (estimating curtailment "would involve several uncertainties, including estimations of the anticipated energy production, future system demand, future generation additions which might contribute to curtailments and other system conditions").

their networks to accommodate additional non-firm energy will also be a determinant as to whether and to what extent curtailment become a significant problem for FIT developers.

In light of the uncertainties involved in estimating the level and effect of curtailment, without prior experience with the FIT process, the commission will not establish a compensation mechanism for curtailment of FIT projects at this point in time. The commission may revisit the curtailment issue during any subsequent periodic reexamination of the FIT process.

d.

Residual Value

Blue Planet and Zero Emissions argue that the FIT rate should not assume any residual value at the conclusion of the FIT term.¹²⁶ The commission agrees that FIT rate calculations should assume no residual value for projects at the conclusion of the FIT term. Though some projects could continue producing energy following the term of the FIT, the expected lives for many renewable energy technologies are uncertain, as is the degree of degradation of energy production or increased maintenance costs for the projects after the FIT term. Inclusion of a residual value in rate calculations would reduce the simplicity of the FIT and increase the degree of imprecision in setting initial rates to cover costs and provide a reasonable rate of return.

¹²⁶Blue Planet Opening Brief, at Ex. A, at 9; Zero Emissions Opening Brief, at 35.

e.

Renewable Energy Credits ("RECs")

Several intervenors argue that the project owner should receive the value of any RECs or other green attributes from FIT projects "because the project owner who took the risk in developing the renewable energy project is entitled to the rewards of the project."¹²⁷ In contrast, DBEDT argues that renewable energy purchased through a FIT should include the RECs or green attributes of such renewable energy. Put another way, DBEDT asserts that FIT rates should not impute any additional value for the green attributes purchased by the HECO Companies through FITs.¹²⁸ The HECO Companies and the Consumer Advocate agree with DBEDT's position on RECs.¹²⁹

The commission agrees with DBEDT, the HECO Companies, and the Consumer Advocate, that any RECs, carbon credits, or other green attributes associated with electricity production

¹²⁷Blue Planet Opening Brief, at Ex. A, at 12; Zero Emissions Opening Brief, at 39-40; see also SA/HSEA Opening Brief, at 24.

¹²⁸DBEDT Opening Brief, at 62-63; see also HREA Opening Brief, at 20 ("in pricing the FiT payment rate, the potential value of RECs should not be included at this time, in large part given the uncertainty in the value and marketability of RECs in Hawaii"); HECO/CA Reply Brief, at 33-37 (citing the *Regulator's Handbook on Tradable Renewable Certificates* for the proposition that "utilities cannot claim renewable resources to be part of their system mix if another party retains ownership to the RECs").

¹²⁹HECO/CA Reply Brief, at 36-37; see also HECO/CA Opening Brief, at 74 ("Any environmental credit associated with renewable energy purchased by the utility from the developer would be the property of the utility, provided, however, that such environmental credits should be to the benefit of the utility's ratepayers in that the value should be credited 'above the line.'").

from FIT projects inure to the utility for the benefit of ratepayers. The purpose of the FIT is to increase renewable energy generation and to satisfy the utility's RPS. Resale of the RECs would not support any additional renewable energy capacity and could potentially result in double counting.

In addition, FIT pricing should cover project costs and provide a reasonable return. Were the commission to award any RECs or other green attributes to project owners without building their value into FIT rates, the returns earned on such projects could be excessive. Moreover, due to uncertainty in potential state and federal climate change policies and the developing voluntary market for RECs, the inclusion of an estimated REC value in FIT rate calculations would decrease the accuracy with which FIT rates reflect project costs and provide a reasonable rate of return.

f.

Rate of Return

Without specifying any specific rate of return, some intervenors argue merely that the rate of return for FIT projects should be "sufficient to induce rapid development of large-scale renewable generation at low cost to the ratepaying public" and that the "returns for different projects will reflect varying risks and costs of capital for different technologies used by such projects."¹³⁰

¹³⁰Zero Emissions Opening Brief, at 30-31; see also Blue Planet Opening Brief, at Ex. A, at 6-7.

Similarly, SA and HSEA argue that the "HECO Companies' 10.67 percent riskless profit level should serve as a sub-baseline level of reasonability."¹³¹ Likewise, HREA asserts that developers "should have a rate of return not less than HECO's guaranteed 10.6% adjusted for developer risk."¹³²

In response, the HECO Companies and the Consumer Advocate point out that HECO's authorized rate of return is not "guaranteed" and "is a complex and detailed matter which is premised in large part upon a full disclosure of the utility's costs and revenues, and incorporates as part of that analysis consideration of the various risks facing the utility."¹³³ The HECO Companies and the Consumer Advocate recommend that the correct rate of return be determined using appropriate data supported by documentation which demonstrates that the data is accurate, reliable and relevant to the Hawaii market.¹³⁴

Given the dearth of information in the record to support a commission finding on rate of return, the commission will defer a decision on this issue pending the tariff phase of this proceeding where the parties will have another opportunity

¹³¹SA/HSEA Opening Brief, at 12.

¹³²HREA Opening Brief, at 17.

¹³³HECO/CA Reply Brief, at 21 ("This is far different from the situation facing a private entity which could in fact have an entirely different risk profile than a utility, including lower risks that would allow it to reap significant profit using a utility authorized rate of return").

¹³⁴HECO/CA Reply Brief, at 21; HECO/CA Opening Brief, at 55.

to demonstrate to the commission's satisfaction that the rate of return being incorporated into the FIT rates is reasonable, as recommended by the HECO Companies and the Consumer Advocate.

2.

Rate Structure

a.

Levelized Rates

Most parties appear to propose a FIT that utilizes levelized rates. Blue Planet and Zero Emissions, for example, argue that "FIT rates should be levelized over the twenty year FIT term" and "should not account for inflation" on the ground that "[i]t is up to the project investor to decide whether the levelized FIT rate provides an adequate return based on the investor's inflation expectations."¹³⁵ Similarly, the HECO Companies and the Consumer Advocate "recommend using a model that uses a Discounted Cash Flow ("DCF") analysis methodology to assess cost of generation and the return on investment ("ROI") and Internal Rate of Return ("IRR") for the project over the life of the system."¹³⁶ According to the HECO Companies and the Consumer Advocate:

This model would produce results that calculate the Levelized Cost of Energy ("LCOE"). The LCOE is a measure of total costs of a system (over its expected lifetime) divided by the expected energy output (over its useful lifetime), with appropriate adjustments for the time value of money. The LCOE provides a useful

¹³⁵Blue Planet Opening Brief, at Ex. A, at 10; Zero Emissions Opening Brief, at 37.

¹³⁶HECO Opening Brief, at 57-58.

mechanism to compare the cost of energy across different technologies. On a simplified basis, LCOE is the net present value of total life cycle costs divided by the quantity of the energy produced over the life of the project.

The DCF approach accounts for a comprehensive set of financial cash flow and tax inputs as well as performance characteristics in a financial model over a specified period of time. The analysis considers cash flows over the project's assumed economic life. If the contract duration is shorter than the assumed economic life, assumptions must also be made about the residual revenue stream for the remainder of the project economic life.

The inputs that go into the model include installed capital costs, general excise taxes, federal and state tax incentives, federal and state depreciation provisions, fixed and variable O&M expenses, fuel costs (if any), cost of financing, land costs or leases, insurance, transmission and interconnection costs, net capacity factors, estimated project life and projected generation degradation. We also should include ancillary service costs to provide power backup or other transmission or distribution services, if appropriate. These types of services will vary widely depending on the project and location. Using this methodology, the tariff energy rate can be set to target a specific IRR which the Commission deems to be reasonable.¹³⁷

With respect to inflation, the HECO Companies and the Consumer Advocate note that, "the DCF approach accounts for a comprehensive set of financial cash flow and tax inputs as well as performance characteristics in a financial model over a specified period of time, including estimates of ongoing costs (fixed and variable O&M expenses, fuel costs, replacement parts, etc) both initially and as they change (escalate) over time."¹³⁸

¹³⁷HECO/CA Opening Brief, at 57-58.

¹³⁸HECO/CA Opening Brief, at 70.

Having reviewed the record, the commission finds that FIT rates should be levelized and thus constant over the FIT term. The HECO Companies shall establish rates based on the DCF methodology described on pages 57 and 58 of the HECO Companies and the Consumer Advocate's opening brief. Levelized rates, common among power purchase agreements, provide a fixed revenue stream to developers. Such payments align with fixed payments for loans that many developers rely on to help finance projects.

The commission considered having FIT rates increase at a fixed rate each year as described on pages 27 and 28 of HDA's opening brief. Such rates would start lower than levelized rates, and increase over time. They would reduce potential early ratepayer consequences from the FIT. Non-levelized rates would also avoid the intergenerational inequity of levelized rates, for which rates are constant, but the inflation-adjusted value of rates (and ratepayer costs) is higher at the beginning of the FIT term than at the end. Non-levelized rates, however, would introduce additional complexity into the process of setting rates. Additionally, they would provide lower revenues in the early years of project operations, potentially lengthening the time it takes for investors to reach target returns. Longer time frames needed to reach target returns could in turn make it more difficult for developers to secure equity investment or increase investors' required returns. Additionally, lower revenues early on could affect the amount of debt that developers can assume.

b.

Technology and Size-Differentiated Rates

Most parties argue that FIT rates should vary by technology or resource type, and by project size.¹³⁹ The commission agrees. Rates paid to FIT projects should vary by technology and project size, as set forth below:

Tier	Project Size
1	0-20 kW on all islands
2	Greater than 20 kW and up to and including: PV: 500 kW on Oahu, 250 kW on Maui and Hawaii, and 100 kW on Lanai and Molokai; CSP: 500 kW on Oahu, Maui, and Hawaii and 100 kW on Lanai and Molokai; In-line hydropower and onshore wind: 100 kW on all islands
3	Greater than Tier 2 maximums and up to and including the lesser of 5 MW on Oahu and 2.72 MW on Maui and Hawaii or 1% of the system peak load from the previous year, except that wind generation is precluded on Maui and Hawaii

If appropriate, within a tier, FITs may be differentiated by system size as warranted by technical requirements or where there are recognizable differences in typical project costs.

¹³⁹DBEDT Opening Brief, at 58 ("FIT rates should be differentiated . . . by resource type or technology, by project size"); Sopogy Opening Brief, at 11 ("FIT rates should be based on installed cost and may therefore vary by" technology and project size).

C.

Location-Differentiated Rates

Most parties argue that FIT rates should differ based on island.¹⁴⁰ The FIT, however, will not feature different rates for each island. Instead, rates should cover the cost of and provide a reasonable return for typical projects on Oahu, although they will apply to other islands as well. Oahu contains the vast majority of Hawaii's electricity consumption and has the largest FIT cap. Oahu also features much lower current renewable energy penetration levels than the other islands and is better able to accommodate additional intermittent generation. It is thus essential that rates be appropriate for Oahu.

While location-differentiated rates would encourage geographic diversity of FIT projects by ensuring that rates covered costs and provided a reasonable rate of return for projects on each island, they would also, however, raise the number of rates, increase the difficulty in accurately setting initial rates and adjusting rates in the future. Additionally, uniform FIT rates across all islands better encourage developers to locate projects where they are least cost than would location-differentiated rates. The commission may reevaluate the use of different rates for different islands in the first periodic reexamination.

¹⁴⁰Zero Emissions Opening Brief, at 36 ("Different FiT rates for each island should be created for PV solar and CSP, and should not be created for other renewable energy technologies"); Blue Planet Opening Brief, at Ex. A, at 10; DBEDT Opening Brief, at 58 ("FiT rates should be differentiated by island"); Sopogy Opening Brief, at 11 ("FIT rates should be based on installed cost and may therefore vary by" island).

d.

Time-Differentiated Rates

None of the parties appear to argue that time-differentiated rates should be included in the initial FIT.¹⁴¹ Sopogy, however, does argue that, "[w]hile it may be too difficult to implement in the initial FIT program (first 2 year period), the goal should be to quickly move to a FiT payment schedule based on time-of-use rates" to "create incentives for projects with technologies that would deliver energy to the grid when most valued/needed by the utility to meet peak demand."¹⁴²

The commission agrees that, while time-differentiated rates certainly merit consideration in the future, they are not appropriate for the initial FIT. While the commission recognizes that time-differentiated rates elsewhere have encouraged the development of projects that provide electricity during the peak periods when it is most valuable, they would be problematic for a FIT attempting to provide a specific return for all projects. If rates were time-differentiated, the entity calculating them would need to estimate the timing of electricity production from each type of renewable energy project in order to determine how much of the production would occur during peak and

¹⁴¹Zero Emissions Opening Brief, at 36 ("The initial FiT rates should not be time-differentiated because time-differentiation of FiT rates, in the absence of a well thought-out system of time-differentiated rates applicable to all energy purchases by the utility, would be likely to add to the complexity and impair the cost-effectiveness of the FiT."); Blue Planet Opening Brief, at Ex. A, at 10.

¹⁴²Sopogy Opening Brief, at 5.

off-peak periods. The added complexity and potential inaccuracy of time-differentiated FIT rates outweighs the benefit of encouraging the development of on-peak generation. Accordingly, the commission finds that initial FIT rates should not vary based on the time of day of electricity production.

e.

Adjustments for System Benefits or Lack Thereof

The HECO Companies and the Consumer Advocate argue that, depending upon the system to which it connects, reliability benefits such as being utility dispatchable or curtailable, or having low-voltage/low-frequency ride-through capabilities, may be required in order to allow the generation on the system.¹⁴³ As an example, they cite to the HELCO grid and state that, "the high amount of variable generation already on the system will likely require that all inverter-based systems 30 kW and larger implement expanded under-frequency ride through."¹⁴⁴ The HECO Companies and the Consumer Advocate propose that, where a particular requirement is optional, a base tariff rate by technology will be paid to generation projects that have grid-friendly features capabilities, and the base FIT will be adjusted downwards for renewable energy systems that do not have these features. For example, a lower rate may be paid to systems that are not curtailable, since they do not provide as much flexibility from a grid operability standpoint and may actually

¹⁴³HECO/CA Opening Brief, at 67.

¹⁴⁴HECO/CA Opening Brief, at 67 n.8.

impose more costs on utility ratepayers, (e.g., by causing curtailment of other, less expensive energy sources)."¹⁴⁵

In contrast, Zero Emissions and Blue Planet argue that initial FIT rates should not account for reliability benefits or lack of such benefits from certain projects and/or technologies "because reliability benefits are a return to the utility and ratepayers, not to the project developer."¹⁴⁶

The commission understands the concerns articulated and is hesitant to have projects excluded from the FIT for reliability reasons if those concerns can be addressed through independent rates, adders, or penalties based on project system benefits or lack thereof. For example, the commission will allow the parties the flexibility to propose appropriate FIT rates to address the HELCO situation described above. The commission will also consider, if needed, a FIT tariff that proposes a lower FIT rate for generators that do not have the ability or the willingness to curtail output upon the utility's request. In sum, the commission will consider adjustments for system benefits or lack thereof.

¹⁴⁵HECO/CA Opening Brief, at 67.

¹⁴⁶Zero Emissions Opening Brief, at 36 ("If, however, the Commission wants to encourage especially rapid development of firm or dispatchable renewable generation projects that provides reliability benefits, the Commission might set initial FiT rates which incorporate a premium for technologies and project sizes that provide such reliability benefits"); Blue Planet Opening Brief, at Ex. A, at 10.

Process for Determining Rates

To determine rates that are just and reasonable, credible cost and operating information will be required.¹⁴⁷ DBEDT argues that "[t]he preferred cost data is the cost of Hawaii-based or Hawaii-specific projects" but to the extent that Hawaii-specific cost data is not available, "secondary data sources for industry costs" adjusted to reflect the Hawaii market may be utilized.¹⁴⁸ Zero Emissions and Blue Planet recommend that, "[i]f the Commission decides to calculate FiT rates based on cost and performance information, the Commission should gather and analyze Hawaii-specific cost information, possibly with the help of an independent consultant."¹⁴⁹

¹⁴⁷HECO/CA Opening Brief at 52-53; NRRI Paper at 5; Sopogy Opening Brief, at 10 ("To set proper rates that are just and reasonable, therefore, requires that industry provide to the Commission (under protective order) either Hawaii specific cost data or cost data from other locations that then factors in Hawaii's specific costs for development, operations and maintenance").

¹⁴⁸DBEDT Opening Brief, at 62 ("The cost and/or purchase power rates of existing renewable projects in Hawaii may be used to test the reasonableness of the secondary sources of data. Information provided in unsolicited proposals from project developers received by HECO Companies may be used by the Commission in assessing the reasonableness of any proposed FiT rates and aid in the Commission's decision making without necessarily violating the confidential nature of such information. The information submitted to the Commission by the intervenor-developers in the docket also provides market-referent information that the Commission may use in assessing the reasonableness of any proposed FiT rates.").

¹⁴⁹Zero Emissions Opening Brief, at 32; Blue Planet Opening Brief, at Ex. A, at 7.

In evaluating the justness and reasonableness of proposed FIT rates, the commission will look most favorably on those based on Hawaii-specific cost and performance data, followed by mainland cost and performance data. The commission encourages the use of existing Hawaii PPAs and accepted competitive bids to evaluate the reasonableness of cost-based rates.

While the commission understands the preference to have the commission or its consultant gather the cost information, the commission is concerned that such a process may be lengthy. The commission would need to retain an independent third party and that third party would need additional time to familiarize itself with the issues and this market. The utility, however, already possesses information about the rates for existing PPAs and accepted competitive bids. In addition, having negotiated existing PPAs, the utility should be familiar with typical interconnection and IRS costs.

Accordingly, the HECO Companies are responsible for developing the initial FIT rates in collaboration with the parties, and may employ independent consultants to assist them as needed in compiling cost of generation data and determining the amount of energy produced by typical projects. As with competitive bidding, any consultant retained by the utility should be required to be available and provide reports to the commission, as directed by the commission.¹⁵⁰

¹⁵⁰ See, e.g., Part III.C.6 of the Framework for Competitive Bidding.

D.

Non-Rate Terms and Conditions

1.

Term

The parties have agreed on a FIT term of twenty years.¹⁵¹ This term is common for renewable energy PPAs and has been employed in FITs in other jurisdictions.¹⁵² While the commission considered having FIT terms correspond to the expected lives of various technologies, it determined that the simplicity of a uniform twenty year term for all projects was preferable.

2.

Legal Obligation to Sell Energy

Zero Emissions and Blue Planet argue that FIT projects should have no obligation to sell renewable energy to the utility for the duration of the FIT term since "the loss of revenue from a failure by the FiT participant to deliver renewable energy to the utility is penalty enough."¹⁵³ The commission, however, disagrees.

As a condition of FIT participation, projects must sell all electricity, above any electricity produced for self generation, that they produce to the utility for the entire

¹⁵¹DBEDT Opening Brief, at 65; Sopogy Opening Brief, at 11; HREA Opening Brief, at 20; Zero Emissions Opening Brief, at 37; Blue Planet Opening Brief, at Ex. A, at 11; HECO/CA Opening Brief, at 71.

¹⁵²See DBEDT Opening Brief, at 65-66.

¹⁵³Zero Emissions Opening Brief, at 42; Blue Planet Opening Brief, at Ex. A, at 13.

FIT term. They cannot sell electricity to third parties or attempt to renegotiate with the utility during the term. If participants are able to leave the FIT before the end of the term, they might attempt to renegotiate for higher rates if the future value of wholesale electricity exceeds the FIT rate. This practice would deny ratepayers the benefits of potentially paying less for energy under the FIT in the future than the market value of that energy in the future. Unexpected FIT departures would also impede utility planning.

As discussed in Section II.A.2.a, net energy metered projects can opt to sell excess generation at FIT rates and purchase electricity at retail rates on a real-time basis. Project owners can, even without NEM, elect to use their generated electricity themselves. The commission sees a value to the system in self-generation. Project owners not eligible for NEM can sell electricity they do not consume to the utility at FIT rates. They cannot, however, sell excess electricity from FIT projects to third parties.

Projects above 20 kW (i.e., Tiers 2 and 3) must also provide at least three months advance notice to the utility and the commission prior to ceasing operation for reasons other than *force majeure* events or be subject to penalties. This provision prevents sudden departures of anticipated generation and the resulting cost and reliability consequences. This requirement does not apply to projects of 20 kW or less (i.e., Tier 1), given

their limited individual potential system effects and the undue burden it would place on residential or small business project owners.

3.

Standard Offer Contracts

The HECO Companies and the Consumer Advocate argue that "the appropriate vehicle to document the terms, conditions, and obligations between the developer of the renewable resource and the utility is a standard offer contract."¹⁵⁴ The commission agrees. Accordingly, to the extent possible, the utility should provide standard offer contracts with commission-approved FIT rates and mandated terms and conditions. Except where the commission has dictated specific terms and conditions, the terms and conditions of the standard offer contracts should, to the extent possible, closely match those of existing negotiated PPAs.

Since the FIT is only an offer of a contract, a contract will still be necessary to bind seller and buyer. If the commission has approved the standard contract, and if the contract between the parties conforms to the standard contract, and if the quantity and price terms are consistent with the commission-approved quantity cap and prices, there is no legal or practical need for the commission to review and approve the actual contract. The utility, however, should still file the contract with the commission for notification purposes. This will significantly streamline the FIT process.

¹⁵⁴HECO/CA Opening Brief, at 71.

4.

Information Filing Requirements

a.

Utility

DBEDT recommends that the commission require the HECO Companies and FIT project owners to file annual reports with the commission. Specifically, DBEDT proposes that each utility file an annual report on a calendar year basis detailing the following:

- (a) Number of project applications received by island, by resource type, by project size, and interconnection process (Rule 14H or IRS at sub-transmission level).
- (b) Number and status of projects currently in the queue by island, by resource type, and by project size.
- (c) Number of projects completed, interconnected, and contract signed by island, by resource type, and by project size.
- (d) Total kilowatt-hour purchased through FiTs during the calendar year by island, by project, and by project size.
- (e) Total amount in dollars of the power purchased through FiTs during the calendar year by island, by project, and by project size.
- (f) Number and duration of curtailments and the reason for each curtailment during the year by island and by project.
- (g) Program administration information such as the time spent to complete processing a project application from date of receipt of contract application to interconnecting the project in the system - by island, by resource type, and by project size.¹⁵⁵

¹⁵⁵DBEDT Opening Brief, at 72.

In response, the HECO Companies state that they "believe it is appropriate to provide periodic reports" to the commission on the overall status of the FIT program, as directed by the commission.¹⁵⁶ The commission will direct the HECO Companies to file status reports on the progress of the FIT program that contains the information outlined above. Such reports are due on January 31 of each year and shall be filed in this docket.

b.

FIT Project Owner

With respect to FIT projects, DBEDT recommends that the FIT tariff specify an annual reporting requirement on renewable project developers to report the following information to assist in periodic reexaminations of the FIT program:

- (a) The cost of project design, permitting, and construction costs, including labor and materials costs;
- (b) Financing or capital cost;
- (c) Land cost or actual cost of site acquisition;
- (d) Interconnection and metering costs incurred by the project developer;
- (e) Other project costs incurred in developing and constructing the project;
- (f) Tax credits, rebates, incentives received and applied to the project development cost;
- (g) Maintenance and operation labor and non-labor costs;
- (h) Fuel supply costs (for biomass and biogas projects);

¹⁵⁶HECO/CA Reply Brief, at 55.

- (i) Monthly land or site leases; and
- (j) Other operations and maintenance costs.¹⁵⁷

The commission agrees with DBEDT that owners of FIT projects above 20 kW (i.e., Tiers 2 and 3) must file in this docket, subject to protective order, the information listed above for each FIT project, within thirty days of the project entering service. This information will inform periodic reexaminations.

In addition, owners of projects over 20 kW must file an annual report with the commission in this docket (no later than January 31 of each year), which contains the following information: 1) annual electricity production in kWh; and 2) annual operating costs, including operations and maintenance costs, lease expenses, insurance, and property taxes. The commission will not require such annual filings from projects below 20 kW in order to prevent unduly burdening the owners of small projects.

5.

Rights and Obligations Following the FIT Term

An issue at the panel hearing was how projects should be compensated for energy sales following the expiration of the FIT term.¹⁵⁸ As a term of FIT participation, at the conclusion of the FIT term, projects must offer to sell their electricity to

¹⁵⁷DBEDT Opening Brief, at 73.

¹⁵⁸Cf. Sopogy Opening Brief, at 11 ("Sopogy supports a one-time 5-year extension, or at the option of the FiT provider, the right to negotiate a new FiT or other power purchase alternatives that may be available at that time"); HREA Opening, Brief, at 21.

the utility on an annual basis at a revised FIT rate appropriate for the specific project.¹⁵⁹ The utility will have no obligation to purchase after the FIT term, and must exercise its option to purchase by notifying the project owner of whether it will exercise this option no less than six months prior to the conclusion of the FIT term. This period provides project owners with sufficient opportunity to negotiate new rates with the utility or find another buyer, if possible.

If the utility does not exercise this right, project owners have the right to sell electricity from their projects at any rate that they may agree to, or to sell electricity at the PURPA avoided-cost rate to the utility, if they are eligible to do so.

FIT rates seek to cover project costs and provide a reasonable return over the FIT term. Therefore, the commission finds it unnecessary to entitle project owners to specific rates at the conclusion of the FIT term or to provide them with complete freedom to seek market rates. The ability to continue receiving FIT rates or sell electricity at market rates at the conclusion of the FIT term will also motivate project owners to continue optimizing project performance, thereby maximizing renewable energy production. It would also assist the utility in planning as the utility would know the projects from which it has an option to continue purchasing electricity.

¹⁵⁹HECO/CA Opening Brief, at 72.

E.

Queuing and Interconnection

Many intervenors argue that "first ready, first-served" queuing procedures similar to those adopted by the Midwest ISO or the California Solar Initiative should be utilized.¹⁶⁰ In contrast, the HECO Companies and the Consumer Advocate state that,

Applications for FITs will be taken on a first-come, first-served basis. With the extent that enough applications for a FIT are filed to meet or exceed the island-specific annual capacity limit, and the cumulative capacity limit, the HECO Companies propose to submit a letter to provide appropriate notice to the Commission. Applications for a FIT will continue to be accepted and placed on a waiting list, also in order of when the application is filed. Generators on the waiting list will proceed should generators who have entered into a contract under a FIT withdraw or fail to meet deadlines for coming into operation, as is discussed later in this proposal. More applications for the FIT may also be undertaken in the future during the policy review of the FIT and from reviews of the annual and cumulative capacity targets.¹⁶¹

Here, the commission declines to dictate specific queuing and interconnection procedures for FIT projects at this time. Instead, the commission will direct the HECO Companies to collaborate with the other parties to craft queuing and interconnection procedures that will minimize delays associated

¹⁶⁰See Zero Emissions Opening Brief, at 39; Blue Planet Opening Brief, at Ex. A, at 12; HREA Opening, Brief, at 21; Sopogy Opening Brief, at 12.

¹⁶¹HECO/CA Opening Brief, at 77. In their reply brief, the HECO Companies and the Consumer Advocate state that, "[f]or the purpose of the FIT system level limits, the queuing could be on the basis of first ready, first to connect but must also incorporate the up-front costs associated with this process." HECO/CA Reply Brief, at 38.

with numerous potential FIT projects and the various interconnection studies they could require. Such procedures should include project development milestones to advance in the queue and deposits for applicants. Queuing and interconnection procedures should also include a mechanism for applicants to apply for extensions for the amount of time needed to meet project development milestones prior to dropping from the queue or forfeiting their deposits. Such procedures should mitigate the added risks associated with required deposits but maintain the incentive for only viable projects to apply for interconnection studies.

An independent third party, similar to the Independent Observer in the commission's Competitive Bidding Framework, should oversee the queuing process for FIT projects. The independent third party will assist in developing the queuing process, and inform parties of the queue length and their status in it. The independent third party will also monitor how the utility administers the queue. With respect to the independent third party, the commission adopts the following language from the Competitive Bidding Framework:

The electric utility shall: (a) identify qualified candidates for the role of Independent Observer (and also shall consider qualified candidates identified by the Commission and prospective participants in the competitive bidding process); (b) seek and obtain Commission approval of its final list of qualified candidates; and (c) select an Independent Observer from among the Commission-approved qualified candidates. The electric utility's contract with the Independent Observer shall be acceptable to the Commission, and provide, among other matters, that the Independent Observer: (a) report to the Commission and carry out such tasks as directed by the Commission, including the tasks described in this [the FIT]; (b) cannot be

terminated and payment cannot be withheld without the consent of the Commission; and (c) can be terminated by the Commission without the utility's consent, if the Commission deems it to be in the public interest in the furtherance of the objectives of [the FIT] to do so. The utility may recover prudently incurred Independent Observer costs from its customers upon approval of the Commission in a rate case or other appropriate proceeding, and may defer the costs prudently incurred for the Independent Observer (i.e., deferred accounting).

While the commission prefers that the HECO Companies file queuing and interconnection procedures with the commission before FIT rates take effect, the commission will entertain an alternate proposal from the parties within fourteen days of the date of the Decision and Order.

F.

Utility Financial Issues

The HECO Companies and the Consumer Advocate argue that, "Parties to the HCEI Agreement process, other than the HECO Companies and Consumer Advocate, proposed that 10% of the utility's purchases under any FIT PPA should be included in the utility's rate base through 2015 as a means of restoring the financial profile of the utility and to enable it to undertake the FIT. The intent of the proposed rate base treatment was to address investor risks associated with imputed (or actual) debt."¹⁶² DBEDT, however, disagrees that inclusion of a percentage of FIT purchases in rate base was intended to compensate the utility for the financial consequences of the FIT program; instead, DBEDT asserts that the program was intended to

¹⁶²HECO/CA Opening Brief, at 75.

"compensate the utilities for the potential zero growth in their generation rate base."¹⁶³ In either case, the commission finds it inappropriate to include purchased power expenses in utility rate base, which, by definition, are for capital expenditures and not expenses.¹⁶⁴

Alternatively, in lieu of the utility earning any return on purchased power, the HECO Companies and the Consumer Advocate request that the FIT agreement "limit[] the utility's liability under the FIT agreement to the amount that the utility recovers in its rates" in which case "the HECO Companies' payments to the customer-generator would be limited to the amounts recoverable in the purchased power (or other direct cost recovery) clause."¹⁶⁵

As a general statement, the intervenors agree that the HECO Companies should be assured of cost recovery for their FIT renewable energy purchases.¹⁶⁶ Most parties appear to support cost recovery through the HECO Companies' Energy Cost Adjustment Clause ("ECAC") or other similar mechanism.¹⁶⁷ DBEDT recommends

¹⁶³DBEDT Opening Brief, at 75.

¹⁶⁴Tr. Vol. II at 30 (Ohashi) (agreeing that in traditional ratemaking, expenses are not included in rate base).

¹⁶⁵HECO/CA Opening Brief, at 76.

¹⁶⁶See Zero Emissions Opening Brief, at 40; Blue Planet Opening Brief, at Ex. A, at 12-13;

¹⁶⁷Sopogy Opening Brief, at 11 ("Sopogy supports HECO's recovery of FIT payment through" ECAC and would also support a FIT surcharge or inclusion of payments in a Clean Energy Infrastructure Surcharge); HREA Opening, Brief, at 21. While referenced in the Energy Agreement, no request has been made by the HECO Companies to approve a Clean Energy Infrastructure Surcharge ("CEIS"). The commission, however, does have pending a

that the HECO Companies be allowed to recover the costs relating to FIT purchases through "a Purchased Power Surcharge similar to the current ECAC, subject to PUC approval."¹⁶⁸ According to DBEDT, the "current ECAC mechanism already includes the recovery of the purchased energy costs (i.e., purchase power costs paid for kilowatt-hours purchased), but does not include recovery of purchased capacity costs (i.e., purchased power costs paid for kilowatt capacity)."¹⁶⁹ DBEDT states that "allowing the utilities such an automatic cost recovery mechanism will at least put the utilities' renewable power purchases on a level playing field with the utilities' purchases of imported fossil fuel which are allowed automatic cost recovery through the ECAC."¹⁷⁰

The issue of whether the commission should approve a purchased power surcharge for HECO is currently pending in HECO's 2009 rate case, Docket No. 2008-0083, which is set for hearing in October 2009. As such, it would be inappropriate to decide the issue of whether to allow such a surcharge here. The commission, however, will allow the HECO Companies to recover the energy cost component of a FIT through their ECAC, provided that the sale of FIT energy to the HECO Companies is pursuant to

request to approve a Renewable Energy Infrastructure Surcharge ("REIS") in Docket No. 2007-0416. As with the purchased power surcharge referenced by DBEDT, it would be inappropriate to approve inclusion of costs in a surcharge that has not been approved by the commission.

¹⁶⁸DBEDT Opening Brief, at 76.

¹⁶⁹DBEDT Opening Brief, at 76.

¹⁷⁰DBEDT Opening Brief, at 77.

a commission approved standard offer contract approved by the commission, or other FIT contract approved by the commission.

The commission also agrees with DBEDT that "[a]ny other utility costs related to FiTs, such as the administration costs including the application review, interconnection review, cost of interconnection borne by the utilities, and management and implementation of the queuing process should be recovered in each utility's rates through the normal utility rate case filings."¹⁷¹

G.

Compensation for Curtailment of Existing Projects

Owners of existing renewable energy projects shall receive no compensation for curtailment through this proceeding. As noted by Zero Emissions, "[d]istinguishing curtailment arising from introduction of FiTs, from curtailment that would have occurred without the introduction of FiTs, would likely be a complex and contentious task."¹⁷² In addition, the rights and obligations of these projects are defined in their existing contracts.¹⁷³ Any relief from those obligations would need to be negotiated among the contracting parties and submitted to the commission for approval.

¹⁷¹DBEDT Opening Brief, at 77.

¹⁷²Zero Emissions Opening Brief, at 38-39.

¹⁷³See Zero Emissions Opening Brief, at 38-39 ("For existing PPA projects that do not switch to FiT rates, such projects should receive whatever compensation, if any, that is provided in the existing PPAs."); Blue Planet Opening Brief, at Ex. A, at 11.

H.

Periodic Reexaminations

On the issue of periodic reexaminations of the FIT, the parties generally agreed that such an examination should occur every two years.¹⁷⁴ The commission agrees and will direct a reexamination of the FIT two years after it becomes effective. Also referred to as a FIT Update by the parties, the periodic reexamination may focus on updating tariff pricing, applicable technologies, project sizes, any other matters relevant to the FIT, including queuing and interconnection procedures, curtailment compensation, and non-rate terms and conditions.

The two-year period prior to the first reexamination provides a sufficient period for developers to plan and construct projects while knowing the rates and conditions to which their projects will be subject. It is also short enough that the commission can respond to suboptimalities in the FIT or changes in conditions. The commission considered holding the first reexamination after one year, but concluded that it needed a longer time period of FIT operation on which to base its first periodic reexamination. Certain types of projects are also likely to take more than one year to develop, rendering that period insufficient to judge the FIT's progress. Additionally, frequent adjustments would add uncertainty to the FIT, increasing

¹⁷⁴Zero Emissions Opening Brief, at 38; Blue Planet Opening Brief, at Ex. A, at 11; but see DBEDT Opening Brief, at 71 ("recommends that the initial FiTs be subject to PUC evaluation and update annually during the initial 5 years, and every two (2) years for the next ten years until the PUC deems the FiT design to be sound").

developer risk. Frequent reexaminations would also unduly burden parties. To facilitate the reexamination process, the HECO Companies shall file a reexamination report two years following the effective date of the first FIT tariff.

The commission shall thereafter conduct periodic reexaminations every three years.¹⁷⁵ This period between reexaminations provides market stability, but enables the commission to adjust the FIT based on changes in conditions or suboptimality in the FIT's performance.

Between periodic reexaminations, the parties may petition for adjustments in FIT rates under very limited circumstances.¹⁷⁶ Such adjustments must respond to substantial changes in conditions that increase or decrease project costs or production such that rates are no longer just and reasonable because they provide substantially excessive or substantially insufficient returns. Changes must be of a large magnitude, or the commission will defer the request until the next periodic reexamination.

The commission will not consider amending FIT eligibility, caps, or non-rate terms and conditions between periodic reexaminations. Such determinations are not necessary to ensure that FIT rates are just and reasonable. They also

¹⁷⁵HECO/CA Opening Brief, at 72; Zero Emissions Opening Brief, at 38; Blue Planet Opening Brief, at Ex. A, at 11.

¹⁷⁶Zero Emissions Opening Brief, at 38 ("The Commission might consider allowing the parties to petition for changes in the FIT between re-examinations based on force majeure or extraordinary circumstances such as currency hyperinflation"); Blue Planet Opening Brief, at Ex. A, at 11; but see HECO/CA Opening Brief, at 73.

require a level of evidence and examination better suited for periodic reexaminations. Any changes to FIT rates will apply going forward to new FIT projects and will not adjust rates for existing FIT projects.

III.

SUBSEQUENT TARIFF PROCEEDING

In the regulatory schedule approved by the commission, as amended, the parties had the following remaining deadlines in this proceeding: 1) "Settlement discussions to apply PUC principles to actual tariffs" scheduled to begin August 2009; 2) Filing of Proposed Tariffs (and Standard Contract) and Alternative Tariffs" due on September 22, 2009; and 3) "Parties' Comments on Proposed Tariffs" due on September 30, 2009.

Given the timing of issuance of this Decision and Order, the commission directs the parties to submit a stipulated procedural schedule to govern the remainder of this docket within fourteen days of the filing of the Decision and Order. If the parties are unable to stipulate, each of them is directed to file a proposed order for the commission's review and consideration within the same deadline.

To the extent possible, the commission encourages the parties to focus on resolving the issues in Tiers 1 and 2, to facilitate the immediate implementation of FITs in those tiers.

IV.

ORDER

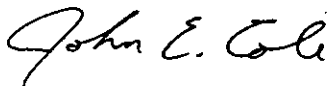
THE COMMISSION ORDERS:

The commission sets forth general principles for the implementation of FITs in the HECO Companies' service territories, as described above.

DONE at Honolulu, Hawaii SEP 25 2009.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By: 
Carlito P. Caliboso, Chairman

By: 
John E. Cole, Commissioner

APPROVED AS TO FORM:


Stacey Kawasaki Djou
Commission Counsel

2008-0273.laa

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

----- In the Matter of -----)
)
PUBLIC UTILITIES COMMISSION)
)
Instituting a Proceeding to)
Investigate the Implementation)
Of Feed-in Tariffs.)
_____)

Docket No. 2008-0273

DISSENTING OPINION OF LESLIE H. KONDO, COMMISSIONER

I respectfully dissent.

As the initial feed-in tariff ("FIT"), I would adopt the FIT program proposed by Hawaiian Electric Company, Inc. ("HECO"), Hawaii Electric Light Company, Inc. ("HELCO"), Maui Electric Company, Ltd. ("MECO") (collectively, the "HECO Companies") and the Division of Consumer Advocacy, Department of Commerce and Consumer Affairs ("Consumer Advocate"), with certain modifications, and would reexamine the program in two years as part of the first FIT update. In my opinion, the record does not support the project size limits or the system penetration caps established by the majority. Of greater concern, based upon the HECO Companies' unrebutted testimony, incorporating as-available renewable generation at the levels approved by the majority without substantial system improvements may adversely impact system reliability and may cause damage to customer and utility equipment.

I also do not believe that the majority adequately considered the potential ratepayer impact of the FIT, which cannot reasonably be determined until the specific FIT rates are approved by the commission. In my opinion, the amount that ratepayers are asked to bear to support more renewable energy cannot be without limits and should be one of the most important considerations, if not the most important, in designing a FIT program that is reasonable, prudent and in the public interest. Lastly, in contrast to the levelized rate structure supported by the majority, I would structure the FIT rates to incline during the term of the FIT contract.

I.

The Role of a Feed-in-Tariff

I agree with the majority that the State must reduce its overdependence on imported fossil fuels for its electric generation by acquiring and incorporating more renewable energy. I, however, disagree with the majority as to whether, based upon the record, a FIT is the best method to achieve that goal.

Until it is determined that the HECO Companies' systems can accommodate a much greater amount of as-available generation without extensive project-specific interconnection and other project-specific studies and costs, I am not persuaded that a FIT is the most appropriate vehicle for Hawaii at this point in time. In my opinion, a FIT should be designed to allow any eligible renewable resource to "plug-and-play," meaning that any eligible

renewable resource can interconnect to the grid through a streamlined and standardized process.

The record, however, reflects that, because of the unique characteristics of the island grids, as-available renewable projects larger than 500 kW (and, for some technologies, larger than 100 kW) are likely to require project-specific interconnection studies and involve more complicated project-specific interface requirements.¹ In other words, it is likely that very few -- perhaps none -- of the projects larger than 500 kW will be able to "plug-and-play." Rather, such projects will almost certainly proceed through a process to address project-specific interconnection and other unique issues, similar to the process currently used by the HECO Companies in negotiating purchase power agreements with prospective developers.

More importantly, before establishing the project size limits and levels of system penetration, the majority does not adequately consider how a FIT interacts with the numerous other renewable projects and cost recovery mechanisms that the HECO Companies are currently or will likely be considering. As Haiku Design and Analysis ("HDA") recognizes, it is difficult, if not impossible, to determine in a regulatory vacuum the specific role a FIT should play in the HECO Companies' acquisition of renewable energy.

¹See, e.g., Opening Brief of the HECO Companies and Consumer Advocate, filed June 12, 2009 ("HECO/CA Opening Brief"), at 29, 30.

It is difficult to address the issues of whether feed-in tariffs are prudent and just and reasonable, what caps and limits are appropriate and what pricing policies should be implemented without the context that would be provided by an overall plan sufficient to show how the pieces of the puzzle should best fit together, what alternatives are available, what mix of alternatives is optimal and how much it will all cost.²

* * *

In particular, there is still no generation and transmission system plan that identifies how much of each type of generation is compatible or necessary to accommodate new renewable generation. It is not known how much of each type of renewable generation can be accommodated. It is not known what measures, improvements and investments in utility system infrastructure would be necessary to accommodate various amounts of new renewable generation. It is not known when, whether or to what extent any measures being taken to accommodate substantial amounts of new renewable generation on the utility systems will be effective. There is no estimate of any sort of what impacts the proposed (or any other) feed-in tariffs will have on generation costs or retail rates. The rate impacts are entirely unknown.³

I agree with HDA that, before the commission is able to determine if a FIT program of the size approved by the majority is prudent and in the interest of the public, it is necessary that the commission, working with the HECO Companies, the Consumer Advocate and other interested parties, develop a thoroughly vetted comprehensive plan to achieve the State's RPS mandates and the goals set forth in the HCEI agreement. The importance of such planning, whether it be through an Integrated Resource Planning process or a Clean Energy Scenario Planning

²Haiku Design and Analysis Opening Brief filed June 12, 2009 ("HDA Opening Brief"), at 2-3.

³Haiku Design and Analysis Final Statement of Position filed March 30, 2009, at 1-2.

process, is patently evident given HECO's on-going efforts to integrate 100 MW of as-available renewable power through its recent Request for Proposals and 400 MW of wind energy from Lanai and Molokai. Those projects and the other renewable projects grandfathered under the Competitive Bidding Framework may add significantly more than 500 MW of as-available resources to a HECO system whose peak demand in 2008 was 1,227 MW.⁴ With over 40% of Oahu's future energy potentially generated from as-available resources, it is quite possible, perhaps even likely, that the FIT program established by the majority is neither prudent nor reasonable.⁵

Until the role of a FIT in the State's overall energy strategy is more clearly defined, I believe that the FIT program proposed by the HECO Companies and the Consumer Advocate is a reasonable, prudent and responsible first step. More specifically, in my opinion, the FIT program proposed by the HECO Companies and the Consumer Advocate will encourage more immediate renewable energy development; yet, because the amount of as-available renewable resources to be acquired through the proposed FIT is relatively small, the program likely will not detract from or work against the HECO Companies' on-going efforts to integrate renewable energy resources through other procurement vehicles. In two years, at the first FIT update, the commission

⁴Adequacy of Supply Report filed February 27, 2009.

⁵Given the significant amounts of intermittent energy already connected to the HELCO and MECO systems, I have similar concerns about the FIT program established by the majority for those systems.

will have an opportunity to reexamine the FIT program and, armed with significantly more information about the HECO Companies' systems and plans to address projected customer energy requirements, can more reasonably and responsibly decide the appropriate role for a FIT in achieving the State's energy goals.

II.

Project Sizes

The majority establishes a project size limit for FIT resources at the competitive bidding threshold, i.e., 5 MW for Oahu and 2.72 MW for Maui and Hawaii. In my opinion, those size limits are arbitrary and ignore the unrebutted and compelling evidence as to the amount of as-available resources that the HECO Companies' systems can safely accommodate.

The HECO Companies have substantial experience with their systems, including the challenges of integrating substantial amounts of intermittent resources. That fact is undisputed. As part of this docket, the HECO Companies have provided ample evidence, though their written pleadings as well as oral testimonies, that they cannot assure system security and power quality at the project sizes adopted by the majority without substantial system improvements.

[T]he average load on a 12 kV HECO circuit is 2-3MW. Thus a 500 kW project would represent approximately 20 percent of the load which is a significant amount of the load on the average circuit. Put another way, **increasing the proposed limit up to 5 MW as some in this proceeding have proposed would result in the potential generation on a circuit being almost twice the amount of the corresponding load on that circuit which would require modification to the protection schemes and voltage regulating equipment on those**

circuits. While it is possible to implement these types of modifications, they should not be undertaken without a demonstrated need or without an appropriate evaluation of the cost relative to the resource to be added - factors which are considered as a part of the utility's other procurement mechanisms for projects of this size.⁶

* * *

Project sizes of 2.75 MW on Maui would equate to 50% of some of MECO's largest circuits and represents approximately 1.5% of the peak generation and nearly 2% of the generation during typical daytime loads on both the MECO and HELCO systems.⁷

* * *

[G]eneration of this size has a significant impact on these systems as a whole, especially if it is non-dispatchable and therefore, would require modifications to the utilities' online regulating reserve. At this proposed size, HELCO would require monitoring and control capabilities in order to be able to insure grid stability and power quality.⁸

* * *

[A]bsent a thorough evaluation of these issues and appropriate actions to address any concerns, **the utility will not be able to assure system reliability and security.**⁹

In stark contrast, none of the other parties offered any credible evidence about the ability of the HECO Companies' systems to accommodate the project sizes of as-available renewable resources approved by the majority.¹⁰ Rather,

⁶HECO/CA Opening Brief, at 29 (emphasis added).

⁷Reply Brief of the HECO Companies and Consumer Advocate, filed on June 26, 2009 ("HECO/CA Reply Brief"), at 11.

⁸HECO/CA Reply Brief, at 11.

⁹HECO/CA Reply Brief, at 12 (emphasis added).

¹⁰Many intervenors provided suggestions regarding numerous technical issues, including the project size limits and system

the parties simply ignored the technical challenges that the HECO Companies must address to maintain system reliability when integrating substantial amounts of as-available energy. And, in my opinion, so does the majority.

The HECO Companies -- and the commission -- cannot disregard those issues. The HECO Companies are responsible for maintaining system reliability.¹¹ In my opinion, the commission must work with -- not against -- the HECO Companies as they work to "keep the lights on," and, absent compelling circumstances, should not create a situation where the HECO Companies' systems will likely be adversely impacted in ways that currently are unknown. As regulated utilities, the HECO Companies "are not able to simply propose an expansive FIT program and then wait and see what the impacts of that proposal might be."¹²

While I understand the majority's concern about the relatively small project sizes proposed by the HECO Companies and the Consumer Advocate, I do not believe that the commission

penetration caps; however, in my view, those suggestions offer the commission little, if any, value. On issues requiring specialized knowledge, especially those involving system reliability, the commission must base its decision on credible evidence, i.e., credible expert testimony. In my opinion, simply because a party "believes" that, for example, the HECO Companies' systems can accommodate more as-available energy is irrelevant and provides no value to the commission. In the future, to participate meaningfully on technical matters and other such issues requiring specialized knowledge, parties should provide the commission with evidence, not mere speculation or lay opinion, to support their respective positions and upon which the commission can base its decision.

¹¹See, e.g., General Order No. 7, Standards for Electric Utility Service in the State of Hawaii.

¹²HECO/CA Reply Brief, at 3-4.

should disregard the only evidence in the record, evidence which I find to be compelling, and arbitrarily establish project size limits simply to "fill th[e] gap" that currently exists between Net Energy Metering and the Competitive Bidding Framework.¹³

My difference with the majority on the project size limits may stem from a fundamental disagreement as to how a FIT is designed to work.¹⁴ As mentioned above, in my opinion, a FIT program should be "plug-and-play." It should allow any eligible renewable resource to connect to the system through a streamlined and standardized process. It should not involve project-specific interconnection and other non-standardized costs. In my view, such project-specific, non-standard costs are contrary to the primary purpose of a FIT, i.e., to provide a predictable, streamlined process to sell renewable energy to the utility.

Consistent with that vision of a FIT, the program proposed by the HECO Companies and the Consumer Advocate is designed to "avoid[] a complete bilateral negotiation and interconnection study for every project under the FIT."¹⁵

¹³Decision and Order, at 41.

¹⁴In the Order initiating this docket, the commission described a FIT as:

[a] set of standardized, published purchase power rates, including terms and conditions, which the utility will pay for each type of renewable energy resource based on project size fed to the grid.

Order Initiating Investigation, at 2.

¹⁵HECO/CA Opening Brief, at 40 (emphasis added).

[T]he proposed limits set forth in the Proposed FIT are established so that the established standards which the utilities are required to meet can continue to be met in the presence of a streamlined and standardized FIT process which will not require extensive study of each individual project to determine impacts and the ability of the utility to maintain the standards with the project on line.¹⁶

* * *

While it is possible to integrate larger sized projects on the HECO and other island systems, this requires appropriate analysis and resource and system modifications to address technical issues and ensure that reliability is not adversely impacted. This level of study and modification is not well suited to the standardization procedure that is desired as part of a FIT design which seeks to simplify and expedite the interconnection and contracting processes. Accordingly, it is necessary as part of the initial FIT design to incorporate reasonable limits on project size and system penetration.¹⁷

The majority acknowledges that the larger projects may not be able to "plug and play" and that, for such projects, "the interconnection costs and process [will] be less standardized."¹⁸ "However, the commission's desire to accelerate the adoption of renewable energy and reduce the State's dependence on imported fossil fuel outweighs this consideration."¹⁹

Notwithstanding the majority's expectation, I do not believe that the FIT program established by the majority will result in meaningful numbers of large renewable energy resources being quickly connected to the HECO Companies' systems. As the majority recognizes (but subsequently disregards), large projects

¹⁶HECO/CA Opening Brief, at 40.

¹⁷HECO/CA Opening Brief, at 30.

¹⁸Decision and Order, at 42.

¹⁹Decision and Order, at 42.

will not be able to "plug and play." Consequently, the program will not provide developers with a more streamlined and predictable process by which to sell renewable energy. With project-specific studies and costs virtually a certainty for projects larger than 500 kW, it is likely that the process will be substantively no different from that currently employed by the HECO Companies for projects of that size. Worse yet, the majority's FIT program may result in the utilities being able to accept **less** renewable energy over the long term, especially on the MECO and HELCO systems where there is already significant renewable penetration, as the HECO Companies will have less ability to require project-specific performance standards.

Finally, my disagreement with the majority on the maximum project sizes is not meant to suggest that I believe such sizes will never be appropriate for Hawaii. I simply believe that the commission should adopt a more measured and responsible approach in developing a FIT program, as suggested by the HECO Companies and the Consumer Advocate.²⁰

While some may criticize this approach as being too conservative, in my opinion, the record is insufficient to reasonably support the commission requiring the HECO Companies to incorporate large as-available resources via a FIT, especially given the utilities' continuing obligation to maintain system

²⁰HECO/CA FSOP, at 35 ("The FIT Proposal is intended as an interim starting point for what will eventually become a broad tariff offering to as many renewable technologies as is feasible"); see also HECO/CA Opening Brief, at 40 ("As more experience and information with the program is collected and evaluated over time, the Proposed FIT may be able to be expanded or modified[.]").

reliability. To provide the commission with a more complete record to decide whether modifications to the HECO Companies' and the Consumer Advocate's program are warranted, I would direct the HECO Companies to develop system reliability or other such objective standards to be used to reasonably determine the amount of as-available resources that can be safely accommodated without adversely affecting system reliability and invite the other parties to present expert testimony regarding, among other things, the appropriate project sizes for the respective island systems as part of the first FIT update. In my view, the majority's decision to require reliability standards prior to the first FIT update may not allow for sufficient consideration of those standards.

III.

System Penetration

In my opinion, the record does not support inclusion of a system penetration cap in the initial FIT. Rather, I would limit the amount of renewable resources acquired through a FIT to no more than 15% of the peak circuit demand for all distribution-level circuits of 12 kV or lower,²¹ as suggested by the HECO Companies and the Consumer Advocate.²² The

²¹In determining whether the 15% distribution circuit threshold has been met or exceeded, I would count all distributed generation projects interconnected to the specific distribution circuit, whether through a FIT, Net Energy Metering, a negotiated Purchase Power Agreement or other mechanism.

²²HECO/CA Reply Brief, at 21-22; see also Tr. Vol. 1, at 280-284 (Ishikawa). I also would require the HECO Companies,

HECO Companies and the Consumer Advocate explain that, "[t]his benchmark serves as a 'trigger' point at which it is reasonable to conduct a system study to insure that integration of the resource does not cause reliability, power quality or safety concerns."²³

I find the HECO Companies' and the Consumer Advocate's reasoned basis for such a limit to be responsible and persuasive. As they explain:

[T]he 15% limit discussed is used in the industry for the purpose of defining a threshold above which additional study is required to determine the impact of the aggregate distributed generation on the circuit to which it is connected and for larger penetrations, on the power system as a whole. This screening process is used to ensure that situations where generation is large enough relative to demand on the circuit . . . does not cause technical problems including damage to the generation and customers (sic) equipment on the circuit, as well as damage to utility equipment. This threshold does not preclude the addition of larger generators on distribution circuits, but does preclude them from being connected without additional study. This is a prudent measure and commonly accepted in the industry.²⁴

During the panel hearing, the HECO Companies further explained that the proposed aggregate limit of 15% per distribution circuit is the penetration level that the HECO Companies believe can be safely integrated.

through Locational Value Maps and other means, to disclose to prospective developers the type and amount of as-available renewable generation on a specific distribution circuit, including the amount that each generator on that circuit was curtailed within the preceding 12 months.

²³HECO/CA Reply Brief, at 21.

²⁴HECO/CA Reply Brief, at 15.

MODERATOR HEMPLING: . . . On HECO you're proposing to increase from 10 percent to 15 percent the feeder penetration threshold that triggers the additional technical study, correct?

MS. ISHIKAWA: [Y]es.²⁵

* * *

I think given the majority of the circuits on the system **that's a level that in engineering judgment is still reasonable and safe.** Safely we can integrate renewables in a standard type of way without all the technical study.²⁶

* * *

. . . . **that was a level that our distribution planners were comfortable in raising up to,** in order to, I guess, make an effort to try to increase or -- or standardize a process to, to -- to promote coming onto a grid.²⁷

Rather than limiting renewable penetration to a percentage of the peak demand on the distribution circuit, the majority establishes a system penetration cap of the "nameplate capacity equal to 5% of the 2008 peak demand for each of the HECO Companies."²⁸ Like the project size limits, the 5% system penetration cap is simply an arbitrary figure created by the majority.²⁹ None of the intervenors presented credible evidence, i.e., expert testimony, to establish the capacity of

²⁵Tr. Vol. 1, at 280-281 (Ishikawa).

²⁶Tr. Vol. 1, at 282 (Ishikawa) (emphasis added).

²⁷Tr. Vol. 1, at 283 (Ishikawa) (emphasis added).

²⁸Decision and Order, at 54.

²⁹The majority's system penetration cap is **in addition to** the amounts of as-available renewable energy that the HECO Companies must accept through the Net Energy Metering program, as well as as-available energy produced by customer-site distributed generation projects and independent power producers.

the HECO Companies' systems to accept as-available renewable resources. In fact, the commission is aware that as-available renewable resources on the HELCO and MECO systems are currently being curtailed.³⁰ The record is simply devoid of a reasonable basis to support the majority's system penetration cap.

Perhaps of greater concern is that the system penetration caps established by the majority make no distinction between distribution level resources and those interconnected at the transmission level. Based upon the record, I do not agree with the majority that a FIT-eligible resource should be allowed to connect to the transmission or sub-transmission system. The HECO Companies and the Consumer Advocate expressly warn against transmission level projects being eligible for the initial FIT. As they explain:

The Proposed FIT focuses on distribution level projects in part due to the complexity associated with evaluating transmission level projects and the fact that this complexity makes these size projects amenable to other procurement alternatives and not a streamlined, standardized FIT. Project interconnection

³⁰The project size limits and system penetration caps established by the majority will almost certainly result in greater curtailment on those systems for both existing as well as new resources. To attempt to address the curtailment problem, the majority allows the HECO Companies to refuse projects "that would likely face **significant** curtailment or cause **significant** curtailment for existing renewable energy generators." Decision and Order, at 44, 56 (emphasis added). Without any guidance as to what constitutes "**significant** curtailment," in my opinion, the majority is creating less predictability for developers and one more contested issue for the HECO Companies and, potentially, the commission. For existing generators already experiencing curtailment, any additional curtailment is significant. I believe that a prudently designed FIT program must consider the amount of additional curtailment that existing generators will likely experience as a result of a FIT, and the commission -- not the utility -- must determine whether such additional curtailment is reasonable.

issues at the transmission level are in many respects different from the interconnection issues which have been discussed in this proceeding for distribution level projects. The transmission issues are normally related to circuit capacity rather than demand since transmission is networked and the demand is shared among all transmission circuits based upon the system power flow.

* * *

The Joint Parties did not propose a FIT for transmission-interconnected resources because for the majority of these resources the Competitive Bidding Framework would apply and is a superior process again due to the complexity associated with interconnecting projects at the transmission level, as well as the difficulty associated with standardizing the terms and conditions for such projects. To the extent that such an expansion of the Proposed FIT is to be considered in a future FIT Update, **extensive study should be performed regarding system impacts potentially arising from the transmission connected generator and to insure that the transmission system infrastructure remains operable for contingencies and routine outages.**³¹

The record contains no evidence to refute the HECO Companies' representations about the imprudence of transmission level projects. For that reason, until the HECO Companies have fully evaluated and resolved the issues associated with connecting as-available resources at the transmission level or other compelling evidence is presented to the commission to support transmission level projects, I find that it is neither reasonable nor prudent to allow such transmission level projects to be eligible for the initial FIT.³² Until such evaluation is performed, the process necessary to connect a project at the transmission level will not be either streamlined or predictable.

³¹HECO/CA Reply Brief, at 30-32 (emphasis added).

³²HECO/CA Reply Brief, at 30-32.

IV.

Ratepayer Impact

In establishing a system penetration cap, I do not believe that the majority has sufficiently considered the potential ratepayer impact of the FIT program. In my opinion, to reasonably understand the ratepayer impact, the commission must know the specific FIT rates to be paid for each eligible technology.

The amount that ratepayers can currently be asked to pay to support the State's transition to a cleaner energy future cannot be without limits. I strongly believe that the goal of increasing renewable resources through a FIT program must be appropriately balanced with the impact on the ratepayer.

Without any information in the record about the specific rates to be paid for energy under a FIT, there is no means to determine the impact of the FIT on generation costs or retail rates. In other words, based upon the record currently before the commission, there is no basis for concluding that the increased costs to ratepayers as a result of the FIT program are just and reasonable.

The majority attempts to address the ratepayer impact by directing the HECO Companies "to refuse to interconnect projects that will substantially compromise reliability or result in an unreasonable cost to ratepayers."³³ The majority, however, provides no guidance to the HECO Companies as to what is

³³Decision and Order, at 43-44; see also Decision and Order, at 56.

"an unreasonable cost." More troubling, in my opinion, is the majority's shifting of the commission's statutory responsibility to the HECO Companies. It is the commission's responsibility, not the utilities', to decide whether a cost that ratepayers must bear is just and reasonable.³⁴

I believe that the ratepayer impact should be addressed through either a capacity cap **for each technology** or a price cap **for each technology**. However, until the commission has determined the rates to be paid under a FIT, the ratepayer impact is entirely unknown, and the commission cannot responsibly balance that impact with the benefits of a FIT program. I would direct the parties to address the ratepayer impact as part of their proposed tariff filings, which is the next phase of this docket. With that and specific rate information, the commission will be able to responsibly consider the ratepayer impact in determining the appropriate limit on the amount of FIT projects under the initial FIT program.

V.

Rate Structure

As opposed to the levelized rate structure established by the majority, I would structure the FIT rates to incline over time, with the net present value of the increasing price stream being identical to the normalized levelized prices. As HDA recognized:

³⁴Hawaii Revised Statutes § 269-16.

This would serve several beneficial purposes. It would reduce rate impacts in the early years of the contract period when FiT rates would tend to be higher compared to avoided costs. It would allocate the costs and benefits of the FiT contract more fairly between current and future ratepayers. It would reduce the incentive for energy generators to walk away from the FiT contract in later years when avoided costs are likely to be higher than the FiT rate and maintenance costs on aging projects become higher.³⁵

In my opinion, such a rate structure, as outlined in HDA's Opening Brief, which balances the purposes of a FIT and the impact on ratepayers, is a more reasonable and prudent approach. I would direct the parties, as part of their tariff filings, to suggest the appropriate escalation rate for the FIT price streams.

For the reasons stated above, I do not concur with the majority's Decision and Order. I am hopeful that, as part of the first FIT update, the commission, with the parties' assistance and cooperation, will further develop and refine the FIT program to more reasonably achieve the State's energy goals.

DONE at Honolulu, Hawaii **SEP 25 2009**_____.

By _____
Leslie H. Kondo, Commissioner

³⁵HDA Opening Brief, at 27.

CERTIFICATE OF SERVICE

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