BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of )
)
HAWAIIAN ELECTRIC COMPANY, INC. )
)
For Approval of a Solar Energy Purchase Agreement with Hoku Solar, Inc., and to Include the Purchased Energy Costs in Hawaiian Electric Company, Inc.'s Energy Cost Adjustment Clause. )

DOCKET NO. 2007-0425

DECISION AND ORDER NO. 24225

Filed May 13, 2008

At 1 o'clock P .M.

Karen Higashi

Chief Clerk of the Commission



ATTEST: A True Copy
KAREN HIGASHI
Chief Clerk, Public Utilities
Commission, State of Hawaii

Karen Higashi

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DECISION AND ORDER

By this Decision and Order, the commission approves the Solar Energy Purchase Agreement, dated November 16, 2007, between HAWAIIAN ELECTRIC COMPANY, INC. ("HECO")[1] and Hoku Solar, Inc. ("Hoku Solar" or "Seller"), and other related matters as described in the Application.[2]

[1]The Parties are HECO and the DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS, DIVISION OF CONSUMER ADVOCACY ("Consumer Advocate"), an ex officio party to this proceeding, pursuant to Hawaii Revised Statutes ("HRS") § 269-51 and Hawaii Administrative Rules ("HAR") § 6-61-62(a). Hoku Solar is not a party to this proceeding. HECO and Hoku Solar are collectively referred to as the "Contracting Parties."

[2]Application; Verification; Exhibits 1 - 7; and Certificate of Service, filed on December 27, 2007 (collectively, "Application").

I.

## Background

A.

### HECO and Hoku Solar

HECO is the franchised provider of electric utility service on the island of Oahu.

Hoku Scientific, Inc., is a publicly-traded company that was founded in the State of Hawaii ("State") in 2001. Hoku Solar, a division of Hoku Scientific, Inc., "is engaged in the development and installation of [photovoltaic ("PV")] systems in Hawaii, for the purposes of generating electricity for sale to customers through power purchase agreements, and/or for the PV systems to be sold to customers on a turn-key basis."[3]

B.

### Application

On December 27, 2007, HECO filed its Application, requesting that the commission:

1. Approve the Solar Energy Purchase Agreement, dated November 16, 2007, between HECO and Hoku Solar (the "SEPA" or "Agreement"), governing HECO's purchase of energy from a Hoku Solar-owned PV system with generating capability up to 300 kilowatts ("kW") dc ("kWdc") to be located on HECO's Archer Substation (the "Archer PV System" or "Facility"), at HECO's Ward Avenue complex;

[3]Application, at 3.

2. Find that HECO's purchased energy costs for the energy supplied by the Archer PV System are reasonable;

3. Find that the terms and conditions of the SEPA, governing HECO's purchase of energy from Hoku Solar, are prudent and in the public interest;

4. Authorize HECO to include the purchased energy charges and related revenue taxes that it incurs under the SEPA, to the extent that such costs are not included in HECO's base rates, in HECO's Energy Cost Adjustment Clause ("ECAC") for the term of the SEPA, pursuant to HAR § 6-60-6(2);

5. Allow HECO to include the reasonable costs incurred by HECO pursuant to the SEPA in its revenue requirements for ratemaking purposes and for the purpose of determining the reasonableness of HECO's rates; and

6. Approve the Site License Terms and Conditions, as set forth in Appendix G of the SEPA, pursuant to HRS § 269-19, in which Hoku Solar will use selected areas within the Archer Substation building solely for the purposes allowed under the SEPA.

HECO requests the commission's approval of the SEPA by May 13, 2008.[4]

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[4]With respect to the May 13, 2008 date, HECO explains:

> Due to the high demand for PV panels worldwide, up to 6 months is needed to procure and install the System equipment following Commission approval of the SEPA. The in-service date for the project must be before December 31, 2008, the current expiration date of the 30% Federal renewable energy investment tax credit. <u>Based on Congressional votes through December 13, 2007, the 30% Federal tax credit will not be extended beyond 2008</u>. If the tax credit is not extended and the System is placed

C.

The Archer PV System

As described in the Application:

> Pursuant to the SEPA, Hoku Solar will engineer, design, furnish, install, own, operate and maintain a PV electric plant including photovoltaic modules, inverters, Hoku Solar-owned interconnection facilities, and other related equipment located on the roof surfaces and in the adjacent mechanical room of HECO's Archer Substation, located within HECO's Ward Avenue complex. The SEPA includes a site license (Exhibit 1, Appendix G) that provides the terms and conditions for Hoku Solar's use of this HECO facility.
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> The Hoku Solar-owned equipment to be used in the Archer PV System includes photovoltaic panels and associated wiring, inverters and associated mounted hardware, photovoltaic panel racking and mounting structures along with suitable roof sealing devices, all system wiring and conduit, and web-capable data monitoring and interface equipment. HECO-owned equipment includes a 480V circuit breaker, meter socket and a current transformer ("CT") can, junction box, and conduit

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in service after this date, project economics would be significantly impacted. Commission approval of the SEPA is therefore desired not later than May 13, 2008 to meet the year end deadline.

Application, at 12 (emphasis in original); see also id. at 6-7 (the non-utility party is eligible to claim the thirty percent federal renewable energy investment tax credit in addition to the thirty-five percent state energy tax credit; the thirty percent federal tax credit is not available to regulated electric utilities).

Moreover, Section 4 of the SEPA provides that "[i]f [HECO] has not received the non-appealable PUC Approval Order within 210 days of the date of the last signature to this Agreement, then either [Hoku Solar] or [HECO] may terminate this Agreement by providing written notice of such termination delivered to the other prior to the Effective Date." Agreement, Section 4, at 3. The date of the last signature to the SEPA is November 16, 2007. See SEPA, at 19. Hence, the 210-day date governing the issuance of a "non-appealable PUC Approval Order" is on or about Friday, June 13, 2008.

> and cable from the HECO switchboard to the junction box (hereinafter, "HECO Interconnection Facilities"). The HECO-owned interconnection facilities are necessary to provide a point of interconnection from the PV system into the HECO grid system as well as system energy generation metering capabilities for energy payment purposes.
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> . . . .
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> The Archer PV System will range in power rating from 167 kWdc to 300 kWdc, depending on the type of PV modules used by Hoku Solar . . . .

Application, at 8-9; see also Agreement, Appendix E, Final Project Proposal.

D.

Terms of the SEPA

The purpose of the SEPA "is to permit the Seller to interconnect and operate in parallel with [HECO's] system and to provide for purchase by [HECO] of electric energy from the Seller."[5] Hoku Solar: (1) at a minimum, must install the amount of PV capacity specified in its proposal, 167 kWdc; and (2) subject to HECO's prior written approval, may increase the size of the Facility up to a total of 300 kWdc.[6] HECO estimates that the total annual purchased energy costs will be less than $80,000 for a 300 kWdc system, and less than $45,000 for a 167 kWdc system.[7]

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[5]Agreement, Section 27(i), at 18; see also Agreement, Preamble, at 1.

[6]See Application, Section VIII, Generating Capability of Hoku Solar PV System and System Expansion, at 17; Agreement, Section 1.b, at 1-2; and Agreement, Appendix E, Final Project Proposal.

[7]See Application, at 15 and 32-33.

Pursuant to the terms of the SEPA:

1. Hoku Solar will design, construct, own, operate and maintain the Facility in accordance with: (A) good engineering practice; and (B) consistent with Appendix A, Description of Seller's Generation and Conversion Facilities, Appendix B, Facilities Owned or Operated by the Seller, and Appendix E, Final Project Proposal, of the SEPA.[8] The Facility "shall meet all applicable national, state, and local laws, rules, regulations, orders, construction and safety codes, and shall satisfy" HECO's Distributed Generation Facility Interconnection Standards, as set forth in Rule 14.H.1 of HECO's tariff.[9]

2. The Facility will interconnect and operate in parallel with HECO's system,[10] and Hoku Solar agrees to "install, operate, and maintain suitable and sufficient equipment and records, and to follow such operating procedures, as may be specified by [HECO] to protect [HECO's] system from damages resulting from the parallel operation" of Hoku Solar's Facility.[11]

3. Hoku Solar's Facility will be designed to interconnect with HECO's system at the Point of Interconnection, consistent with Appendix B, Facilities Owned or Operated by the Seller, and Appendix C, Interconnection Facilities Owned by the

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[8]Agreement, Sections 1 and 8, at 1-2 and 5.

[9]Agreement, Appendix B, Facilities Owned or Operated by the Seller, Section 1.a, at B-1.

[10]Agreement, Section 5, at 4.

[11]Agreement, Section 8, at 5.

Company, of the SEPA.[12] In general: (A) Hoku Solar will install, operate, and maintain its Interconnection Facilities from the Facility up to the Point of Interconnection; (B) HECO will construct, own, operate, and maintain its Interconnection Facilities from the Point of Interconnection to the utility's system; and (C) Hoku Solar will pay for the interconnection costs incurred by HECO, plus a monthly metering charge of $10.[13]

4. The SEPA: (A) is contingent upon the issuance of a non-appealable decision and order by the commission, satisfactory to HECO; and (B) shall take effect upon HECO's receipt of the commission's non-appealable decision and order ("Effective Date").[14]

5. The construction and installation of the Facility shall not commence until written notification is provided by HECO to Hoku Solar, provided that such notification is given no sooner than the Effective Date. Hoku Solar shall then undertake all "commercially reasonable efforts to complete the Facility and have it ready for acceptance by HECO within 180 calendar days following the written notification, unless extended by written amendment thereto."[15]

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[12]See Agreement, Sections 9 and 10, at 5-6.

[13]Agreement, Sections 9 and 10, at 5-6; Appendix B, Facilities Owned or Operated by the Seller; and Appendix C, Interconnection Facilities Owned by the Company. A diagram depicting HECO's Interconnection Facilities, Hoku Solar's Interconnection Facilities, and the Point of Interconnection, is set forth on page 4 of Appendix B.

[14]Agreement, Section 4, at 3-4.

[15]Agreement, Section 3, at 2.

6. The commercial operation of the Facility may begin following the successful completion of: (A) a System Acceptance Test by HECO; and (B) other conditions as specified in Section 3 of the SEPA (the "Commercial Operation Date").[16]

7. Commencing on the Commercial Operation Date, HECO agrees to purchase as-available energy furnished by Hoku Solar, and delivered to the Point of Interconnection, in accordance with Appendix D, Purchases and Sales of Energy by the Company, of the SEPA.[17] All energy delivered by the Archer PV System will be purchased by HECO at a fixed rate of $0.19 per kWh over the twenty-year term of the SEPA, with no annual escalation.[18]

8. Moreover, as stated in Appendix D, HECO is willing to minimize the system owner's shading risk in order to secure the lowest possible energy rate. Thus, should the construction of a new building or buildings occur which causes a shading impact to the Facility that reduces the annual energy output of the Facility by greater than ten percent, HECO proposes to negotiate an increase in the rate payment schedule for the remainder of the twenty-year term to compensate Hoku Solar for the lost energy sales.[19]

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[16]Agreement, Section 3, at 2-3.

[17]Agreement, Section 6, at 4-5.

[18]Agreement, Appendix D, Purchases and Sale of Energy by the Company, at D-1 to D-2.

[19]Agreement, Appendix D, Purchases and Sales of Energy by the Company, at D-1 to D-2.

9. In the event that the Archer Substation Site ("Site") undergoes repairs, improvements, or upgrades not caused by the Facility but which "requires the Facility to discontinue the generation and provision of energy to [HECO] of an amount greater than five percent (5%) of the expected monthly energy production from the Facility during any calendar month period within the term of this Agreement, then [HECO] will provide payment to the Seller for the estimated energy that would have been produced during that monthly period. The total payment amount for any calendar month during which this type of event occurs shall be based on the amount of energy that was generated by the Facility during the same month in the previous calendar year and at the purchase rate per kWh of energy as stated in Appendix D."[20]

10. The Contracting Parties "acknowledge that existing and future legislation or regulation may create value in the ownership, use or allocation of Environmental and Renewable Energy Credits. To the full extent allowed by such law or regulation, [HECO] shall own or be entitled to claim all Environmental and Renewable Energy Credits to the extent such credits may exist" during the term of the SEPA.[21]

11. HECO may require Hoku Solar to temporarily curtail, interrupt, or reduce the delivery of energy in certain situations specified in Section 11 of the SEPA, provided that HECO "shall not be obligated to accept or pay for any energy from

[20]Agreement, Appendix D, Purchases and Sales of Energy by the Company, at D-1 to D-2.

[21]Agreement, Section 25, at 16.

the Seller's Facility except for such energy that [HECO] notifies the Seller that it is able to take during this period due to the [specified] circumstances."[22] In addition, HECO reserves the right to disconnect the Facility from HECO's system at any time when HECO "determines that the continued operation of the Seller's Facility may endanger any person or property, [HECO's] electric system or have an adverse effect on the safety of [HECO's] other customers, . . . and [HECO] shall not be obligated to accept or pay for any energy from the Seller's Facility during such period."[23] Hoku Solar, in turn, "shall have the right of verification of interruption, curtailment or cut-off . . . and to reimbursement if it is determined that an interruption, curtailment, or cut-off was not reasonable."[24]

12. The SEPA will take effect upon the Effective Date; shall remain in effect for a minimum of twenty years ("Minimum Term"), subject to the early termination provisions set forth in the SEPA;[25] and shall continue in effect on a

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[22]Agreement, Section 11, at 6.

[23]Agreement, Section 12, at 7.

[24]Agreement, Section 27(j), at 18.

[25]<u>See</u> Agreement, Section 15.2, Payment Upon Early Termination (except for Cause), at 8; Section 20, Termination for Cause, at 12-14; and Appendix J, Purchase Payment Upon Early Termination Schedule.

With respect to Section 15.2 of the SEPA, HECO explains:

> Given that the Archer Substation is an existing HECO facility that was constructed with the use of tax-exempt revenue bonds, an early termination clause is included in the SEPA that allows HECO to terminate the SEPA, within the first five years of the Effective Date of the agreement in the event that it is determined that the tax-exempt status

year-to-year basis thereafter. Either HECO or Hoku Solar may terminate the SEPA after the end of the Minimum Term, upon written notice.

13. HECO has the right but not the obligation to purchase the Facility, consistent with the terms and conditions set forth in Appendix F, Company's Purchase Option, of the SEPA.[26] In general, HECO may initiate its Purchase Option: (A) after the end of the fifth commercial operation year and prior to the end of the term of the SEPA; or (B) any time Hoku Solar has committed an Event of Default pursuant to Section 19 of the SEPA, without cure.[27] In addition, "[i]f at any point during the Term of this Agreement, Seller desires to sell all or a portion of the Facility to a third party, then Seller shall notify [HECO] in writing," and HECO shall have the right of last refusal to purchase the Facility.[28]

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> of these revenue bonds is adversely affected because of the PV system's location on that facility. Such early termination requires HECO payment to Hoku Solar of an amount determined according to the provisions of Section 15.2 of the SEPA, not to exceed $2 million, with ownership of the PV System transferring to HECO. (Exhibit 1, Section 15.2 & Appendix J.) If an adverse determination associated with the tax-exempt status of the revenue bonds occurs after the first five years of the term of the SEPA, HECO could execute its Option to Purchase[.]

Application, Section XIII.2, Events of Default and Termination, at 26; see also Agreement, Section 15.2, at 8; and Appendix J, Purchase Payment Upon Early Termination Schedule.

[26]Agreement, Section 16, at 8.

[27]See Agreement, Appendix F, Company's Purchase Option, at F-1 to F-6.

[28]Agreement, Appendix F, Company's Purchase Option, Section 13, at F-6.

14. Hoku Solar must maintain Commercial General Liability Insurance that will protect the Contracting Parties with respect to the Seller's Facility, operations, and its interconnection with HECO's system, with a minimum single limit of $2 million for any occurrence (bodily injury and property). Hoku Solar's insurance coverage shall be primary with respect to the Seller and HECO, with HECO named as an additional insured.[29] Cross-indemnification, hold harmless, and limitation of liability provisions are also included in the SEPA.[30]

15. The terms and conditions that apply to Hoku Solar's use of the Site for the Facility are set forth in Appendix G, Site License Terms and Conditions, of the SEPA.[31]

Of particular note, Hoku Solar: (A) shall have access to and use of the Site for the duration of the SEPA, solely for the purposes allowed under the Agreement, including the construction, installation, and operation of the Facility;[32] (B) agrees not to interfere in any way with HECO's operation or maintenance of the Archer Substation;[33] (C) accepts the condition of the Site "as is," at the commencement of the SEPA; (D) "shall observe and comply with all applicable laws, regulations, governmental rules, orders and ordinances, and with standards

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[29]Agreement, Section 19, at 11-12.

[30]Agreement, Sections 18 and 27(m), at 10 and 19.

[31]Agreement, Section 2, at 2.

[32]Agreement, Appendix G, Site License Terms and Conditions, Sections 1 and 2, at G-1.

[33]Agreement, Appendix G, Site License Terms and Conditions, Section 18, at G-11.

adopted or recommended by any governmental authority having jurisdiction applicable to Seller's use of the [Site] and/or the Seller's facility[,]" and also agrees to hold harmless, defend, and indemnify HECO from and against all matters relating to "the non-observance of these laws, rules, orders, ordinances and standards[;]"[34] (E) is precluded from handling, disposing of, or allowing to exist on or around the Site, any hazardous materials, except in full compliance with all applicable environmental requirements; (F) shall defend, indemnify, and hold HECO harmless for any damages or liabilities "directly or indirectly arising out of or attributable to the release, threatened release, discharge, or disposal by Seller of Hazardous Materials connected with any activity related to this License[;]"[35] (G) will pay all costs and expenses incurred by HECO in enforcing the conditions of the license or in recovering possession of the Site, in the event of a default (without cure) by Hoku Solar;[36] (H) shall hold harmless, defend, and indemnify HECO from all damages or liabilities arising, directly or indirectly, from Hoku Solar's use or possession of the Site, "except to the extent that such injury or damage is caused by the sole negligence, gross negligence or willful misconduct" of HECO;[37] and (I) shall, during

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[34]Agreement, Appendix G, Site License Terms and Conditions, Section 6, at G-4 to G-5.

[35]Agreement, Appendix G, Site License Terms and Conditions, Section 7, at G-5 to G-7.

[36]Agreement, Appendix G, Site License Terms and Conditions, Section 9, at G-7 to G-8.

[37]Agreement, Appendix G, Site License Terms and Conditions, Section 10, at G-8 to G-9.

the construction of its Facility, maintain Builder's Risk Insurance applicable to the construction.[38]

16. The SEPA "shall, at all times, be subject to such changes or modifications by the PUC as said PUC may, from time to time, direct in the exercise of its jurisdiction."[39]

17. Any disputes or differences between the Contracting Parties arising out of the SEPA shall be subject to the dispute resolution procedures set forth in Appendix I, Dispute Resolution, of the SEPA, with said procedures culminating in final and binding arbitration.

E.

Other Matters

In its Application, HECO also advises the commission and the Consumer Advocate of several other matters to which it does not seek commission action in this proceeding. Namely:

1. Based on a preliminary evaluation of the SEPA, it appears that Interpretation No. 46 of the Financial Accounting Standards Board ("FASB"), Consolidation of Variable Interest Entities, an interpretation of Accounting Research Board Bulletin No. 51 (also known as "FIN46R"), will not be applicable due to the business scope exception of paragraph 4(h) of FIN46R.[40] "However, HECO is required to monitor the status of Hoku Solar

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[38]Agreement, Appendix G, Site License Terms and Conditions, Section 11, at G-9.

[39]Agreement, Section 22, at 14.

[40]Application, Section XI.1, Consolidation Accounting, at 22-23.

and of this SEPA for any significant changes and will revisit this evaluation thereafter when necessary."[41]

2. In May 2003, the Emerging Issues Task Force ("EITF") of the FASB issued EITF Issue No. 01-8, "Determining Whether an Arrangement Contains a Lease." Based on a preliminary evaluation, it appears that the SEPA does not contain a lease.[42] "EITF 01-8 also specifies certain conditions when HECO must re-assess whether lease accounting treatment is required. HECO will re-perform this analysis when the contract becomes effective (Commission approval is received) and thereafter, if necessary."[43]

3. HECO will seek to recover, in its general rate case proceeding, certain costs it will incur related to the construction of the Facility (current preliminary estimate, $82,000).[44]

4. HECO is evaluating the development of a green pricing program whereby fixed-price energy delivered by high value renewable energy systems such as the Archer PV System can be purchased by interested customers on a voluntary basis.[45] "Should HECO develop this type of green pricing program, it is envisioned that the Archer PV System and SEPA would serve as one

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[41]Application, at 23.

[42]Application, Section XI.2, Lease Accounting, at 23-24.

[43]Application, at 23-24.

[44]_See_ Application, Section XIII.17, HECO-Provided Equipment and Activities, at 30-31; and Agreement, Appendix H, Company Provided Items and Activities.

[45]_See_ Application, Section XV, Potential Use in Green Pricing Program, at 33-34.

of the first resources in the program to provide the fixed-price energy, based upon a separate Commission application for the green pricing program . . . . Thus, from a green pricing program development perspective, approval of the Archer PV System SEPA more effectively positions HECO to launch a green pricing program in the near future."[46]

HECO, in its response to PUC-IR-102, also clarifies that Hoku Solar does not desire its Facility to be a qualifying facility under HAR chapter 6-74, governing qualifying facilities.

F.

HECO's Position

In support of its Application, HECO states:

1. On March 22, 2007, HECO issued a Request for Proposals for the HECO Archer Substation PV Project ("RFP").[47] A total of twenty-five firms met the bidder eligibility requirements established in the RFP.[48] On March 30, 2007, a site inspection was conducted by HECO for all interested bidders; representatives from seventeen companies attended. On April 27, 2007, two bid proposals were submitted to HECO in response to the RFP. Based on HECO's evaluation criteria, Hoku Solar's proposal for a 167 kWdc PV system was chosen. HECO then entered into negotiations with Hoku Solar, culminating in the SEPA, which

[46]Application, at 34.

[47]Application, Exhibit 2, RFP.

[48]Application, Exhibit 2, Bidder's List for HECO's Ward PV Project, at 116-120.

provides for the increase in the size of the Facility of up to 300 kWdc, subject to HECO's prior written approval.

2. The development of the Archer PV System and its associated SEPA is a HECO initiative. The commission's approval of the SEPA and related matters will allow HECO to achieve the following objectives:

A. Increase the use of renewable energy on Oahu, consistent with the goals of the State and HECO.

B. Broaden the commercial sector development of PV technology on the island of Oahu.

C. Enable HECO to develop familiarity and knowledge about larger scale PV system development, economics, performance, and operations and maintenance ("O&M").

3. HECO is planning to develop a green pricing program in 2008, and the Archer Substation PV System and the SEPA can serve as the first source of renewable energy for the program.

4. On May 31, 2007, in <u>In re Hawaiian Elec. Co., Inc.</u>, Docket No. 03-0253, HECO filed its IRP-3 Evaluation Report. The IRP-3 Evaluation Report includes a nominal 150 kW HECO-sited PV resource addition in 2007, a second 150 kW PV addition in the 2008 - 2009 time frame, and subsequent increments of HECO-sited solar generation to be added later, eventually totaling 1.2 MW of HECO-sited PV. The Archer PV Substation is intended as the first phase to meeting HECO's IRP-3 goal.

5. "In effect, the IRP-3 Plan, as updated, identified a 'set aside' for a HECO-sited PV resource addition.

In acquiring the resource, HECO identified a power purchase option as being lower cost than a utility-owned option, and used competitive bidding to acquire the resource at the lowest reasonable cost. Thus, the resource is being acquired at less than the cost of HECO owning the resource, or of acquiring it from another bidder (i.e., it is being acquired at less than 'avoided cost')."[49]

6. With respect to PV as a renewable resource:

> As recognized by HECO in its IRP-3 (Appendix O of HECO's IRP-3 Plan), PV technology has higher capital costs than wind or waste-to-energy facilities. The higher capital cost of PV results in a higher energy price compared to these other renewable resources. However, many positive attributes are associated with PV technology, including having zero emissions of noise and air pollutants, minimal O&M, the ability to use unused rooftop spaces, and no use of fossil fuels. Given these attributes, the increasing level of interest and support for the technology in Hawaii largely driven by available tax incentives, and the consistent and strong support of the HECO IRP Advisory Group for inclusion of PV resources in the HECO IRP preferred plan, <u>it was judged that incremental additions of PV resources early in the HECO plan should be accommodated based on the standard of lowest reasonable cost</u>.

Application, at 5 (emphasis added).

7. The lowest reasonable cost standard, as established by the commission in the IRP Framework, allows greater flexibility to consider resource options that may provide additional value to the system or ratepayers, as is the case with the Archer PV System. The power purchase approach taken by HECO to add this PV resource to HECO's system is the most cost-effective PV system option available.

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[49] HECO's response to PUC-IR-101, at 5.

8. The fixed energy purchase rate of $0.19 per kWh is reasonable based on the following rationale:

> . . . . pursuant to the SEPA, HECO will purchase PV energy from Hoku Solar for a fixed price over the term of the 20-year agreement. Since PV does not require fuel, it is possible to specify a levelized cost for electricity delivered from the PV System over the 20-year contract term. In addition to the monitoring of actual field data from the PV System in order to appropriately characterize that levelized cost value, this project is expected to provide long-term value to ratepayers by acting as a renewable energy hedge against the uncertainty of future fossil fuel costs. While the levelized cost of PV energy from the PV System may be higher than current HECO avoided energy costs, avoided energy costs linked to fossil fuel may continue to climb, possibly becoming higher than the levelized cost of electricity from the PV System. For this reason, this type of renewable generation resource holds unique value as a type of electricity pricing hedge.
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> . . . .
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> Since the Archer PV System project and SEPA represents HECO's first experience with purchasing PV energy, HECO has no direct basis on which to compare the $0.19/kWh price. However, through informal communications with Hawaii solar industry contacts, HECO is aware of other recent Hawaii PV project offerings involving purchased power prices in the $0.21/kWh to $0.24/kWh range, subject to annual escalation. <u>HECO therefore considers the $0.19/kWh fixed energy price for the Archer PV System SEPA to be reasonable for a commercial-scale PV power purchase arrangement in Hawaii</u>.

Application, at 6 and 15-16 (emphasis added); <u>see also</u> HECO's response to PUC-IR-101, at 3 n.4.

9. HECO's current quarterly filed avoided energy cost rate for the on-peak period (7:00 a.m. to 9:00 p.m.) during which PV-generated energy will be delivered is 19.85 cents per kWh, which is higher than the $0.19 per kWh rate that is fixed for the

twenty-year term of the SEPA. Concomitantly, "HECO does not contend that the filed avoided energy cost rate for one quarter (in effect, a 'spot' avoided cost rate) is determinative of long-term avoided energy costs, but the current rate is an indicator of the degree to which short-term avoided energy cost rates have increased in recent months and over the last six years."[50]

10. With respect to the provision by which HECO agrees to negotiate with Hoku Solar to compensate the provider for lost energy sales associated with the potential for shading resulting from the construction of one or more new nearby buildings, "[t]his provision was negotiated in consideration of some of the unique characteristics of the project, including the specific HECO-preferred site the PV developer is compelled to utilize, and the possibility that the designated site could be subject to neighboring developments which, through no fault of the developer, could significantly adversely affect projected revenues."[51]

11. Based on its economic analysis, "HECO determined that net PV system costs and resulting PV energy costs would be significantly lower if the PV system was owned by a non-utility party, that sells the PV energy to HECO, since that party would be eligible to claim the currently available 30% federal renewable energy investment tax credit in addition to the 35% state energy tax credit. The 30% federal tax credit is not

[50]HECO's response to PUC-IR-101, at 6 n.7.

[51]Application, at 15.

available to regulated electric utilities. Based on this determination, HECO decided that it would be beneficial from a ratepayer perspective to purchase the energy from a PV system owned by another party under an energy purchase agreement."[52]

12. The energy purchase rate of $0.19 per kWh is fixed over the twenty-year term of the SEPA and does not vary with the price of fossil fuel. Thus, the energy purchase rate complies with the de-linking criteria set forth in the third paragraph of HRS § 269-27.2(c).

13. Consistent with the Site License Terms and Conditions, the Facility will be installed on the roof surfaces and in the adjacent mechanical room of HECO's Archer Substation. "The Archer Substation is an existing HECO facility that was constructed with the use of tax-exempt revenue bonds. HECO and its bond counsel have determined that use of the Archer Substation for the PV System under the terms and conditions of the SEPA would not adversely affect the tax-exempt status of these revenue bonds. Notwithstanding this, the SEPA includes an early termination clause which may be used in the event that future tax rule changes alter this determination."[53]

14. Hoku Solar: (A) is responsible for and will undertake the O&M of the Facility; and (B) at a minimum, will service the Facility twice a year.[54]

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[52] Application, at 6-7; <u>see also</u> HECO's response to PUC-IR-101, at 3-4.

[53] Application, at 11.

[54] <u>See</u> Application, Exhibit 7, Hoku Solar Proposed Operations and Maintenance Schedule.

G.

Consumer Advocate's Position

In its Statement of Position filed on April 30, 2008, the Consumer Advocate recommends that the commission approve the SEPA, the Site License Terms and Conditions, and HECO's request to include its purchased energy charges in its ECAC. The Consumer Advocate's recommendations are based on the following assertions by the Consumer Advocate:

1. The Archer PV System qualifies as a small power production facility pursuant to HAR § 6-74-4(a).[55]

2. The terms and provisions of the SEPA are reasonable and in the public interest.[56] In particular:

A. The fixed energy purchase rate "appears reasonable given that: (1) [the] 19 cents per kwh rate is only 1.2 cents per kwh higher than HECO's 2008 second quarter avoided energy rate reported to the Commission; (2) over time, HECO's avoided energy rate has increased with the increases in the price of fuel oil, and (3) the cost of the energy to be purchased under the SEPA represents a significantly small portion of the total purchased energy by HECO in a year," i.e., approximately .01597 percent of HECO's 2007 test year purchased energy expense of $278,231,000.[57]

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[55]See Consumer Advocate's Statement of Position, at 14-15.

[56]See Consumer Advocate's Statement of Position, at 16-23.

[57]Consumer Advocate's Statement of Position, at 18-19; see also id. Section II.B.1, The per kwh energy purchase rate set forth in Appendix D of the SEPA is reasonable, at 16-20.

B. "Thus, having negotiated a fixed price at which energy will be purchased from Hoku Solar's Archer Substation PV System throughout the 20-year term of the SEPA appears to be an important provision should HECO's As-Available Avoided Energy Cost Rate increase over the next 20 years due to increases in the price of fuel."[58]

C. With respect to the de-linking criteria set forth in the third paragraph of HRS § 269-27.2(c):

> . . . the benefits of any mechanism to de-link the SEPA energy payment rate from HECO's avoided energy cost would be nominal at best given that the expected energy payments under the SEPA represent a nominal percentage of HECO's total annual energy payments to independent power producers. Furthermore, requiring a small independent power producer such as Hoku Solar to negotiate as-available energy rates for as-available energy purchases using a mechanism other than HECO's filed avoided energy rate: (a) would be time consuming, delaying the conclusion of negotiations and potentially deter the construction of these types of facilities; (b) may be cost-prohibitive given the size of the entity that may be interested in developing these types of small as-available energy systems; and (c) may not be cost effective or result in a significant amount of cost savings for ratepayers given the potential amount of energy to be provided under these types of as-available energy contracts such as the instant SEPA.

Consumer Advocate's Statement of Position, at 19-20.

D. The twenty-year Minimum Term of the SEPA provides the Contracting Parties with a measure of certainty over a reasonable time period as to the energy that may be provided and the price that HECO will pay to acquire such energy.

E. The terms and conditions governing the interconnection of Hoku Solar's PV System reasonably protects

[58]Consumer Advocate's Statement of Position, at 17-18.

HECO's system and makes the cost of interconnecting as cost-neutral as possible, from HECO's perspective.

F. The project development, permitting, indemnification, and insurance provisions ensure that Hoku Solar will operate its Facility in accordance with its responsibilities as the owner of the Facility, and HECO and its electrical system will be protected in the event that a liability-causing event does occur in connection with Hoku Solar's Facility.

G. The SEPA is consistent with the Renewable Portfolio Standards law, codified at HRS chapter 269, part V, and "is expected to reduce the State's dependence on imported foreign petroleum by displacing the nominal amount of energy that would have been generated from the combustion of fossil fuels for HECO's generating units in the absence of Hoku Solar's PV System."[59]

3. "[T]he Site License Terms and Conditions are reasonable and in the public interest because Hoku Solar is allowed to use the roof and the upper room mechanical area of HECO's Archer Substation Building, while allowing HECO to retain ownership of the Archer Substation Building and ensure the Company's ability to own, operate, maintain, and control the Archer Substation facility in accordance with HECO's operational practices. The provisions set forth in the Site License Terms and Conditions allowing the minimal sharing of HECO's facilities

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[59]Consumer Advocate's Statement of Position, at 22.

are not expected to negatively effect HECO's ability to reliably serve its customers."[60]

4. Based on the foregoing, "the Consumer Advocate recommends that the Commission approve HECO's request to include the SEPA energy payments in [HECO's] ECAC to the extent that such costs are not already recovered in HECO's base rates."[61] Moreover, "[t]o the extent that the energy payments under the SEPA are deemed to be reasonable for inclusion in determining HECO's revenue requirement and resulting rates in future rate proceedings, the Consumer Advocate does not object to the inclusion of such payments in the determination of the test year revenue requirement and resulting rates."[62]

### H.

### HECO's Reply

By letter dated May 2, 2008, HECO, on behalf of the Parties, informs the commission that this proceeding is ready for decision-making by the commission.

## II.

## Discussion

HRS § 269-27.2(c), governing non-fossil fuel producers, states:

[60] Consumer Advocate's Statement of Position, at 22-23.

[61] Consumer Advocate's Statement of Position, at 23; see also id., at 24.

[62] Consumer Advocate's Statement of Position, at 24.

(c) The rate payable by the public utility to the producer for the nonfossil fuel generated electricity supplied to the public utility shall be as agreed between the public utility and the supplier and as approved by the public utilities commission; provided that in the event the public utility and the supplier fail to reach an agreement for a rate, the rate shall be as prescribed by the public utilities commission according to the powers and procedures provided in this chapter.

In the exercise of its authority to determine the just and reasonable rate for the nonfossil fuel generated electricity supplied to the public utility by the producer, the commission shall establish that the rate for purchase of electricity by a public utility shall not be more than one hundred per cent of the cost avoided by the utility when the utility purchases the electrical energy rather than producing the electrical energy.

The commission's determination of the just and reasonable rate shall be accomplished by establishing a methodology that removes or significantly reduces any linkage between the price of fossil fuels and the rate for the nonfossil fuel generated electricity to potentially enable utility customers to share in the benefits of fuel cost savings resulting from the use of nonfossil fuel generated electricity. As the commission deems appropriate, the just and reasonable rate for nonfossil fuel generated electricity supplied to the public utility by the producer may include mechanisms for reasonable and appropriate incremental adjustments, such as adjustments linked to consumer price indices for inflation or other acceptable adjustment mechanisms.

HRS § 269-27.2(c).

HAR § 6-60-6 states in relevant part:

Automatic adjustment clauses. The utility's rate schedules may include automatic rate adjustment clauses, only for those clauses previously approved by the commission. Upon [the] effective date of this Chapter, any fuel adjustment clause submitted for commission approval shall comply with the following standards:

(1) 'Fuel adjustment clause' means a provision of a rate schedule which provides for increases or decreases or both, without prior hearing, in rates reflecting increases or decreases or both in costs incurred by an electric or gas utility for fuel and purchased energy due to changes in the unit cost of fuel and purchased energy.

(2) No changes in fuel and purchased energy costs may be included in the fuel adjustment clause unless the contracts or prices for the purchase of such fuel or energy have been previously approved or filed with the commission.

. . . .

HAR § 6-60-6.

HRS § 269-19 provides that no public utility shall sell, lease, assign, mortgage, or otherwise dispose of or encumber the whole or any part of its road, line, plant, system, or other property necessary or useful in the performance of its duties to the public, nor by any means, directly or indirectly, merge or consolidate with any other public utility, without first having secured from the commission "an order authorizing it so to do. Every such sale, lease, assignment . . . [or] disposition . . . made other than in accordance with the order of the commission shall be void." The purpose of HRS § 269-19 is to safeguard the public interest. In re Honolulu Rapid Transit Co., Ltd., 54 Haw. 402, 409, 507 P.2d 755, 759 (1973).

The commission, upon its review of the docket record, makes the following findings and conclusions:

1. The HECO-sited Archer PV System is designed for a minimum capacity of 167 kWdc, and a maximum capacity of 300 kWdc. This as-available, renewable energy facility essentially

represents a small scale, HECO-initiated pilot program by which the electric utility seeks to: (A) develop its knowledge and familiarity with larger scale PV systems, economics, performance, and O&M; and (B) broaden the commercial development of PV technology on the island of Oahu.

2. The Archer PV System is designed so that it will not emit any noise or air pollutants.

3. HECO's estimated total annual purchased energy costs under the SEPA is approximately $45,000 for a 167 kWdc system, and $80,000 for a 300 kWdc system. These estimates represent de minimis amounts, when compared to HECO's total annual energy purchased from independent power producers.

4. The SEPA results from a bidding process undertaken by HECO. Moreover, under HECO's economic analysis, the net PV system costs and resulting PV energy costs is lowered if the PV system is owned by a non-utility that sells the PV energy to HECO, based on the non-utility's ability to avail itself of the applicable federal and state renewable energy tax credits.

5. The energy purchase rate of $0.19 per kWh, fixed over the twenty-year term of the SEPA, with no annual escalation, is designed to act as a hedge against the future uncertainty, instability, and potential increases in the cost of fossil fuel. Moreover, since PV does not require any fossil fuel, the SEPA specifies a long-term, levelized energy purchase rate for the energy that will be delivered from Hoku Solar's PV System. Thus, the long-term, fixed energy purchase rate appears to remove

or significantly de-link any linkage with the cost of fossil fuel.

6. The Environmental and Renewable Energy Credits, to the extent that a renewable energy credits market develops in the future, will remain under the ownership and claim of HECO.

7. The fixed energy purchase rate of $0.19 per kWh (as set forth in the SEPA) is below the current short-term avoided energy cost rate of 19.85 cents per kWh, which is projected to increase in the future with the price of fossil fuel. Moreover, as represented by HECO, the fixed energy purchase rate of $0.19 per kWh is below the $0.21 per kWh to $0.24 per kWh range, plus annual escalations, for "other recent Hawaii PV project offerings involving purchased power prices[.]"

8. On balance, based on findings 1 through 7, above, the fixed energy purchase rate set forth in the SEPA appears reasonable and consistent in principle with HRS § 269-27.2(c), which supports the development of non-fossil fuel generation such as PV technology.[63]

9. The non-price terms of the SEPA include provisions governing: (A) the interconnection of the Facility with HECO's system; (B) HECO's right to temporarily curtail, interrupt, or reduce the delivery of energy in certain situations; and (C) default, option to purchase, insurance coverage for HECO's benefit, and cross-indemnification.

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[63]See HRS § 269-6(b) ("The public utilities commission may consider the need for increased renewable energy use in exercising its authority and duties under this chapter.") Moreover, as previously noted, Section 22 of the Agreement provides that the SEPA shall, at all times, be subject to changes or modifications by the commission.

10. The Site License Terms and Conditions authorize Hoku Solar to have access to the Site for the duration of the SEPA, for the purpose of constructing, installing, and operating the Facility, and prohibits Hoku Solar from interfering in any way with HECO's operation and maintenance of the Facility. The Site License Terms and Conditions are consistent with the public interest, pursuant to HRS § 269-19.

11. The terms and conditions of the SEPA, as a whole, appear reasonable and consistent with the public interest and the State's overall energy policy of reducing the State's dependence on fossil fuel. Thus, the purchased power arrangements described in the SEPA, pursuant to which HECO will purchase energy from Hoku Solar, appear prudent and in the public interest.

12. HECO may include the purchased energy charges and related revenue taxes it incurs under the SEPA, to the extent that such costs are not included in HECO's base rates, in HECO's ECAC for the term of the SEPA, pursuant to HAR § 6-60-6(2).

13. HECO may include the reasonable costs it incurs pursuant to the SEPA in its revenue requirements for ratemaking purposes and for the purpose of determining the reasonableness of HECO's rates.

III.

Orders

THE COMMISSION ORDERS:

1. The purchased energy costs for the energy supplied by Hoku Solar's PV System are reasonable.

2. The terms and conditions of the Solar Energy Purchase Agreement, dated November 16, 2007, governing HECO's purchase of energy from Hoku Solar, are prudent and in the public interest.

3. The SEPA is approved, including the Site License Terms and Conditions, as set forth in Appendix G of the SEPA.

4. HECO may include the purchased energy charges and related revenue taxes that HECO incurs under the SEPA, to the extent that such costs are not included in HECO's base rates, in HECO's ECAC, for the term of the SEPA.

5. HECO may include the reasonable costs incurred by HECO pursuant to the SEPA in its revenue requirements for ratemaking purposes and for the purpose of determining the reasonableness of HECO's rates.

6. This docket is closed unless ordered otherwise by the commission.

DONE at Honolulu, Hawaii MAY 1 3 2008.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By: Carlito P. Caliboso
Carlito P. Caliboso, Chairman

By: John E. Cole
John E. Cole, Commissioner

By: [signature]
Leslie H. Kondo, Commissioner

APPROVED AS TO FORM:

Michael Azama
Michael Azama
Commission Counsel

2007-0425.eh

# CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Decision and Order No. 24225 upon the following parties, by causing a copy hereof to be mailed, postage prepaid, and properly addressed to each such party.

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DATED: MAY 13 2008