BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of HAWAIIAN ELECTRIC COMPANY, INC. For Approval to Commit Funds in Excess of $2,500,000 (Excluding Customer Contributions) for the Purchase and Installation of Item P0001756, Schofield Generating Station Project.	)	DOCKET NO. 2014-0113

DECISION AND ORDER NO. 33178

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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of HAWAIIAN ELECTRIC COMPANY, INC. For Approval to Commit Funds in Excess of $2,500,000 (Excluding Customer Contributions) for the Purchase and Installation of Item P0001756, Schofield Generating Station Project.	Docket No. 2014-0113 Order No. 33178

DECISION AND ORDER

By this Decision and Order, the commission approves, with certain conditions and modifications, the application filed by HAWAIIAN ELECTRIC COMPANY, INC. ("HECO")[1] on May 16, 2014, for HECO's commitment of funds in excess of $2,500,000 for the purchase and installation of Item P0001576, Schofield Generating Station Project ("SGS Project" or "Project").

[1]The Parties are HAWAIIAN ELECTRIC COMPANY, INC. ("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 § 269-51 and Hawaii Administrative Rules ("HAR") § 6-61-62(a). On June 5, 2014, the Consumer Advocate filed its preliminary position statement, stating its intent to participate in the subject proceeding. No persons moved to intervene or participate in this proceeding.

The proposed SGS Project is a firm, dispatchable 50 Megawatt ("MW") power plant, configured with six 8.4 MW, multi-fuel capable reciprocating internal combustion engine generator sets. The six individual engines may each be operated alone or in conjunction with the other engines.

Under normal operating conditions, the proposed SGS Project would serve all HECO customers. In addition, the Project may be able to continue operations in times of weather related emergencies because, unlike HECO's other generating stations, the Project would be centrally located over eight miles from and approximately 900 feet above the sea. Thus, the SGS Project is protected from the coastal effects of tsunami and storm surge.

Further, in the event of a significant outage, the SGS Project can start up and provide power without external support, and has the capability to "blackstart" Oahu's grid - that is, the ability to restore power without relying on the grid - by providing the power necessary to start other combustion turbine units at the Company's Waiau power plant.

Under defined state or national emergency conditions, the SGS Project would be able to provide power directly to the Army facilities of Schofield Barracks, Wheeler Army Airfield ("WAAF"), and Field Station Kunia. The Project is self-contained

with on-site fuel storage, and is described as the most "survivable" generating station on Oahu.

Thus, the SGS Project is a firm, dispatchable project that will primarily be used to support operation of the grid. If operated as proposed, the Project will also have a renewable component, that is, it should enable the further integration of low-cost, variable renewables onto the grid.

The commission concludes that the SGS Project: (a) is consistent with the State's commitment to support the military; (b) supports both State and national security; (c) may permit the retirement of older generating assets sooner rather than later; (d) increases the operational flexibility and reliability of HECO's system; and (e) may enhance HECO's capability to operate its grid to accommodate increased amounts of renewable energy. Thus, the commission is approving the SGS Project, but with certain conditions and modifications as discussed herein.

I.

Background

A.

Application

On May 16, 2014, HECO filed an Application[2] requesting that the commission:

1. Approve HECO's commitment of funds in excess of $2,500,000 in accordance with the provisions of Paragraph 2.3(g)(2) of General Order No. 7 ("G.O.7"), as revised in Decision and Order No. 21002 (issued on May 27, 2004 in Docket No. 03-0257), for the proposed Project;

2. Conduct a public hearing related to the proposed overhead 46 kV sub transmission line, pursuant to Hawaii Revised Statutes ("HRS") § 269-27.5;

3. Determine that the proposed new 46 kV sub-transmission line and the reconductored section of an existing 46 kV line extension be constructed above the surface of the ground, pursuant to HRS § 269-27.6(a);

4. Approve the Project's use of a minimum of fifty percent (50%) biofuel, and a minimum of 3.5 million gallons of biofuel annually, to satisfy the United States Department of the Army ("Army") project requirements;

[2]Application, Verification, Exhibits 1-12, and Certificate of Service (collectively "Application").

5. Approve HECO's request to capitalize lease payments made to the Army prior to the in-service date of the Project;

6. Approve the proposed forms of the Lease and Operating Agreement in substantially the form submitted in the Application; and

7. Grant HECO such other further relief as may be deemed just and reasonable.[3]

B.

SGS Project Description

HECO proposes to finance, design, procure, and construct the SGS Project on land leased from the Army at Schofield Barracks. According to HECO, the Project consists of a firm, dispatchable 50 Megawatt ("MW") power plant, the associated overhead 46 kV sub-transmission line, and attendant modifications to the existing grid infrastructure in support of the Project's objectives.[4] The proposed Project would be configured with six 8.4 MW, multi-fuel capable reciprocating internal combustion engine ("RICE") generator sets.[5] Each generator set will be capable of operating independently or in concert to supply anywhere

[3]Application at 1-2.

[4]Application at 13.

[5]Application at 14.

from approximately 4 MW to 8.4 MW (minimum to maximum output from a single unit) up to 50 MW (all six units at maximum output) of power to the grid, resulting in a dispatch range for the Project of 4 MW to 50 MW, or a turndown ratio of more than 12 to 1.[6]

Additionally, the SGS Project would be capable of starting from a de-energized and unsynchronized state to full capacity within six minutes.[7] Each engine would be multi-fuel capable, and would be able to switch while operating between different liquid fuels and natural gas.[8]

The Project would serve all HECO customers under "normal" operating conditions, and would provide enhanced energy security and resilience for the island of Oahu.[9] HECO further observes that Oahu's existing generating stations are located near the coast and are subject to major storm surges and tsunamis. However, the Project would be centrally located over eight miles from, and approximately 900 feet above, the sea, and would therefore be immune to the coastal effects of tsunami and storm surge.[10]

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[6]Application at 4 and 14.

[7]Application at 4.

[8]Application at 4.

[9]Application at 5.

[10]Application at 5.

Further, under defined emergency conditions, the Project would be able to provide power directly to the Army facilities of Schofield Barracks, Wheeler Army Airfield ("WAAF"), and Field Station Kunia.[11] Self-contained with on-site fuel storage, and independent of seawater cooling or external supplies for operation, the Project would be the most "survivable" generating station on Oahu.[12]

Further, in the event of a significant outage, the SGS Project would not only be capable of starting up and providing power without external support, but would also have the capability to blackstart the island's grid by providing the power necessary to start other combustion turbine units at the Company's Waiau power plant via multiple redundant existing transmission paths.[13]

The Project includes a Lease and Operating Agreement ("Lease") between HECO and the Army, which is still being negotiated. Moreover, the Lease cannot be executed until the State and Federal Environmental Impact Statements ("EIS") are completed and an Army real estate internal review process is finalized.[14]

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[11]Application at 5.

[12]Application at 5.

[13]Application at 5.

[14]Application at 21.

Given this, HECO has filed a form of the general terms and conditions that will be in the Lease. The draft Lease is for a term of 30 years, beginning at the start of construction, and a single option for HECO to extend the term for an additional 15 years and provides for the lease of land by the Army at Schofield Barracks for the proposed SGS Project.[15] The Operating Agreement specifies "how Hawaiian Electric will provide the energy security guarantees that the Army requires, while ensuring that the Company can use the SGS Project as required to meet its obligations to all Hawaiian Electric customers."[16]

As a condition of the Lease, HECO would be required to pay rent to the Army amounting to $342,000 annually commencing upon the start of the construction of the proposed project.[17] However, when HECO demonstrates that the SGS Project is capable of meeting the Army's energy security guarantees as described in the draft Lease, these energy security guarantees would be considered as in-kind consideration to the Army in lieu of the monetary rent.[18] In addition, the Army is requiring that the proposed SGS Project

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[15]Application at 21; CA SOP at 7.

[16]Application at 22.

[17]CA SOP at 8.

[18]CA SOP at 8.

be operated on a fuel mix of 50% biofuel with a minimum biofuel consumption of 3.5 million gallons per year.[19]

C.

Procedural History

On June 5, 2014, the Consumer Advocate filed its Preliminary Statement of Position. On June 13, 2014, the commission issued Order No. 32140 Instructing the Parties to Submit a Proposed Stipulated Procedural Order ("Order No. 32140"), and on June 19, 2014, the commission issued Protective Order No. 32152.

On July 24, 2014, the commission filed Stipulated Procedural Order No. 32217 ("Order No. 32217"), which, among other things, identified the issues, procedural steps, and procedural deadlines in this docket.[20] On July 31, 2014,

[19]CA SOP at 8.

[20]The commission observes that Paragraph 2.3(g)(2) of G.O.7 generally provides a ninety (90) day period for the commission to issue a decision and order. However, Order No. 32217 states that, because the procedural schedule agreed to by the Parties included deadline dates that extended beyond August 14, 2014 (that is, ninety days from the date the Application was filed), HECO waived the deadline for the commission to issue a decision and order.

the Consumer Advocate filed information requests, to which HECO timely responded on September 4, 2014.[21]

On October 2, 2014, the commission filed Order No. 32320, approving the Consumer Advocate's first request to modify the procedural schedule set forth in Order No. 32217 ("Order No. 32320"). On December 11, 2014, the commission issued Order No. 32517, approving the Consumer Advocate's second request to modify the procedural schedule set forth in Order No. 32320 ("Order No. 32517").

On January 5, 2015, the Consumer Advocate filed supplemental information requests, to which HECO timely responded on February 2, 2015. On January 21, 2015, the commission held a public hearing at Mililani Waena Elementary School Cafeteria pursuant to HRS § 269 27.5. HECO and the Consumer Advocate participated in technical meetings during the first week in February, 2015.

On March 11, 2015, the commission issued Order No. 32704, approving the Consumer Advocate's third request to further amend the procedural schedule as established in Order No. 32517 ("Order No. 32704"). On April 20, 2015, the commission issued Order No. 32791, approving the Consumer Advocate's fourth request

[21]The commission notes that on October 21, 2014, HECO filed a revised response to CA-IR-16.

to further amend the procedural schedule, as established in Order No. 32704 ("Order No. 32791").

On May 8, 2015, HECO filed responses to the Consumer Advocate's informal information requests, submitted by e-mail on several dates between February 2, 2015, and March 31, 2015.

On May 13, 2015, HECO filed a "Motion to Further Amend Procedural Schedule Approved by the Hawaii Public Utilities Commission in Order No. 32791 Issued on April 20, 2015." On May 22, 2015, the Consumer Advocate filed a "Motion to Further Amend the Procedural Schedule Approved by the Hawaii Public Utilities Commission in Order No. 32791, Filed on April 20, 2015." On June 9, 2015, the commission issued "Order No. 32895 Extending Filing Deadline for Remaining Procedural Step."

On May 27, 2015, the Consumer Advocate filed its initial Statement of Position ("SOP"). Finally, on June 17, 2015, HECO timely filed its Reply Statement of Position ("RSOP").

II.

Issues

The issues, as set forth in Order No. 32217, are as follows:

1. Whether the commission should approve HECO's request for approval to commit funds in excess of $2,500,000, in accordance with General Order No. 7 for the purchase and installation of the proposed Schofield Generating Station project;

2. Whether the commission should approve the construction of the proposed new 46kV overhead sub-transmission line and the reconductored overhead section of an existing 46kV line extension required for the proposed Schofield Generating Station project;

3. Whether the commission should approve the Project's use of a minimum of fifty percent (50%) biofuel, and a minimum of 3.5 million gallons of biofuel annually;

4. Whether the commission should approve HECO's request to capitalize lease payments made to the Army prior to the in-service date of the Project; and

5. Whether the commission should approve the proposed forms of the Lease and Operating Agreement.[22]

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[22]The issues are hereafter identified according to the numbers by which they are enumerated in Order No. 32217.

III.

Positions Of The Parties

A.

Whether The Commission Should Approve HECO's Request For Approval To Commit Funds In Excess Of $2,500,000, In Accordance With General Order No. 7, For The Purchase And Installation Of The Proposed Schofield Generating Station Project

HECO states that the commission has directed it to "modernize the generation system to achieve a future with high penetrations of renewable resources."[23] HECO submits that the Project comports with the commission's guidance because it: (1) has a clear strategic focus and would provide long term value for customers; (2) would be a key initial step in HECO's efforts to modernize Oahu's generation system; (3) would directly contribute to achieving a balanced and diverse portfolio of renewable energy resources; (4) would facilitate the integration of additional levels of variable renewable resources to the system; (5) would have operating characteristics necessary to support grid stability; and (6) has multi-fuel optionality that would allow petroleum-based fuel to be displaced with renewable fuels and liquefied natural gas.[24]

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[23]Application at 2, citing Decision and Order No. 32052, filed April 28, 2014, in Docket No. 2012-0036 (Regarding Integrated Resource Planning), Exhibit A: Commission's Inclinations on the Future of Hawaii's Electric Utilities ("Commission's Inclinations") at 4.

[24]Application at 9.

According to HECO, the Project will have the ability to:

- Start, synchronize to the grid, and ramp to full load in a few minutes;

- Ramp generation output up and down at fast rates for frequency regulation;

- Operate over a very wide range of loads when synchronized to the grid (i.e., more than 12 to 1 turndown);

- Execute multiple starts and stops throughout any operating period;

- Control Volt-Amp Reactive ("VAR") output for voltage regulation;

- Provide an automatic inertial response during major grid contingencies to help stabilize system frequency;

- Efficiently convert fuels to electric power (i.e., to operate at low heat rates) over its full range of power output;

- Utilize multiple liquid and gaseous fuels; and

- "Blackstart" and island an "integrated energy district" at a unique location in central Oahu, adjacent to a major air field.[25]

In other words, the Project will be a flexible, quick starting and ramping firm-generating facility that will contribute to modernizing Oahu's generating system, advance the movement to renewable energy, help avoid projected generation shortfalls, and increase grid resiliency and security.[26]

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[25]Application at 3.

[26]Application at 8.

While the Consumer Advocate identified concerns with the Project, it stated that there are compelling reasons to approve it, subject to certain conditions.[27] The Consumer Advocate opined that the Project "is an important first step in retiring old generating assets that will only continue to incur greater levels of operating and maintenance costs as they continue to age," and incur costs to keep operational.[28] The Consumer Advocate stated that the new RICE units would improve HECO's grid capability to accommodate increasing amounts of intermittent sources of renewable energy, increase HECO's security and reliability, and reflect Hawaii's continued commitment to support national security and the military forces, by meeting the Army's energy needs.[29]

The Consumer Advocate's recommendation is contingent upon the adoption of certain conditions designed to mitigate risks and costs that customers might otherwise have to unnecessarily bear, including the following:

(a) The commission should limit the approved costs of the Project to the requested amount of $170 million;

(b) The commission should limit the amount that is recoverable through any surcharge;

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[27]CA SOP at 27.

[28]CA SOP at 27.

[29]CA SOP at 27.

(c) No LNG costs should be recoverable until LNG is readily available for the SGS;

(d) Various Engineering, Procurement, and Construction ("EPC") status reports should be provided;

(e) The commission should adopt Kiewit's[30] recommendations to mitigate EPC vendor risks;

(f) The commission should modify the biofuel requirement; and

(g) The commission should modify the lease terms.[31]

In its June 17, 2015 RSOP, HECO notes, among other things, that the removal of the LNG Scope from the Project reduces the estimated total Project costs to $167 million. While HECO would be willing to cap the total Project costs at $167 million, it does not agree with the Consumer Advocate's recommendation to limit cost recovery through any cost recovery mechanism other than base rates to 90% of the total cost.[32] HECO also proposes to provide "milestone" updates on the EPC contract, as opposed to weekly updates, to the commission and the Consumer Advocate,

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[30]Recommendations as stated in the "Project Review Report," dated May 8, 2015, of Kiewit Engineering & Design Co. ("Kiewit Report"), attached to the Consumer Advocate's SOP as "Exhibit 2.

[31]CA SOP at 2-4.

[32]HECO's RSOP at 4.

so as to avoid placing an undue burden on the parties.[33] Additionally, HECO clarifies that with respect to estimated project costs, the total installed cost of the generating station is reasonable, and the use of biofuel in the selected units would not result in additional maintenance or non-fuel operating costs when compared to fossil fuels.[34]

B.

Whether The Commission Should Approve
The Construction Of The Proposed New 46kv Overhead
Sub-Transmission Line And The Reconductored Overhead Section
Of An Existing 46kv Line Extension Required
For The Proposed Schofield Generating Station Project

HECO submits that the 46 kV sub-transmission line is necessary to interconnect the SGS to the Wahiawa Substation and Wahiawa-Mikilua line.[35] Pursuant to HRS § 269-27.6(a), HECO notes that the benefits, if any, of placing the section of the 46 kV lines underground do not outweigh the costs, as it would cost approximately three times more to underground the lines than to

[33]HECO's RSOP at 6-7.

[34]HECO's RSOP at 7.

[35]Application, Exhibit 2 at 16-17.

place them overhead,[36] and undergrounding is projected to result in significant monthly bill increases to customers.[37]

The Consumer Advocate observes that: (1) the estimated cost difference between placing the 46 kV line overhead, compared to underground, is approximately $15.5 million; (2) there are existing overhead lines located in the area and it appears that the 46kV line extension will not significantly increase the visual impact; and (3) there were no comments provided at the public hearing that objected to placing the 46 kV lines overhead.[38] Accordingly, the Consumer Advocate recommends that the 46kV line be constructed above the surface of the ground.[39]

C.

Whether The Commission Should Approve The Project's Use Of A Minimum Of Fifty Percent (50%) Biofuel, And A Minimum Of 3.5 Million Gallons Of Biofuel Annually

HECO notes that the Army, as the property owner and a primary stakeholder in the Project, has required that the Project use a minimum of 50% biofuel and a minimum of 3.5 million gallons

[36]Application, Exhibit 3 at 1.

[37]Application, Exhibit 3 at Attachment 2.

[38]CA SOP at 30.

[39]CA SOP at 30.

of biofuel annually.[40] HECO acknowledges that these requirements are the result of extensive discussions between itself and the Army and State stakeholders, and explains that the proposed fuel use requirements at the SGS will not only contribute to the achievement of RPS requirements, but can reduce fuel costs when compared to current and foreseeable fuel use in existing generating units, while sustaining a local demand for biofuels.[41] For these reasons, HECO asserts that the commission should approve said fuel requirements.[42]

The Consumer Advocate opines that the Army's biofuel use requirement results in greater capital expenditures and higher ongoing operational and maintenance expenses.[43] However, the Army's presence in Hawaii serves a strategic national defense objective and is a major contributor to Hawaii's economy.[44] The Consumer Advocate notes that forcing the Army to design and construct its own SGS emergency generator may lead the Army to consider going off HECO's grid, which would result in millions of dollars in lost electricity sales for HECO.

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[40]Application at 33.

[41]Application at 33.

[42]Application at 33.

[43]CA SOP at 30.

[44]CA SOP at 31.

However, in order to mitigate the impact caused by the Army's biofuel specification, the Consumer Advocate recommends that the commission adopt HECO's proposal to re-direct the biofuel currently used at HECO's CIP CT-1 facility to the SGS, which would relieve CIP CT-1 of its obligation to burn 100% biofuel.[45] The Consumer Advocate further recommends that HECO's agreement with the Army be modified to cap the maximum amount of biofuel to be run at SGS to 50% or 3 million gallons per year, whichever is lower.[46]

In its RSOP, HECO indicates that it has reached an agreement with the Army that the biofuel requirement may be modified to the lesser of either 50% biofuel or 3.5 million gallons of biofuel per year, instead of having to meet both requirements.[47]

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[45]CA SOP at 31.

[46]CA SOP at 31-32.

[47]HECO's RSOP at 8.

D.

Whether The Commission Should Approve HECO's Request To Capitalize Lease Payments Made To The Army Prior To The In-Service Date Of The Project And Whether The Commission Should Approve The Proposed Forms Of The Lease And Operating Agreement

HECO contends that the commission should: (1) approve its Lease with the Army;[48] and (2) approve, as capital Project costs, the monetary rental payments made to the Army prior to the Project's in-service date, under the Lease.[49] HECO explains that when it demonstrates that the Project is capable of meeting the energy security guarantees detailed in the Lease, said guarantees will serve as in-kind consideration in lieu of monetary rent.[50] HECO argues that, as such, the rent payments between site mobilization and the in-service date are costs attributable to the Project, and not operating costs, and should therefore, be treated as recoverable capital Project costs.[51]

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[48]Application at 32, which notes that a draft of the Lease is appended as "Exhibit 7." HECO further notes that the substantive terms of the Lease are not expected to change, even though the terms of the draft Lease may be subject to changes up until execution of the Lease, and the negotiated final rental amount will be dependent upon a final appraisal which will be conducted within six months prior to execution of the Lease. Id.

[49]Application at 33.

[50]Application at 32.

[51]Application at 33.

With regard to the Lease payments, the Consumer Advocate recommends that the proposed capitalization of these costs should not be allowed, and states that "[c]apitalizing the lease costs for land is not consistent with generally accepted accounting principles nor is it consistent with regulatory accounting guidelines."[52] The Consumer Advocate concludes that the lease payments should instead be expensed.[53]

Because the Consumer Advocate supports the Project, it agrees with the necessity for the Lease; however, it recommends that certain modifications be made to the Lease terms. The modifications, which are consistent with those discussed in the Kiewit Report relate to the intended use of premises, the term of lease, fire protection services, and derived benefits.[54]

In its RSOP, HECO again argues that the monthly Lease payments made prior to the Project's in service date should be treated as capital Project costs.[55] HECO further clarifies that: (1) it will not owe regular monthly monetary payments to the Army for leasing the site for the entire term of the Lease, and the only time monetary payments may be required is if HECO fails to

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[52]CA SOP at 33.

[53]CA SOP at 33.

[54]CA SOP at 33-34.

[55]HECO RSOP at 8.

deliver on the energy security guarantee; (2) the Project will be afforded the same or better emergency fire response as any other HECO facility; and (3) the value of the Army's contribution to the Project exceeds the cost to the customers of providing the Army's benefit by over $12 million over the life of the Project.[56]

These issues are individually discussed in further detail below.

IV.

Findings and Conclusions

A.

Introduction

1. As stated above, the commission is approving, with certain conditions and modifications, HECO's proposal to build and operate the SGS Project. The commission views the Project as a firm, dispatchable generating resource designed to assist in grid operations. If operated properly, the Project should also assist in the further integration of renewables on the HECO system.

2. As discussed herein, the commission concludes that the SGS Project, among other things, (a) is consistent with the State's commitment to support the military, particularly in light of the military's impact on the State's economy; (b) is supportive

[56]HECO RSOP at 8-9.

of both State and national security; (c) may accelerate the retirement of old generating assets; (d) may result in increased operational flexibility and reliability of HECO's system; and (e) may enhance HECO's capability to operate its grid to accommodate increased amounts of low-cost renewable energy.

3. HECO seeks approval to commit funds in excess of $2,500,000 for the SGS Project in accordance with Paragraph 2.3(g)(2) of General Order No. 7, which provides:

> Proposed capital expenditures for any single project related to plant replacement, expansion or modernization, in excess of [$2,500,000, excluding customer contributions], shall be submitted to the Commission for review at least 60 days prior to the commencement of construction or commitment for expenditure, whichever is earlier. If the Commission determines, after hearing on the matter, that any portion of the proposed project provides facilities which are unnecessary or are unreasonably in excess of probable future requirements for utility purposes; then the utility shall not include such portion of the project in its rate base. If the utility subsequently convinces the commission that the property in question has become necessary or useful for public utility purposes; it may then be included in the rate base. Failure of the Commission to act upon the matter and render a decision-and-order within 90 days of filing by the utility shall allow the utility to include the project in its rate base without the determination required by this rule. The date required by this rule shall be in such form and detail as prescribed by the commission.[57]

[57]Public Utilities Commission, Standards for Electric Utility Service in the State of Hawaii, G.O. No. 7, Paragraph 2.3(g)(2),

4. In reviewing this Application, the commission also takes note of Act 97, which took effect on July 1, 2015, and which amends HRS § 269-92(a) of the RPS law by: (1) increasing the existing renewable portfolio standard for 2020, from twenty-five percent (25%) to thirty percent (30%); and (2) adopting renewable portfolio standards of seventy percent (70%) by 2040 and one-hundred percent (100%) by 2045.[58]

5. HRS § 269-6 sets forth the commission's general powers and duties, and provides, in part:

> **§269-6 General powers and duties.** . . .
>
> (b) The public utilities commission shall consider the need to reduce the State's reliance on fossil fuels through energy efficiency and increased renewable energy generation in exercising its authority and duties under this chapter [269]. In making determinations of the reasonableness of the costs of utility system capital improvements and operations, the commission shall explicitly consider, quantitatively or qualitatively, the effect of the State's reliance on fossil fuels on price volatility, export of funds for fuel imports, fuel supply reliability risk, and greenhouse gas emissions. The commission may determine that short-term costs or direct costs that are higher than alternatives relying more heavily on fossil fuels are reasonable, considering

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amended by Docket No. 03-0257, Decision and Order No. 21002, filed on May 27, 2004, at 15.

[58]The commission takes official notice of Act 97, pursuant to HAR § 6-61-48 (official notice of certain facts).

> the impacts resulting from the use of fossil fuels.
>
> (c) In exercising its authority and duties under this chapter [269], the public utilities commission shall consider the costs and benefits of a diverse fossil fuel portfolio and of maximizing the efficiency of all electric utility assets to lower and stabilize the cost of electricity. Nothing in this section [269-6] shall subvert the obligation of electric utilities to meet the renewable portfolio standards set forth in section 269-92.

HRS § 269-6(b) and (c).

6. The commission sets forth the following specific findings and conclusions in support of its decision to approve the SGS Project as conditioned and modified by this Order.

B.

Issue No. 1

Whether The Commission Should Approve HECO's Request For Approval To Commit Funds In Excess Of $2,500,000, In Accordance With General Order No. 7 For The Purchase And Installation Of The Proposed Schofield Generating Station Project

7. There are a number of considerations which must be addressed by the commission in determining whether or not to approve the SGS Project. Among these are operational, security and emergency, cost and rate impact, other revenue, and renewable energy considerations. Each of these considerations is discussed in turn, followed by the commission's analysis and conclusions concerning whether the SGS Project is in the

public interest, that is, whether benefits of the Project are sufficient to offset the costs and rate impacts.

1.

Operational Considerations

8. HECO states that the Project will have a generating capacity of 50 MW. HECO further observes:

> More importantly, however, would be the Project's operational flexibility due to it being configured with six separate reciprocating engines each having a generating capacity of 8.4 MW. Each engine may be independently dispatched from 4 MW to 8.4 MW, resulting in a dispatch range for the Project of 4 MW to 50 MW, or a turndown ratio of more than 12 to 1. Moreover, the Project can be started from a de-energized and unsynchronized state to full capacity (i.e., 50 MW) within six minutes. Each engine will be multi-fuel capable for maximum fuel optionality, including the ability to switch while operating between different liquid fuels and natural gas. The reciprocating engines will be very fuel efficient, and the Project will operate at heat rates throughout its load range that are better than every other firm generating unit currently operating on the Oahu grid.[59]

9. HECO further explains that the reciprocating internal combustion engine ("RICE") units selected for the Project, among other things, (a) are the same kind of engines used in the marine shipping industry, and that they have an extensive

[59]Application at 4-5; see also, Application, Exhibit 2 at 1-8.

operating history of reliable performance and endurance under adverse conditions; and (b) are superior to HECO's other blackstart capable units, such as the steam units at Waiau and Kahe, because they are self-contained and less complex.[60] As to the latter, HECO asserts that the RICE units are less likely to suffer debilitating damage than the existing units.[61]

10. Moreover, even if there is some damage to one of the units, or if the unit is undergoing maintenance, "the fact that there are six units on site and redundancy in the station's critical equipment makes the generating station less prone to any single fault or combination of faults preventing the station from being able to start up after an event, which provides advantages over other blackstart-capable units such as the Campbell Industrial Park CT-1 unit ("CT-1")."[62]

11. HECO further states that in the event of a localized or island-wide outage, "the SGS Project will provide the capability to restore power more effectively than other existing units, and will provide a necessary, redundant, and improved blackstart

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[60]Application at 36.

[61]Application at 36.

[62]Application at 36; see also Application, Exhibit 1, Exhibit 2, and Exhibit 5.

capability to that currently provided by CT-1 and other existing units."[63]

12. The Consumer Advocate first addresses the issue of whether or not the additional capacity is necessary. Referencing HECO's January 30, 2015 "Adequacy of Supply" report, the Consumer Advocate concludes that (a) if Waiau units 3 and 4 are deactivated, there will be a reserve capacity shortfall; and (b) HECO's existing dispatchable generating units are aging and "do not provide the flexible, efficient, quick starting, and quick ramping attributes that are needed to facilitate the further integration of intermittent renewable energy sources."[64]

13. The Consumer Advocate also considered a number of alternatives to the SGS Project, including: (a) deferring the deactivation of the Waiau units 3 and 4; (b) increasing demand response programs; (c) reactivating certain deactivated units (e.g., Honolulu units); or (d) acquiring new firm generation capacity through the competitive bidding process.[65] The Consumer Advocate concluded:

> None of these solutions, save option 4, can meet the key objectives of providing islanded emergency power to the Army; assist in the retirement of Waiau 3 and 4; and accommodating greater amounts

[63]Application at 37.

[64]CA SOP at 14-15 (footnotes omitted).

[65]CA SOP at 15 (footnote omitted).

> of renewable energy as effectively as the proposed SGS Project. Therefore, alternatives [(a), (b), and (c)] were dismissed as not capable of fulfilling Hawaii's clean energy goals and providing emergency power to the Army. Alternative [(d)] was already determined by the Commission in granting Hawaiian Electric a waiver from the competitive bidding framework in order to further a governmental purpose.[66]

14. In a May 8, 2015 report by Sawvel and Associates, Inc. ("Sawvel"), to the Consumer Advocate (the "Sawvel Report"), Sawvel states that "the SGS Project will serve as partial replacement capacity for the Waiau Units 3 and 4 that HECO has targeted for deactivation," and, further, that "[w]hat isn't measured by HECO's current capacity planning criteria are the SGS attributes that include[] improving system energy security and resiliency, with units that provide greater operating flexibility, and are expected to be more reliable and more fuel efficient [than] the continued use of the Waiau Units 3 and 4."[67]

15. Sawvel also analyzed the SGS Project in conjunction with HECO's Power Supply Improvement Plan ("PSIP"), which is currently under commission review in Docket No. 2014-0183, and concluded that "HECO's PSIP indicates the SGS is needed [for]

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[66]CA SOP at 15.

[67]Sawvel Report at 10.

firm capacity, energy security and resiliency, and to incorporate higher amounts of variable renewable energy."[68]

16. Sawvel further observed that the SGS Project could provide a number of operational benefits, including (a) a high ramp rate for up and down regulation; (b) the ability to start/stop or cycle multiple times without significantly increasing maintenance costs; (c) quick start time to full load (10 minutes or less); (d) blackstart capability, both for the SGS and other generating stations; (e) firm capacity for meeting reliability requirements; (e) the ability to dispatch to meet changes in demand and variable renewable output; and (f) dynamic response and VAR support (ancillary services that are necessary to support and maintain frequency and reactive power imbalances).[69] Sawvel thus concluded that "[t]hese SGS attributes can provide system stability and provide regulating reserves to integrate and minimize curtailment of intermittent renewable resources."[70]

17. The Consumer Advocate also retained Kiewit Engineering & Design Co. ("Kiewit") to assist Sawvel in its analysis. On May 8, 2015, Kiewit issued its "Schofield Generating Station, Docket No. 2014-0113,

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[68]Sawvel Report at 12; see also CA SOP at 11.

[69]Sawvel Report at 13.

[70]Sawvel Report at 13.

Project Review Report" (the "Kiewit Report"). After discussing the operational characteristics of the SGS Project and noting that it had some suggestions to minimize operation and maintenance costs, Kiewit concluded that "based on Kiewit's experience, we agree that Wartsila RICE power generating equipment is the best choice for the SGS project," and further observed that "[t]he engines are highly reliable, fairly efficient, and easy to maintain."[71]

2.

Security and Emergency Considerations

18. HECO's Reply SOP summarizes the benefits of the project with respect to emergency situations as follows:

> The SGS Project will provide disaster recovery capability attributes that include the following: (a) enhanced ability to supply power for long-term disaster relief efforts until normal conditions are restored; (b) lower vulnerability to natural disasters and man-made threats by its central island location in a secured military area that is immune to the coastal effects of tsunami and storm surge; (c) the SGS Project would provide emergency power to Schofield Barracks, Wheeler Army Airfield, and Kunia Field Station and help the Army meet certain national security objectives; (d) the SGS Project will have the capability to black-start

[71]Kiewit Report at 15.

> Hawaiian Electric's Waiau generating units during a major outage.[72]

19. In its initial SOP, HECO further explains that the SGS Project would enhance energy security and resilience for the island of Oahu in general and the Army in particular both in normal operating conditions and in times of emergency:

> The Project would serve all Hawaiian Electric customers under "normal" operating conditions, and it would provide enhanced energy security and resilience for the island of Oahu. All of Oahu's existing generating stations are located near the coast and are subject to major storm surges and tsunamis. Conversely, as the first generating station centrally located over eight miles from and approximately 900 feet above the sea, the proposed Project would be immune to the coastal effects of tsunami and storm surge. The Army has requirements for energy security and resilience for their facilities in central Oahu. The Army recognizes the benefits and energy security attributes of the Project and, subject to Hawaiian Electric providing the energy security guarantees that the Army requires, is willing and able to provide the land necessary for the Project and waive lease payments.[73]

20. HECO further states that the SGS Project will be able to provide power directly to the Army facilities of Schofield Barracks, Wheeler Army Airfield,

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[72]HECO Reply SOP at 2.

[73]Application at 5.

and Field Station Kunia, and further describes the Project as the most "survivable" generating station on Oahu.[74]

21. HECO also asserts that the SGS Project can assist in restoring power to the grid in the event of a weather related outage, such as a major storm or tsunami.

> In addition to its inherent flexibility and survivability, the SGS Project would provide an additional resiliency capability that supports island- and State-wide civil defense capabilities. Should coastal effects or any other disaster impact the ability of ports and airports to resupply Oahu and the State, the Project would not only have the capability to provide reliable power to WAAF as a potentially critical emergency resupply facility located away from the coastline, it would also provide power to Army and Hawaii National Guard units at Schofield Barracks and WAAF in support of their disaster relief missions.[75]

22. With respect to emergency situations, the Consumer Advocate observes that "[t]he SGS project would provide emergency power to Schofield Barracks, Wheeler Army Airfield, and Kunia Field Station and help the Anny meet certain national security objectives."[76]

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[74]Application at 5.

[75]Application at 6. "WAAF" is the acronym for Wheeler Army Airfield.

[76]CA SOP at 14 (footnote omitted).

23. More specifically, the Consumer Advocate states that the SGS Project can provide the following benefits during emergency situations:

> Under defined emergency conditions, the SGS Project will be "islanded" to provide power primarily to the Army facilities at Schofield Barracks, Wheeler Army Airfield ("WAAF"), and Field Station Kunia. In the event of a significant outage, the SGS Project will also provide capability to blackstart Hawaiian Electric's electric system by providing power to start combustion turbine units at Hawaiian Electric's Waiau power plant through multiple redundant existing transmission paths.[77]

24. The SGS Project may also assist other State and Federal non-military emergency response assets which are located on the bases. HECO's response to CA-IR-2 identifies the following: (a) Federal Fire Department stations located on Schofield Barracks and WAAF, which include both firefighting and paramedic units that respond to both on-base and off-base calls, in coordination with the Honolulu Fire Department ("HFD"); (b) the Department of Defense Police, whose units also respond both on-base and off-base, in coordination with HPD; (c) the U.S. Army Acute Care Health Clinic, Schofield Barracks; (d) the civilian medical evacuation ("MEDEVAC") helicopter unit based at WAAF; and (e) the Civil Air Patrol. HECO also observes

[77]CA SOP at 7-8 (footnotes omitted). These issues are discussed in detail in Exhibit 4 to HECO's Application.

that the SGS Project may have the capability under certain circumstances to provide power to Wahiawa community-based disaster response assets, Wahiawa Police Station, Wahiawa General Hospital, HFD Station 16, and the City and County of Honolulu Emergency Medical Services Wahiawa Unit.

25. HECO further states that:

> Critical infrastructure can be subject to man-made threats as well. Although the Oahu grid meets industrial security and redundancy requirements, as the only generating station on Oahu to be located on a military base, the SGS will not only be protected by Hawaiian Electric's standard security protocols, it will be additionally secure due to its location inside the Army's Schofield Barracks fenceline.[78]

3.

Cost And Rate Impact Considerations

26. HECO initially estimated that the total cost of SGS Project would be $170,000,000.[79]

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[78]Application, Exhibit 4 at 4.

[79]A full breakdown of these initial costs is set forth in the Application, Exhibit 8.

Area	Cost	Sub-Area	Cost
Generating Station	$118,076,000	EPC Contract	$ 59,566,000
		Allowance for Change Orders	$ 8,485,000
		Engines (Wartsila Scope)	$ 42,727,000
		Owner's Cost	$ 7,298,000
Interconnection	$ 17,324,000	46 kV Line	$ 7,424,000
		Switchyard	$ 5,386,000
		Wahiawa Substation	$ 2,638,000
		Telecom	$ 1,203,000
		Project Management	$ 673,000
Sub-Total	$135,400,000		
Overheads	$ 20,868,000		
AFUDC	$ 14,129,000		
TOTAL	$170,397,000		

27. HECO further stated that:

> There are two variables in the cost estimate that will directly affect the overall Project cost and are dependent upon when full Notice to Proceed ("NTP") is given to the EPC contractor and the engine manufacturer, Wartsila North America, Inc ("Wartsila"): escalation and the euro exchange rate. Hawaiian Electric has taken measures to minimize the effect these factors will have on

> overall project cost, but they are not totally within the control of the Company.[80]

28. Initially, HECO determined the annual revenue requirements for the SGS Project under two contingencies: one where LNG is available (the Project would use biodiesel and LNG), and one where it is not (thus the Project would use a biofuel blend).[81] However, following the filing of the Consumer Advocate's SOP, HECO changed its position as follows in its Reply SOP:

> Hawaiian Electric first clarifies that due to Hawaiian Electric's removal of the LNG Scope (as defined in Section II.A.3 below) from the Project, estimated total Project costs are now $3 million less at $167 million. Hawaiian Electric next notes that the Commission has previously stated that placing a cap on project costs may not be an effective way of reducing cost risk to Hawaiian Electric's customers (see Section II.A.1 below). However, should the Commission agree with the Consumer Advocate's recommendation to limit approved total Project costs, Hawaiian Electric would be willing to accept a limitation of total Project costs to $167 million, subject to the dollar/Euro exchange rate risk (see Section II.A.1 below).[82]

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[80]Application at 27.

[81]Application at 17.

[82]HECO Reply SOP at 3-4 (footnote omitted).

29. Having eliminated the LNG Scope, HECO estimates that the monthly bill impact of the SGS Project for a typical customer of 600 kWh would be as follows:[83]

Sales Forecast Scenarios	2018	2020	2025	2030	2035
Decreasing Sales	$2.44	$2.27	$1.78	$1.15	$0.58
Slightly Increasing Sales	$1.95	$1.70	$1.18	$0.69	$0.34

30. In analyzing the SGS Project Costs, the Consumer Advocate first observed that "[a]s discussed on page 18 of the Kiewit Report, the costs associated with the EPC contract and procurement of the RICE units are approximately $500/kW to $700/kW higher than other similar projects located in the Gulf Coast and Mid-West regions of the United States."[84] The Consumer Advocate thus determined that "there may be significant levels of cost contingencies built into various aspects of the Project, including the EPC contract."[85]

31. The Consumer Advocate states that it retained Sawvel and Kiewit for the purpose of attempting to determine the

[83]Application, Exhibit 10 at 19 and Attachment 5.

[84]CA SOP at 18.

[85]CA SOP at 18.

cost contingencies included project cost estimate of $170 million.[86] However, given the complexity of the cost estimation, the Consumer Advocate further states that neither Sawvel nor Kiewit were successful in breaking down individual line items to determine the contingencies that are included in the original project cost.[87]

32. Despite this conclusion, the Consumer Advocate recognizes that HECO has claimed that it will hold to its original estimate of $170 million (now $167 million) in spite of the expected increase in the EPC contract price. However, the Consumer Advocate further states that:

> In order to prevent HECO from benefiting from originally overestimating the project costs, the Consumer Advocate recommends that the Commission issue an order that includes a 90% cap on the estimated project cost that HECO can recover through a recovery mechanism other than base rates.

33. The Consumer Advocate also observes that some of the cost differences between the SGS Project and similar mainland projects are due to both the higher cost of doing business in Hawaii, as well as some of the Project requirements:

> As discussed further in the Kiewit report, some of the cost differences between the SGS Project and similar mainland projects are related to higher costs for bulk material,

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[86]CA SOP at 20.

[87]CA SOP at 20-21.

> labor, and freight in Hawaii than the United States mainland, the relatively small size of the power generating station as compared to the mainland projects, and fluctuations in price of the Wartsila equipment due to the changes in the exchange rate between European euros and United States dollars. Kiewit further notes that several requirements dictated by the project scope are also causing the project costs to be higher than expected for a 50 MW RICE power generating project. These requirements include the following:
>
> • The need for the RICE power generation equipment to have a dual-fuel capability (liquid and gas).
>
> • The use of biodiesel fuel in the RICE power generation equipment.
>
> As a result of these requirements, Kiewit estimates that the project costs are greater by approximately $9 million compared to the same project using single-fuel capable equipment and burning petroleum diesel only.[88]

34. Finally, while the biodiesel requirement is further discussed below, the Consumer Advocate also observed that such requirement also resulted in an increase in the SGS Project Costs:

> In its response to CA-IR-INFORMAL-2, Hawaiian Electric asserts that the biofuel requirement alone would favor Wartsila given that the other identified RICE manufacturing vendors either did

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[88]CA SOP at 21-22 (footnotes omitted), citing Kiewit Report at 19-20. In its SOP, the Consumer Advocate objected to HECO's dual fuel proposal, contending that the costs and risks associated with that functionality are unacceptable and that measures should be taken to mitigate the impact on customers. CA SOP at 23. Given the removal of the costs of the LNG Scope, further discussion of this issue is moot.

> not manufacture biofuel-capable equipment, no longer market their units in North America, or were not as experienced as Wartsila with biofuel equipment. Therefore, the biofuel requirement effectively left a single vendor who was capable of providing the necessary equipment to burn both petroleum diesel and biodiesel - Wartsila. Basic economics tells us that where there is a lack of competition amongst sellers, then prices tend to rise. As quantified on page 20 of the Kiewit Report, the biofuel requirement adds $800,000 to $1 million to the overall price for this project.[89]

35. In its Reply SOP, HECO states that it is willing to cap the project cost at $167 million (that is, the $170 million minus $3 million to reflect the removal of the LNG Scope).[90] However, HECO disagrees with the proposed 90% cap:

> The Consumer Advocate recommends that the Commission only approve $153 million, which is 90% of the total Project costs, for cost recovery through any cost recovery mechanism other than base rates. The Consumer Advocate states that if the costs exceed $153 million, Hawaiian Electric can seek to recover up to the requested total of $170 million, but can only do so in a rate proceeding, after the SGS is used and useful and Hawaiian Electric has justified any costs beyond the $153 million. While Hawaiian Electric would be willing to accept a total Project cost limitation of $167 million, Hawaiian Electric disagrees with these recommendations. The Consumer Advocate does not provide a basis for its recommendation to limit cost recovery through any cost recovery mechanism other than base rates to 90% of the total cost. Such a

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[89]CA SOP at 24.

[90]HECO Reply SOP at 4.

> recommendation is arbitrary and in effect would delay the cost recovery of Hawaiian Electric for the reasonable costs of the Project. Hawaiian Electric should be permitted to seek cost recovery for the total costs of the Project (up to $167 million) through cost recovery mechanisms other than base rates, consistent with Hawaiian Electric's Above RAM Cap Standards and Guidelines or the Modified REIP if, and to the extent, such Standards and Guidelines and/or Modified REIP are approved by the Commission (as those terms are defined in Section II.F below).[91]

36. HECO states that it understands the cost concerns raised by the Consumer Advocate, that it is committed to controlling costs, and that its cost estimates are conservative.[92]

37. HECO further states that while the biodiesel requirement may have increased the total SGS Project cost, it also assists HECO in meeting the states' RPS requirements without taking into consideration the Army's requirements.[93] In addition, HECO notes that use of biodiesel will not increase maintenance and non-fuel operating costs.[94]

38. Finally, with respect to the impact of any fluctuations in the Euro on the SGS Project cost, HECO states that the total Project cost estimate included $42.7 million for the

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[91]HECO Reply SOP at 4-5.

[92]HECO Reply SOP at 11.

[93]HECO Reply SOP at 7.

[94]HECO Reply SOP at 7.

Wartsila scope, which was calculated based on the Euro exchange rate of $ 1.3867/€ at the time the Application was filed.[95] In its Reply SOP, HECO states that "[a]lthough the dollar/Euro exchange rate has declined since that time - which would result in reduced Project costs - the exchange rate is outside of the Company's control and could increase again in the future."[96] Thus, HECO concludes:

> The Company's ability to accept a cost recovery cap of $167 million is predicated on the assumption that the Euro exchange rate is $1.3867/€ or less at the time that Hawaiian Electric issues a notice to proceed under the Wartsila contract. In the event that a higher exchange rate causes the total Project cost to exceed the requested amount, the Company would seek recovery of that additional amount through the appropriate regulatory process. However, the Company will take the appropriate actions with respect to the total Project cost and expects to be able to manage the Project within the overall budgeted amount.[97]

4.

Other Revenue Considerations

39. HECO states that the Army is making the following contributions to the SGS Project. First, the Army is paying the

[95]HECO Reply SOP at 10.

[96]HECO Reply SOP at 10-11.

[97]HECO Reply SOP at 11.

cost to conduct the federal Environmental Impact Statement ("EIS") for the Project, which is estimated by the Army to be $1,135,000.[98] Second, HECO states that the appraised rental value of the 8.13 acre site is $352,000 per year, which will not be charged to HECO as long as it meets the energy security guarantees under the Draft Lease and Operating Agreement ("Lease and Operating Agreement").[99] Third, because the SGS Project site is inside the Army's fenceline, the onsite presence of a HECO security officer is not required, which results in an annual savings of $189,000 when compared to siting a generating station on an industrial property.[100]

40. The Consumer Advocate agrees that these contributions have value - savings of approximately 4.3 million net present value - but it also notes that these benefits "will not fully offset the capital expenditures related to the biofuel requirement."[101]

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[98]Application, Exhibit 4 at 18. Hawaiian Electric notes that it "is paying only the incremental cost of conducting the additional EIS work that is required to meet State EIS requirements, and any additional EIS costs incurred due to the inclusion of LNG into the Project scope, the total for which is estimated to be $200,000." Id.

[99]Application, Exhibit 4 at 16 and Attachment 2. The Lease and Operating Agreement is attached to the Application as Exhibit 7.

[100]Application, Exhibit 4 at 17.

[101]CA SOP at 25.

41. However, the Consumer Advocate also states that the Army's various sites contribute a substantial amount to HECO's electric revenues on an annual basis. As succinctly summarized by the Consumer Advocate:

> [T]he Consumer Advocate recognizes that the Army's presence in Hawaii not only serves a strategic national defense objective and is a major contributor to Hawaii's economy. The presence of the Army's sites (i.e., Schofield, Wheeler, Kunia) contribute an estimated $9.4 million in revenues for electric service to Hawaiian Electric. Forcing the Army to design and construct its own SGS emergency generator may lead the Army to consider going off of Hawaiian Electric's grid, which will result in millions of dollars in lost electricity sales for Hawaiian Electric. The Consumer Advocate believes that it important to support the Anny's presence in Hawaii.[102]

42. HECO agrees, and further explains that:

> The analysis of estimated ratepayer impacts associated with the Project is addressed in Exhibit 10 of the Application. Regarding the impact of retaining the load associated with the Army's facilities, the estimated impact of losing selected Army facilities is approximately $9.4 million dollars per year, based on 2013 billing statistics. These dollars represent a lost contribution to fixed cost for the WAAF, Schofield Barracks, and Field Station Kunia facilities. The lost contribution to fixed cost was determined by estimating the electric sales revenue that Hawaiian Electric would no longer receive, and subtracting an estimate for fuel and purchase power revenue requirements that

[102]CA SOP at 31. See also, HECO Reply SOP at 24.

Hawaiian Electric would no longer incur as a result of no longer serving the selected Army facilities.[103]

5.

Renewable Energy Considerations

43. In its Application, HECO states that the SGS Project would contribute to the achievement of Hawaii's and the Company's renewable energy goals in two ways: (a) by directly generating renewable energy from biofuels; and (2) by facilitating grid operations to enable integration of higher levels of variable renewable energy.[104]

44. HECO points out that the draft Operating Agreement provides that "[t]he SGS Project will be configured such that under normal circumstances it can connect to the grid and be dispatched by Hawaiian Electric as required to serve all customers, including facilitating the integration of additional levels of variable renewable generation to the system."[105] More specifically, HECO observes that the flexible operating characteristics previously discussed will directly address certain problems associated with the integration of renewables:

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[103]Application, Exhibit 4 at 15; see also Exhibit 10

[104]Application at 6.

[105]Application at 22.

> Although existing generating facilities have the capability to compensate for the current fluctuations caused by variable renewable generation from wind and solar, Hawaiian Electric is already experiencing grid fluctuations that challenge this capability. As more variable renewable energy is added to the grid, and as new wind and solar generators become more concentrated (i.e., larger industrial solar photovoltaic ("PV") sites versus distributed residential PV), these fluctuations are anticipated to increase in magnitude and frequency. Quick-starting units such as the RICE units selected for the Project are needed to complement the technical advantages of existing units to not only ensure reliable power to customers, but to enable the integration of more cost-effective variable renewable generation.[106]

45. The Consumer Advocate also recognizes these benefits. For example, the Sawvel Report states that "HECO's PSIP indicates the SGS is needed to [increase] firm capacity, energy security and resiliency, and to incorporate higher amounts of variable renewable energy."[107] The Sawvel Report concludes:

> The SGS Project will contribute to Hawaii's renewable energy goals in two ways. First, by operating on biofuel, the SGS Project will contribute to meeting the State's renewable energy goals. As previously addressed, the use of biofuels at the SGS Project appears to be driven by the Army's requirements, and may not be necessary to meet renewable energy goals or other purposes.

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[106]Application at 40.

[107]Sawvel Report at 12.

> The second way the SGS Project contributes to Hawaii's renewable energy goals is the technology allows the generation system to achieve a future high level of penetration of renewable resources. The characteristics of the proposed SGS Project complement the grid improvements that will complement the increasing amount of intermittent wind and solar resources expected on HECO's system. As more variable renewable energy resources are added to the system, the challenge of fluctuations increasing magnitude and frequency become more critical to enable the integration of such variable generation.[108]

46. In response to an information request, HECO estimates that the energy from the SGS Project by the use of biodiesel will contribute approximately 0.54% and 0.65% to its RPS goal in 2020 and 2030, respectively (based on the minimum biodiesel amount of 3.5 million gallons per year).[109] However, given that the commission is, in Section III.D of this Order, directing HECO to shift biofuel from its CIP CT-1 unit to the SGS Project, these figures appear to be overstated, and the direct impact on RPS through the utilization of biofuels will be minimal but could further integration of low-cost, variable renewable sources if dispatched accordingly.

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[108]Sawvel Report at 17.

[109]See Response to CA-Informal-IR-5, Attachment 1.

6.

The Commission Concludes That, On Balance And Consistent With The Public Interest, The Considerations Discussed Above Support Approval Of HECO's Request To Commit Funds In Excess Of $2,500,000, In Accordance With General Order No. 7, For The Purchase And Installation Of The Proposed Schofield Generating Station Project

47. In assessing any new generation project, the commission must balance a number of factors. The benefits and costs associated with the SGS Project are discussed below.

a.

Benefits

48. HECO and the Consumer Advocate generally agree that the SGS Project would provide a number of significant benefits. The record evidence discussed above demonstrates that the following benefits may be realized from the SGS Project:

- Natural Disasters - With respect to natural disasters such as hurricanes and tsunamis, the Project provides enhanced ability to supply power for long-term disaster relief efforts until normal conditions are restored.

- Man-Made Threats - The Project has lower vulnerability due to the SGS Project's central island location in a secured military area. This also helps to immunize the Project from natural disasters due to the coastal effects of tsunami and storm surge.

- National Security - The Project has the capability to provide emergency power to Schofield Barracks, Wheeler Army Airfield,

and Kunia Field Station, and to "island" the SGS Project to provide power primarily to those facilities.

- Major Outages - The Project has the capability to black-start HECO's Waiau generating units through multiple paths.

- Other Emergency Circumstances - The Project may have the capability to provide power to the following: Wahiawa community-based disaster response assets, Wahiawa Police Station, Wahiawa General Hospital, HFD Station 16, and the City and County of Honolulu Emergency Medical Services Wahiawa Unit.

- Grid Operations - Operational flexibility is enhanced because the Project has been configured with six separate reciprocating engines each having a generating capacity of 8.4 MW; moreover, the Project can be started from a de-energized and unsynchronized state to full capacity (i.e., 50 MW) within six minutes.

- Other Operational Benefits - The Project may provide: (a) a high ramp rate for up and down regulation; (b) the ability to start/stop or cycle multiple times without significantly increasing maintenance costs; (c) firm capacity for meeting reliability requirements; (d) dispatch capability to meet changes in demand and variable renewable output; and (f) dynamic response and VAR support

- Retirement Of Older Generation Units - The Project would assist in the retirement of Waiau 3 and 4; and

- Renewable Integration - The Project would assist in accommodating greater amounts of renewable energy and may help to achieve the State's RPS goals to a minor degree.

49. In addition, the Consumer Advocate observed that the Army's sites (i.e., Schofield, Wheeler, Kunia) contribute an estimated $9.4 million in annual revenues for electric service to Hawaiian Electric. In the event that Army elected to go off grid for a portion or all of its electric supply requirements, electric rates would increase for remaining ratepayers under the existing sales decoupling mechanism.

50. As can be seen, the SGS Project has the potential to provide significant benefits to ratepayers by enhancing the operation of the grid to improve safety, reliability, and responsiveness to emergency situations.

51. These benefits must be weighed against the increased costs to ratepayers if the project is approved.[110] The commission shares the concerns expressed by the Consumer Advocate concerning the complexity of the cost

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[110]The commission observes that in a series of recent orders pertaining to utility scale solar projects, it raised concerns about the capacity of the HECO grid to integrate all of the proposed projects along with the existing renewable generation that is already online or approved. Thus, the commission found that several of the PPAs may have precluded other opportunities for lower-cost utility scale projects in the near future and other types of renewable development. See, e.g., In the matter of the Application of Hawaiian Electric Company, Inc., For Approval of Power Purchase Agreement for Renewable As-Available Energy with SunE Waiawa Solar, LLC, Docket No. 2014-0358, Decision and Order No. 33078, filed August 14, 2015, at 50-51, 66.

estimates. Moreover, HECO did not clearly explain the various contingencies in the cost estimates, nor did it provide certain metrics commonly used to compare project development costs, such as a busbar cost estimate.[111] Thus, as further discussed below, while the commission is approving the project, the commission is also placing certain restrictions on cost recovery so as to protect ratepayers. HECO is cautioned that in future Applications, it should fully explain its cost estimates, provide standard industry cost metrics for comparison, and provide quantified estimates of expected economic benefits to customers.

b.

Costs And Cost Recovery

52. As discussed in the following paragraphs, the commission approves a cap of $167 million for the SGS Project costs, adjusted for the exchange rate as discussed below. In addition, the commission adopts the 90% cap as proposed by the Consumer Advocate.

[111]The busbar cost is the cost of the power leaving the plant, and includes all capital, fuel, and operating costs.

(1)

Total Cost And Cost Cap

53. With respect to the Project's costs, HECO originally estimated the cost to be $170 million. However, after removing the cost for the LNG Scope, the estimated cost has been reduced to $167 million. The Consumer Advocate recommends capping the costs which HECO may ultimately recover from ratepayers at this level, and HECO has agreed, subject to fluctuations in the Euro. As modified in the following paragraphs, the commission approves a cap of $167 million for the SGS Project costs, adjusted for the exchange rate as discussed below. The commission further concludes that the Consumer Advocate's cost recovery proposal should be adopted.

54. To begin, the commission is mindful of the impact of the SGS Project on rates. The cost of new generation will increase HECO's rate base, which, in turn, will result in an increase in rates. Depending on whether sales increase, decrease, or remain the same over the life of the project, HECO's estimates of monthly increases in a typical customer bill range from $1.95 to $2.44 in the initial years of the project, and decrease over time. At the same time, the commission notes that were the Army to decide to go

off grid, HECO would lose approximately $9.4 million in annual revenues according to the Consumer Advocate.

55. In order to protect ratepayers from risk associated with cost overruns or other factors, the commission concludes, as recommended by the Consumer Advocate, that it is reasonable to place a cap on the recovery of the costs associated with the SGS Project costs. After removing the cost of the LNG Scope, HECO estimates that the total project cost will be no more than $167 million. Thus, the commission is establishing a cap of $167 million for the total project costs.

56. In rendering this decision, the commission has balanced the benefits set forth above with the increase in rates. The commission concludes that the benefits that can be derived from the SGS Project justify the increase in rates. Moreover, the SGS Project will be HECO's most fuel efficient and flexible generator. In so concluding, however, the commission notes that one of the major benefits of the SGS Project is the operational flexibility associated with the RICE units. The commission directs HECO to maximize the use of these units so as to promote the integration of low-cost renewables, assist in system operations, and minimize costs. Within sixty (60) days of the date of this Order, HECO shall file a full explanation of how it plans

to operate the SGS Project so as to maximize the economic benefits to ratepayers. This explanation should provide an analysis and comparison of various beneficial operational plans for SGS, as well as a preferred alternative, so as to maximize benefits to ratepayers.

(2)

The Euro Exchange Rate

57. As noted above, HECO states that it is willing to accept a cap of $167 million, provided that "the Euro exchange rate is $1.3867/€ or less at the time that Hawaiian Electric issues a notice to proceed under the Wartsila contract."[112] In the event that a higher exchange rate causes the total Project cost to exceed the requested amount, HECO requests that it be permitted to seek recovery of that additional amount through the appropriate regulatory process.[113] In support of this request, HECO argues that that "the exchange rate is outside of the Company's control."

58. The commission concludes that this request should be denied for two related reasons. First, ratepayers clearly have no control whatsoever over

[112]HECO Reply SOP at 11.

[113]HECO Reply SOP at 11.

fluctuations in the exchange rate. Second, contrary to HECO's claims, there are methods by which HECO can manage the risk associated with currency fluctuations. These include hedging, such as the use of forward contracts.[114] There is no indication in this record that HECO has considered utilizing such measures.

59. Because HECO can manage the risk of fluctuating exchange rates and ratepayers cannot, the commission concludes that it is appropriate to cap the exchange rate at $1.3867/€, which is the Euro exchange rate that was used for the $42.7 million estimate for the Wartsila scope.[115] In addition, the commission observes that currently, the Euro to dollar exchange rate is about $1.12 to $1.00. Thus, HECO shall take all steps necessary to lock in an exchange rate that is the lowest rate possible. These savings are to be passed through to ratepayers through an adjustment to the $167 million cap, as discussed in the following section of this Order.

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[114]A forward contract allows an entity to agree to an exchange rate today at which to buy or sell currency at a date in the future.

[115]HECO SOP at 10.

(3)

Cost Recovery Through Mechanisms Other Than Base Rates

60. As discussed above, the Consumer Advocate also recommends that the commission approve only 90% of the total of $167 million for cost recovery through any cost recovery mechanism other than base rates. HECO opposes this request.

61. Based on the commission's review of the record, as well as its concerns about the cost of the SGS Project, the commission will adopt the Consumer Advocate's proposal, with a modification to address the exchange rate issue discussed above. Thus, the commission caps the amount of total costs that may be recovered through any cost recovery mechanism other than base rates at 90% of $167 million. In addition, the $167 million cap shall further be adjusted downward due to any reduction in the cost of the Wartsila contract due to a reduction in the foreign exchange rate.

62. The 90% cap (as applied to the $167 million without any further downward adjustment) would limit the amount of cost recovery outside of base rates to approximately $150 million. The commission observes that in response to CA-Informal-IR-8, HECO stated that under favorable conditions, the total project cost could be less than $150 million.

63. Moreover, with respect to recovery of costs outside of base rates, in a recent order concerning decoupling, Order No. 32735, the commission found:

> 2. The RAM mechanism shall be modified to include a cap that shall be applied to the total annual RAM Revenue Adjustment. The cap shall limit the automatic component of RAM adjustment increases to an amount equal to or lower than the Gross Domestic Product Price Index ("GDPPI").
>
> ....
>
> 4. In order to provide a means for timely recovery of expanded capital programs, the Commission will allow the Companies to apply for approval by the Commission, on a case by case basis, to recover revenues outside of and in addition to the capped RAM revenues. The HECO Companies and the Consumer Advocate shall develop criteria for the commission's review for recovery of these costs (which may include consolidated or "programmatic" baseline expenditures) through the RAM or the Renewable Energy Infrastructure Program ("REIP") surcharge.[116]

[116] In the Matter of PUBLIC UTILITIES COMMISSION Instituting an Investigation to Reexamine the Existing Decoupling Mechanisms for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited, Docket No. 2013-0141, "Order No. 32735 Modifying Decoupling Mechanisms And Establishing Briefing Schedule," filed on March 31, 2015, at 5-6 ("Order No. 32735").

64. In Order No. 32735, the commission further directed the HECO Companies and the Consumer Advocate to "develop standards and guidelines for eligibility of projects and determination of the amount of eligible cost recovery above the RAM Cap or outside of the RAM mechanism through the REIP or other adjustment mechanism," and to file these proposals with the commission on or before June 15, 2015.[117] Other parties were permitted to comment on these proposals on or before June 30, 2015.[118]

65. The commission is currently in the process of reviewing these proposals and comments. However, the commission also made it clear that prior to its approval of any such proposals "the HECO Companies may file an application for approval of a Major Project at any time consistent with this Order."[119]

66. Thus, in addition to the 90% cap discussed above, the commission further concludes that in order to recover any of the costs associated with the SGS Project other than through a base rate proceeding, HECO must proceed in accordance with Order No. 32735. The Consumer Advocate will have the opportunity to respond to any such filing as it deems appropriate, and the

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[117]Order No. 32735 at 114-115.

[118]Order No. 32735 at 115.

[119]Order No. 32735 at 115.

commission will determine the appropriate method of cost recovery, if any, in any such proceeding.

67. Finally, HECO is cautioned that it may not file for recovery of the SGS Project costs in piecemeal fashion so as to defeat the purpose of Order No. 32735. Stated differently, HECO must apply for recovery of the total SGS Project costs (including any cost reductions attributable to the SGS Project such as the retirement of Waiau Units 3 & 4), not individual costs for discrete elements within the Project.

(4)

Decision and Order No. 30552

68. The commission approved the waiver for the SGS Project in Decision and Order No. 30552, filed on August 1, 2012, in Docket No. 2011-0386 ("Order No. 30552"). In approving the waiver, the commission stated that it had "significant issues of concern" with the proposed Project, and, thus, directed HECO to address a number of concerns in any future application concerning the Project.[120]

69. HECO has addressed these concerns in Exhibit 4 to its Application. The commission has reviewed this Exhibit and finds that it is generally responsive to the issues raised in

[120]Order No. 30552 at 13-15.

Order No. 30552. In many instances, the responses have been incorporated into the Application. To the extent that the commission has concerns with issues raised in any of the responses, those concerns are addressed in this Order.

c.

Conclusion

70. Based on its review of the entire record and the positions of the Parties, the commission finds and concludes that the proposed SGS Project, as conditioned and modified herein, is reasonable and in the public interest.

C.

Issue No. 2

Whether The Commission Should Approve The Construction Of The Proposed New 46kV Overhead Sub-Transmission Line And The Reconductored Overhead Section Of An Existing 46 kV Line Extension Required For The Proposed Schofield Generating Station Project

1.

Introduction

71. As discussed above, the proposed 46 kV portion of the Project includes: (a) the installation of a new 46 kV overhead pole line; (b) the replacement of poles and reconductoring of a section of an existing overhead 46 kV line extension that serves existing Army substations;

(c) the installation of motorized 46 kV switches; (d) the installation of equipment at the Wahiawa Substation to accommodate the new 46 kV circuit; and (e) the installation of a switchyard at the SGS site to transmit power from generators to the new 46 kV line.[121] The new proposed pole lines will be located on Army and State lands.[122]

72. The new 46 kV overhead line and circuit will directly tie the SGS to the Wahiawa Substation via an "express" circuit and to the Wahiawa-Mikilua line via a "T-tap."[123] The "T-tap" connection will allow for the islanding of Army facilities during certain scenarios contemplated under the proposed operating agreement between HECO and the Army, and will also serve as an alternative means to connect SGS to the grid during periods when the express line is not available.[124]

73. The electrical work will consist of installing forty-one (41) new steel poles for the new 46 kV overhead express line alignment and six (6) new steel poles to replace the

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[121]Application at 17 and Exhibit 2 at 16-18.

[122]Application at 17. The proposed 46 kV sub-transmission line will cross over Army property located on lands identified as Tax Map Key ("TMK") 7-7-001:001 and State lands identified as TMKs 9-4-12:001, 003, and 001, as well as TMK 7-6-001:006. Id., Exhibit 2, at 21 and 24.

[123]Application, Exhibit 2 at 16-17.

[124]Application, Exhibit 2 at 17,

poles in the line extension from the Wahiawa-Mikilua circuit.[125] In addition, thirty-two (32) 60-70-foot steel poles, fifteen (15) 70-80-foot steel poles, eight (8) motor operated switches, and approximately 20,400 circuit feet of 795 KCM AAC (all aluminum conductor) overhead conduction will be installed.[126] The Project will also involve removing six (6) wood poles and approximately 1,592 circuit feet of 3/0 AAAC (all aluminum-alloy conductor) overhead conductor.[127]

74. As part of the SGS Project, HECO requests authorization to construct the proposed 46kV overhead sub-transmission line and the reconductored overhead section of an existing 46 kV line extension.

2.

Applicable Law

75. HRS § 269-27.5 provides:

> **Construction of high-voltage electric transmission lines; hearing.** Whenever a public utility plans to place, construct, erect, or otherwise build a new 46 kilovolt or greater high-voltage electric transmission system above the surface of the ground through any residential area, the public utilities commission shall conduct a public hearing prior to its issuance of approval thereof.

[125]Application, Exhibit 2 at 18.

[126]Application, Exhibit 2 at 18.

[127]Application, Exhibit 2 at 18.

Notice of the hearing shall be given in the manner provided in section 269-16 for notice of public hearings.

76. HRS § 269-27.6 states, in relevant part:[128]

Construction of high-voltage electric transmission lines; overhead or underground construction. (a) Notwithstanding any law to the contrary, whenever a public utility applies to the public utilities commission for approval to place, construct, erect, or otherwise build a new 46 kilovolt or greater high-voltage electric transmission system, either above or below the surface of the ground, the public utilities commission shall determine whether the electric transmission system shall be placed, constructed, erected, or built above or below the surface of the ground; provided that in its determination, the public utilities commission shall consider:

(1) Whether a benefit exists that outweighs the costs of placing the electric transmission system underground;

(2) Whether there is a governmental public policy requiring the electric transmission system to be placed, constructed, erected, or built underground, and the governmental agency establishing the policy commits funds for the additional costs of undergrounding;

(3) Whether any governmental agency or other parties are willing

[128]The commission notes that subsections (b) and (c) are not applicable, as the Project does not involve the construction of a new 138 kV or greater high-voltage transmission system. See HRS § 269-27.6(b) and (c).

to pay for the additional costs of undergrounding;

(4) The recommendation of the division of consumer advocacy of the department of commerce and consumer affairs, which shall be based on an evaluation of the factors set forth under this subsection; and

(5) Any other relevant factors.

3.

HRS § 269-27.5

77. The commission held a public hearing on the Project on January 21, 2015, at Mililani Waena Elementary School Cafeteria, in Mililani, Hawaii.[129] In attendance were representatives from HECO and the Consumer Advocate.[130]

4.

HRS §269-27.6(a)

78. Pursuant to HRS §269-27.6(a)(1), the commission finds that there is no apparent benefit that outweighs the cost of placing the 46 kV line underground. The commission notes that HECO estimates that underground construction would be approximately three times the cost of the overhead

[129]Public Hearing Documents at 1.

[130]Public Hearing Documents at 1.

alternative, based on an estimate of $8.3 million for overhead construction compared to approximately $28.3 million for underground construction.[131]

79. The commission observes that this is reflected in HECO's estimated bill impacts to customers, where undergrounding is projected to result in monthly bill increases that are approximately three times that of bill increases for overhead construction.[132]

80. The commission finds that the visual impact of the proposed 46 kV line appears to be minimal because: (1) there are already existing overhead lines in the Project area;[133] and (2) no members from the public objected to overhead construction of the 46 kV line at the public hearing.[134]

81. Pursuant to HRS § 269-27.6(a)(2), the commission is not aware of any governmental policies requiring undergrounding.

82. Pursuant to HRS §269-27.6(a)(3), the commission is not aware of any governmental agency or any other party that is willing to pay for the additional costs of undergrounding. The commission notes that the DOT responded to HECO by declining

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[131]Application, Exhibit 3, at 1.

[132]Application, Exhibit 3, at Attachment 2.

[133]Application, Exhibit 3, at 1-2.

[134]See Public Hearing documents; CA SOP at 30.

to participate in undergrounding for the 46 kV line.[135] Likewise, the commission observes that the Army has also declined HECO's request to pay for the additional costs of undergrounding.[136]

83. Pursuant to HRS § 269-27.6(a)(4), the commission notes that the Consumer Advocate has recommended that the 46 kV line be constructed above the surface of the ground.[137]

84. Pursuant to HRS § 269-27.6(a)(5), the commission is not aware of any other relevant factors.

5.

Order No. 32052

85. In Exhibit A to Order No. 32052, the commission provided guidance with regard to transmission planning and the future development of new transmission projects on Hawaii grids:[138]

> **New transmission projects must consider non-transmission alternatives** - New, replacement or upgrade high-voltage transmission projects generally represent significant, lump capital investments that will be given careful scrutiny. Non-transmission alternatives (NTAs) such as local peaking or back-up generators, energy storage, demand response and smart grid resources are technically and commercially viable alternatives and must be evaluated as

[135]HECO Response to CA-IR-29, Attachment 1.

[136]HECO Response to CA-SIR-44, Attachment 1.

[137]CA SOP at 29.

[138]Decision and Order No. 32052, Exhibit A at 12.

part of any economic justification for new transmission system projects.

86. The commission observes that HECO has requested a waiver from the non-transmission alternative analysis for the Project, arguing that the Project itself should be considered a non-transmission alternative, as it will provide new frim generation, and the proposed 46 kV line is necessary to connect it to HECO's system.[139]

87. The commission notes that the Consumer Advocate did not discuss Order No. 32052 or the non-transmission analysis in its discussion about the 46 kV line.[140]

88. The commission observes that the Project is intended to contribute to Hawaii's renewable energy goals by generating energy directly and modernizing firm generation and the grid to further integrate amounts of variable renewable energy.[141]

89. Given these objectives, as well as the Consumer Advocate's non-opposition, the commission finds that a waiver of the non-transmission analysis is appropriate for the 46 kV line in this situation.

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[139]HECO Reply at 24.

[140]See CA SOP at 29-30.

[141]See Application at 39-40.

5.

Conclusion

90. Based on its review of the entire record and the positions of the Parties, the commission concludes that HECO's request to construct the new 46 kV line above the surface of the ground should be granted.[142]

D.

Issue No. 3.

Whether The Commission Should Approve
The Project's Use Of A Minimum Of Fifty Percent (50%) Biofuel,
And A Minimum Of 3.5 Million Gallons Of Biofuel Annually

91. In its Application, HECO states that "[t]he Army, as the property owner and a primary stakeholder in the Project, has required that the Project use a minimum of 50% biofuel and a minimum of 3.5 million gallons of biofuel annually."[143] Thus, HECO is seeking approval of these fuel use requirements for the SGS Project.

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[142]The commission notes that HECO's request to hold a public hearing, pursuant to HRS §269-27.5, was addressed by the commission's public hearing held on January 21, 2015.

[143]Application at 33; see also Application, Exhibit 13 (letter to HECO from the Department of the Army concerning fuel requirements, dated April 18, 2014).

92. HECO also recognizes that biofuels are relatively expensive and suggests a possible solution designed to minimize biofuel costs:

> Regarding fuel use, Hawaiian Electric's intent is to minimize the overall cost of biofuels by using biodiesel more efficiently. The Campbell Industrial Park CT-1 unit ("CIP CT-1") is a flexible simple-cycle combustion turbine, approximately 120 MW in capacity, which is designed to operate as a peaking unit. Currently, CIP CT-1 operates solely on 100% biofuel per the requirements set forth in Decision and Order No. 23457 and the Joint Stipulation between the Division of Consumer Advocacy and Hawaiian Electric, as part of Docket No. 05-0145. For comparison, the analyses in Exhibit 10 of this Application include cases where CIP CT-1 is not restricted to using 100% biofuel. Hawaiian Electric recognizes that prior to any decisions to use other than 100% biofuel in CIP CT-1, further discussions and actions involving the community, the Division of Consumer Advocacy, and the Commission will need to be completed. That said, if the SGS Project is installed, it will be a more appropriate choice as the primary location to use higher-cost biofuels since the SGS engines will use fuel more efficiently than CIP CT-1. <u>This may provide an opportunity to modify the fuel requirements placed on CIP CT-1 to minimize the cost impact to customers of using higher-cost biofuels</u>.
>
> Hawaiian Electric continues to believe it is important to maintain a level of consistent demand for biofuel as a signal to potential developers that there is a market for low-cost, locally produced renewable fuels. That is consistent with the Commission's guidance that it "strongly supports a concerted effort to displace fossil fuel supplies in firm generation with the development of

> cost-effective, locally-produced renewable fuels." <u>However, significantly increasing the total amount of biofuel use at this time would be too high of a cost burden to Hawaiian Electric's customers since biofuel prices are still substantially higher than other alternatives. By having the flexibility to shift biodiesel use from CIP CT-1 to the SGS, overall system fuel costs will be lower while still maintaining a local demand for biofuel</u>.[144]

93. Thus, in its Application, HECO recognized that it could minimize its total fuel costs while meeting the Army's biofuel requirements by shifting the biofuel used at CIP CT-1 to the SGS Project. This would, of course, entail modifications to various commission orders and other permits.

94. The Consumer Advocate supports this modification, recommending that (a) the commission approve HECO's proposal for the termination of the biofuel requirement at the CIP CT-1 unit and (2) the biofuel that was meant for CIP CT-1 be re-directed for use at the SGS Project.[145]

> As discussed in the Sawvel Report, shifting the current biofuel use at CIP CT-1 (approximately 3 million gallons per year) to the SGS (with a 3.5 million gallons per year minimum requirement by the Army) should reduce the generation costs as:
>
> - The SGS is anticipated to generate more energy than CIP CT-1 from biofuel.

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[144]Application, Exhibit 4 at 5-6 (emphasis added).

[145]CA SOP at 37.

- The improved heat rate of the Wartsila engines as compared to CIP CT-1 will allow the fuel to be used more efficiently.[146]

95. The Kiewet Report concludes that if this shift does not occur, "the current cost impact to the rate payer would be a 47% increase, or $9.150MM, in the cost of the fuel to operate the facility the first full year of operation."[147]. Kiewet observes that the shift from CIP CT-1 to the SGS Project will reduce this impact:

> It was understood from our discussions with Hawaiian Electric that the current annual biodiesel usage for CT-1 is approximately 3,000,000 gallons and that it is Hawaiian Electric's intent to transfer this same bio-diesel fuel usage to the Schofield Generation Station. Therefore, Hawaiian Electric would not be obligated to meet an annual biodiesel fuel usage requirement that is cumulative of both the CT-1 obligation and the Department of the Army request of 3,500,000 gallons. However, it should be noted, that the current 3,000,000 gallon usage requirement for the CT-1 could be adjusted or removed by the Commission at any time in the future, if the requirement is not in the best interest of the utility rate payer. Whereas, the 3,500,000 gallon usage requirement is written into the land lease agreement with the Department of the Army and will unlikely be changed.[148]

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[146]CA SOP at 26-27, citing the Sawvel Report at 15.

[147]Kiewet Report at 21.

[148]Kiewet Report at 22 (emphasis added).

96. While supporting the shift of biofuel from CIP CT-1 to the SGS Project, the Consumer Advocate takes issue with the proposed biofuel requirement of 50% of the fuel used at the Project or 3,500,000 gallons, whichever is greater.[149] Instead, the Consumer Advocate recommends that the biofuel requirement for the SGS Project should "match" the existing requirement in the CIP CT 1 biofuel contract, which is 3,000,000 gallons.[150]

97. The Consumer Advocate further observes that if this shift occurs, the SGS Project would not "significantly add to the current level of compliance with respect to the RPS," although there may be some improvement in the amount of energy produced by the biofuel.[151] However, the Consumer Advocate contends that, at this time, it is more important to focus on cost effective solutions and that the SGS Project "can facilitate the integration of future cost-effective source of renewable energy whether dispatchable or intermittent."[152]

98. Thus, the Consumer Advocate concludes:

> In order to mitigate the impact caused by the Army's biofuel specification, the Consumer Advocate recommends that

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[149]CA SOP at 37.

[150]CA SOP at 37.

[151]CA SOP at 37, n. 48.

[152]CA SOP at 37, n. 48.

> the Commission issue an order that adopts Hawaiian Electric's proposal to re-direct the biofuel currently used at Hawaiian Electric's CIP CT-1 facility to the SGS. CIP CT-1 should then be relieved of its obligation to burn 100% biofuel and would then burn less expensive petroleum fuel. Furthermore, the Commission should order that HECO's agreement with the Army should be modified to cap the maximum amount of biofuel to be run at SGS to 50% or 3, million gallons per year, whichever is lower. The 3 million gallons would be the equivalent volume that HECO currently runs per year at CIP CT-1.[153]

99. In its Reply SOP, HECO addresses both of the issues raised by the Consumer Advocate:

> Biofuel Requirement - Hawaiian Electric supports the Consumer Advocate's recommendation that the Commission direct the shift of biofuel use from Hawaiian Electric's Campbell Industrial Park Combustion Turbine I facility ("CIP CT-1") to the SGS to mitigate the impact of the Army's biofuel use requirement. Based on the higher efficiency of the proposed SGS engines compared to CIP CT-1, this shift of biodiesel used at CIP CT-1 to the new SGS will be beneficial to customers. In addition, as recommended by the Consumer Advocate, Hawaiian Electric and the Army through ongoing lease negotiations have reached agreement that the biofuel requirement may be modified to the lesser of either 50% biofuel or 3.5 million gallons of biofuel per year, instead of having to meet both requirements.[154]

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[153]CA SOP at 31-32.

[154]HECO Reply SOP at 7-8.

100. Based on its review of the entire record and the positions of the Parties, the commission concludes that it is reasonable and in the public interest to require HECO to shift its current biofuel use at CIP CT-1 to the SGS Project in order to minimize the impact on ratepayers of the cost of biofuel. The commission therefore directs HECO to take the necessary steps and file the necessary applications to accomplish this shift. Within thirty (30) days from the date of this Order, HECO shall file with the commission a detailed outline of the tasks necessary to accomplish this task which shall include, among other things, any permits and any outstanding orders of any agency, including the commission, which must be modified, and a timeline for addressing such modifications. The Consumer Advocate will have fifteen (15) days to respond to this filing.

101. With respect to the biofuel requirement at the SGS Project, while the commission would prefer to see the requirement set to match the existing requirement at CIP CT-1, as recommended by the Consumer Advocate, it appears that at this time, the Army will not agree to this requirement. However, as compared to HECO's position as set forth in the initial Application, HECO and the Army have agreed to amend the requirement to the <u>lesser</u> of either 50% biofuel or 3,500,000 gallons of biofuel per year. As this requirement is reflected in the Lease and Operating Agreement, and it is the commission's

understanding that the Agreement has yet to be finalized and filed with the commission, the commission directs HECO to continue to negotiate with the Army to reflect the lower amount of 3,000,000, that is, the lesser of 50% biofuel or 3,000,000 gallons of biofuel per year. The commission will further address this issue when the finalized Lease and Operating Agreement is filed for approval.

102. Finally, the commission observes that the Army may shift its energy requirements over time. Given the current contribution of the Army to HECO's revenues ($9.4 million) and the cost of biofuel, the commission is concerned that if the Army reduces the amount of its power supply requirements or otherwise decreases its use of the SGS Project, ratepayers will be asked to absorb the foregone current fixed cost contribution in the form of higher electric rates. In addition, the commission observes that HECO has estimated that the Net Present Value of the savings to customers over the 30 year life of the Project is $4.3M.[155] In order to achieve these benefits, it is essential that the SGS Project be operated so as to provide the maximum economic benefits for ratepayers.

103. Given the above, the commission concludes that it is appropriate to include conditions that both protect ratepayers from any decrease in fixed contributions due to a shift in the

[155]Application, Exhibit 4 at 5.

Army's energy requirements and, at the same time, ensure that ratepayers receive the maximum benefits from the project.

104. Thus, the commission concludes that one of the following two options shall be included in the Lease and Operating Agreement or other appropriate document. First, in the event that Schofield Barracks installs on-site generation, purchases energy pursuant to a PPA, or takes other actions that would materially reduce the annual contribution of the Army to HECO's fixed costs, the minimum biofuel usage requirements would be reduced as well so that the annual biofuel cost premium is approximately equal to Schofield's annual contribution to HECO's fixed costs. Second, in the alternative, the Lease and Operating Agreement or other document could include a "sole supplier" provision whereby Schofield agrees to purchase 100% of its on-site electricity requirements from HECO for the term of the Lease and Operating Agreement.

E.

Issue No. 4.

Whether The Commission Should Approve Hawaiian Electric's Request To Capitalize Lease Payments Made To The Army Prior To The In-Service Date Of The Project

105. In its Application, HECO requests commission approval to capitalize lease payments made to the Army prior to

the in-service date of the SGS Project.[156] HECO states that it will be required to pay rent to the Army commencing at the start of the construction phase of the Project, and that such monetary payments will cease when HECO demonstrates that the Project is capable of meeting the energy security guarantees detailed in the Lease and Operating Agreement.[157] HECO states that these energy security guarantees will serve as in-kind consideration in lieu of monetary rent.[158]

106. Thus, HECO argues that because "[t]his shift from monetary rent payments to in-kind consideration will occur in conjunction with the in-service date of the Project," "the rent payments between site mobilization and the in-service date will be a cost attributable to the Project, not an operating cost."[159]

107. The Consumer Advocate opposes this proposal:

> Capitalizing the lease costs for land is not consistent with generally accepted accounting principles nor is it consistent with regulatory accounting guidelines. There are certain guidelines that are adhered to when determining when to capitalize lease payments and the land lease payments described by Hawaiian Electric in this application do

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[156]Application at 2.

[157]Application at 32.

[158]Application at 32.

[159]Application at 32-33.

> not appear to fall within the guidelines. These lease payments should be expensed.[160]

108. In its Reply SOP, HECO asserts:

> As stated in response to CA-IR-9, Hawaiian Electric agrees that under U.S. generally accepted accounting principles, as addressed in Accounting Standards Codifications ("ASC") 840-20-25-11, rental costs associated with ground lease during a construction period are recognized as a rental expense. However, these lease payments are not reflected in current electric rates, and are necessary costs for this Project. The costs are essential to completing this Project and placing the Project in service. As such, it is a necessary and prudent cost and should be recoverable....
>
> Under ASC 980, a cost that would otherwise be expensed could be capitalized, if the utility receives approval to capitalize the costs and will provide for recovery of such costs in the future. The Company made the request in the Application to include the lease payments as part of the capital cost of the Project because the costs are necessary and prudent for the Project.[161]

109. The commission agrees with the Consumer Advocate that the lease payments should be expensed. At the outset, the Parties appear to agree that under generally accepted accounting principles, rental costs associated with ground lease during a construction period are recognized as a rental expense.

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[160]CA SOP at 33.

[161]HECO Reply SOP at 27.

110. Nevertheless, HECO argues that ASC 980 permits the commission to make an exception to the general rule. The commission declines to do so here. Simply because a utility incurs an expense that is not reflected in current rates, that fact alone does not mean that the utility should get immediate recovery of that expense through special accounting treatment.

111. Rate increases and rate decreases based solely on changes in individual revenue or cost items - sometimes called "single issue ratemaking" - are generally not allowed.[162] Public utilities in Hawaii are not permitted to increase their rates based on a specific cost increase without also showing that the rate increase is warranted by projected results of operations.[163] Here, the total lease payment claimed is the rent payment during a 17-month construction period of approximately $499,000; HECO has made no showing that inclusion of this

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[162]See, e.g., In the Matter of the Application of Kauai Electric Division of Citizens Utilities Company For Approval of Accounting Order to Defer Effects of the increase in Federal Income Tax Rate, Docket No. 94-0045, Decision and Order No. 13572, filed September 22, 1994, at 3 ("We have consistently held that single issue ratemaking is not allowed. Public utilities are not permitted to increase their rates based on an increase in a single, specific cost item, without a showing that an increase in rates is warranted by projected results of operation.") ("Order No. 13572").

[163]See, e.g., In re Citizens Utilities Co., Kauai Electric Div., Consolidated Docket Nos. 94-0097 and 94-0308, Decision and Order No. 14859, filed August 7, 1996, at 3.

relatively small amount as an expense is warranted by the projected results of HECO's operations.

112. For the same reasons as set forth in the preceding paragraph, the commission also denies HECO's request to include a normalized level of such costs in a future rate case.

113. Finally, the commission denies HECO's alternate proposal to record such payments as a deferred expense, and to include the amortized cost in the revenue requirements in HECO's next base rate proceeding.[164] The lease expense of approximately $499,000 does not qualify for this special accounting treatment. In Docket No. 94-0045, the commission concluded that it would allow special accounting treatment for expenses only in cases where the impact on revenue requirements was not only the result of events beyond the control of the utilities, but also of such magnitude as to warrant relief.[165] The lease expense of approximately $499,000 over 17 months incurred by HECO meets neither of these tests.

114. Based on its review of the entire record and the positions of the Parties, the commission concludes that the lease payments shall be expensed.

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[164]HECO Reply SOP at 28.

[165]Order No. 13572 at 3-4.

F.

Issue No. 5

Whether The Commission Should Approve The Proposed Forms Of The Lease And Operating Agreement

115. HECO requests that the commission approve the proposed form of the Lease and Operating Agreement:

> The Company is in the process of negotiating with the Army for the Lease of the land upon which the Project will be sited, as described earlier in this Section. A draft version of the Lease is provided as Exhibit 7, which includes a draft Operating Agreement as an Attachment thereto. The terms of the draft Lease and Operating Agreement may be subject to changes between the date of this filing and the execution of the Lease, and the negotiated final rental amount will be dependent upon a final appraisal which will be conducted within six months prior to the Lease execution. However, the substantive terms of the Lease are not expected to change.[166]

116. The Consumer Advocate contends that the draft Lease and Operating Agreement should be modified before it is finalized and executed; and further states that its "recommended modifications are discussed in the Kiewit Report (pages 27-29)."[167]

117. The commission declines to address these issues at this time. Until such time as a final Lease and Operating Agreement is presented for the commission's review and

[166]Application at 32.

[167]CA SOP at 33.

approval, any such review would be premature. Given the interdependence of the provisions, there is no point in reviewing the Lease and Operating Agreement until HECO and the Army have completed their negotiations.

118. Once the final Lease and Operating Agreement is filed in this docket, the Consumer Advocate shall have fifteen (15) days to file any comments it has (including those presented in its SOP here), and HECO shall have fifteen (15) days to respond to the Consumer Advocate's comments. The commission will thereafter issue an order addressing whether the Lease and Operating Agreement is reasonable and in the public interest.

V.

Orders

THE COMMISSION ORDERS:

1. The commission approves HECO's commitment of funds in excess of $2,500,000 in accordance with the provisions of Paragraph 2.3(g)(2) of General Order No. 7 ("G.O.7"), as revised in Decision and Order No. 21002 (issued on May 27, 2004 in Docket No. 03-0257), for the proposed Project.

2. The commission approves a cap of $167 million for the SGS Project costs, adjusted for the exchange rate as ordered in the following paragraph. HECO shall take all steps necessary

to lock in a Euro to dollar exchange rate that is the lowest rate possible.

3. The commission approves a cap on the amount of total costs that may be recovered through any cost recovery mechanism other than base rates at 90% of $167 million. The $167 million cap shall further be adjusted downward due to any reduction in the cost of the Wartsila contract due to a reduction in the foreign exchange rate. In addition, any requested cost recovery outside of base rates may only be made in accordance with Order No. 32735.

4. Within sixty (60) days of the date of this Order, HECO shall file a full explanation of how it plans to operate the SGS Project so as to maximize the economic benefits to ratepayers.

5. The commission approves HECO's request to construct the new 46 kV line above the surface of the ground.

6. HECO shall shift its current biofuel use at CIP CT-1 to the SGS Project. HECO shall take the necessary steps and file the necessary applications to shift its current biofuel use at CIP CT-1 to the SGS Project in order to minimize the impact on ratepayers of the cost of biofuel. Within thirty (30) days from the date of this Order, HECO shall file with the commission in this docket a detailed outline of the tasks necessary to accomplish this task which shall include, among other things, any permits and any outstanding orders of any agency, including the commission, which must be modified, and a timeline for addressing such

modifications. The Consumer Advocate will have fifteen (15) days to respond to this filing.

7. The commission denies HECO's request to capitalize the lease payments made prior to the in-service date of the SGS Project, as well as HECO's alternate requests to include a normalized level of such costs in a future rate case or to record such payments as a deferred expense to be included in the revenue requirements in HECO's next base rate proceeding. The commission concludes that these lease payments shall be expensed.

8. One of the following two options shall be included in the Lease and Operating Agreement or other appropriate document. First, in the event that Schofield Barracks installs on-site generation, purchases energy pursuant to a PPA, or takes other actions that would materially reduce the annual contribution of the Army to HECO's fixed costs, the minimum biofuel usage requirements would be reduced as well so that the annual biofuel cost premium is approximately equal to Schofield's annual contribution to HECO's fixed costs. Second, in the alternative, the Lease and Operating Agreement or other document could include a "sole supplier" provision whereby Schofield agrees to purchase 100% of its on-site electricity requirements from HECO for the term of the Lease and Operating Agreement.

9. HECO shall file the final Lease and Operating Agreement in this docket when fully executed. The Consumer Advocate shall have fifteen (15) days to file any comments it has with respect to the Lease and Operating Agreement, and HECO shall have fifteen (15) days to respond to the Consumer Advocate's comments.

DONE at Honolulu, Hawaii SEP 29 2015.

PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

By _____
Randall Y. Iwase, Chair

By _____
Michael E. Champley, Commissioner

By _____
Lorraine H. Akiba, Commissioner

APPROVED AS TO FORM:

_____
Melissa M. Mash
Commission Counsel

2014-0113.ljk

CERTIFICATE OF SERVICE

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

JEFFREY T. ONO
EXECUTIVE DIRECTOR
DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS
DIVISION OF CONSUMER ADVOCACY
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