BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Application of

HAWAII ELECTRIC LIGHT COMPANY, INC. DOCKET NO. 2017-0122

For Approval of a Power Purchase Agreement for Renewable Dispatchable Firm Energy and Capacity

HU HONUA BIOENERGY, LLC'S SUBMISSION OF INFORMATION REQUESTS TO HAWAII ELECTRIC LIGHT COMPANY, INC.

AND

CERTIFICATE OF SERVICE

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Attorneys for Hu Honua Bioenergy, LLC
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INSTRUCTIONS

1. Please identify the person responsible for preparing the response as well as the witness who will be supporting the response at any subsequent hearing.

2. These Information Requests require HELCO to produce documents and data within their possession, custody, or control. Possession, custody, or control includes constructive possession such that HELCO need not have actual physical possession. As long as HELCO has a superior right to compel the production from a third party (including an agency, authority, or representative), HELCO has possession, custody, or control of the requested documents and data.

3. HELCO is requested to produce the documents and data in the form specified in the specific request, where applicable. Where no form is specified, HELCO is requested to provide the data in either Microsoft Word format or in searchable Adobe PDF. For spreadsheets and other numerical data, Microsoft Excel should be used if possible. If HELCO is unable to provide the data in Microsoft Word or Adobe PDF or Microsoft Excel format, explain your reasons for failing to provide in any of the above-standard forms. Documents should be organized and labeled to correspond to these data requests.

4. If an Information Request specifically seeks an answer or an explanation in response, rather than the production of documents or data, an answer or an explanation is required. The production of documents or data alone is not sufficient.

5. If HELCO does not now have documents or data responsive to a particular Information Request, but later obtains possession, custody, or control of such documents or data, HELCO is required to furnish such documents and/or data immediately thereafter.

(00419051.)
6. If HELCO cannot respond to an Information Request completely, HELCO is to provide the answer to the extent possible, explain why HELCO cannot respond to the Information Request completely, and provide all information and knowledge in HELCO’s possession, custody, or control regarding the incomplete response.

7. To the extent HELCO claims that the requested information and/or documents and/or data are not discoverable, please provide a privilege log and a written description as to the basis of each objection or assertion of privilege.

8. Each of these Information Requests shall be considered to be continuing in nature and to require supplemental responses when new, different, or further information that is the subject of the Information Requests is obtained by HELCO. For each supplemental response, HELCO should specify the date upon which such new, different, or further information was obtained, as well as from whom and by whom such information was obtained.

9. If any document or data responsive to any Information Request is unavailable, HELCO is to identify the document or data, provide an explanation concerning why the document or data is unavailable, and state where the document or data can be obtained.

10. If any document or data responsive to any Information Request has been destroyed and thus is not available, HELCO is to state when and explain why such document or data was destroyed, identify the person(s) directing the destruction, and identify and produce all documents and data relevant to such destruction and explanation. If a claim is made that the destruction occurred pursuant to HELCO’s document destruction program, HELCO is to identify and produce a copy of the guidelines, policy, or company manual describing such document destruction program, and any documents, data, correspondence, or communications relating to the destruction of responsive data, documents, records, or other information.

11. Where the documents or data responsive to an Information Request were created in or exist in electronic form, the response should be provided in electronic, machine-readable form. For spreadsheets and other numerical data, Excel should be used if possible. If unable to provide in Excel format, explain why. If you are producing data using proprietary or non-standard software, please identify the software and explain why you cannot provide the data in Excel format.

12. For all electronic data provided in response to these Information Requests, provide all available documentation explaining the data sets, the data variables, and all relevant calculations.

13. For each document produced or identified in a response that is computer generated, HELCO is to state separately (a) what types of data, files, or tapes are included in the input and the source thereof; (b) the form of the data that
constitutes machine input (e.g., punch cards, tapes); (c) a description of the recordation system employed (including program descriptions, flow charts, etc.); (d) the identity of the person(s) in charge of the collection of input materials and the processing of input materials, (e) the data bases utilized, and (f) the programming to obtain the output.

14. If, in the course of responding to these Information Requests, HELCO determines that any instruction, definition, or Information Request is ambiguous, efforts should be made to contact counsel for Hu Honua Bioenergy, LLC at (808) 540-4500, wyamamoto@ychawaii.com or tmcnish@ychawaii.com, for any necessary clarification. In any such case, the response should set forth the language you feel is ambiguous and the interpretation you are using in responding to the Information Request.

15. Each document produced shall be an authentic original document or a true duplicate of an authentic original document.

16. Nothing in these Instructions should be construed to modify or diminish the requirements for discovery set forth in any Order issued in this proceeding.

DEFINITIONS

As used herein:

1. "Hawaii Electric Light Company" or "HELCO" refers to Hawaii Electric Light Company, Inc. together with its consultants, employees, agents, representatives, officers and directors, and any other person acting on its behalf, including any affiliate, division, department, predecessor, corporation, or partnership through which it now conducts or has conducted its business affairs.

2. "Commission" refers to the Public Utilities Commission of the State of Hawai‘i acting under the authority and powers codified in Chapter 269, Hawai‘i Revised Statutes, together with its consultants, employees, agents, representatives, contract personnel, officers and directors, and any other person acting on its behalf, including any affiliate, division, department, predecessor, corporation, or partnership through which it now conducts or has conducted its business affairs.

3. "Communication" shall include every means or manner of meeting, phone or voice call, conversation, letter, memorandum, document, or other form of communication, whether verbal or nonverbal.

4. "Document" or "data" is used in its broadest sense and shall mean and include all written, printed, typed, recorded, or graphic matter of every kind and description, and all attachments and appendices thereto, including, but not limited to all documents, data, testimony, exhibits, memoranda, correspondence, communications, forms, workpapers, information, reports (including drafts, preliminary, intermediate, and final reports), studies, surveys, analyses, tables, charts, summaries, graphs, tabulations, plans, books, publications, periodicals,
photographs, maps, pamphlets, bulletins, notes, letters, e-mails, text messages, blog posts, internal electronic instant messages, diaries, computer print-outs, computer data and files, CDs, DVDs, external or cloud-based hard drives or other external or cloud-based electronic storage devices, press releases, log sheets, ledgers, accounting statements, microfilms, microfiche, vouchers, diagrams, facsimiles, telegrams, telexes, messages, transcripts, accounting statements, or any other record, written, printed, typed, or recorded. “Document” or “data” includes every copy of a document which contains handwritten or other notations, or which otherwise does not duplicate the original or any other copy. “Document” or “data” includes copies of documents, where the originals are not in your possession, custody, or control. “Document” or “data” also includes any attachments or appendices to any document.


6. “Hawaiian Electric Company” or “HECO” refers to Hawaiian Electric Company, Inc. together with its consultants, employees, agents, representatives, officers and directors, and any other person acting on its behalf, including any affiliate, division, department, predecessor, corporation, or partnership through which it now conducts or has conducted its business affairs.

7. “Hawaiian Electric Industries” or “HEI” refers to Hawaiian Electric Industries, Inc. together with its consultants, employees, agents, representatives, officers and directors, and any other person acting on its behalf, including any affiliate, division, department, predecessor, corporation, or partnership through which it now conducts or has conducted its business affairs.

8. “Identification” and “identify” mean:

When used with respect to a document, stating the nature of the document (e.g., letter, memorandum, corporate minutes); the date, if any, appearing thereon; the date, if known, on which the document was prepared; the title of the document; the general subject matter of the document; the number of pages comprising the document; the identity of each person who signed or initialed the document; the identity of each person to whom the document was addressed; the identity of each person who received the document or reviewed it; the location of the document; and the identity of each person having possession, custody, or control of the document.

When used with respect to a person, stating his or her full name; his or her most recent known home address, e-mail address, and telephone number; his or her present title and position; and his or her present or prior connections with any participant or party to this proceeding. “Person” means, without limiting the generality of its meaning, every natural person, partnership, association (whether
formally organized or ad hoc), corporation, joint venture, or other legal business entity, as well as any governmental entity or agency.

9. "Subsidiary" means a business entity owned wholly or by a controlling interest, directly or indirectly.

10. "Affiliate" means a business entity owned in whole or in part, directly or indirectly.

11. "Reflects" or "related to" or "refers to" or "concerning" or "pertains to" means consists of, involves, reflects, relates to, refers to, concerns, pertains to, comprises, discusses, underlies, comments upon, forms the basis for, analyzes or mentions, or is in any way connected to, the subject of the data request.

12. "Studies," "analyses," or "report(s)" denotes any document, as defined above, which reflects or was utilized in the collection, evaluation, analysis, summarization, or characterization of data in connection with these requests.

13. The words "and" and "or" should be construed either conjunctively or disjunctively as necessary to include information within the scope of an Information Request, rather than to exclude information therefrom.

14. The singular form of a word shall be interpreted as plural and the plural form of a word shall be interpreted as singular whenever appropriate in order to bring within the scope of these Information Requests any information or documents which might otherwise be considered beyond their scope.

15. The capitalized and non-capitalized versions of a word or phrase defined herein shall have the same meaning.
I. FAILURE TO DISCLOSE MATERIAL INFO IN BILL IMPACT ANALYSIS

HHB-HELCO-IR-1 Ref: HELCO Letter re Bill Impact Analysis, filed May 24, 2017 ("May 24, 2017 HELCO Analysis")

The May 24, 2017 Analysis contained the following redactions hidden from Hu Honua:

- (Exhibit A, Attachment 6) "Avoided Fuel Consumption" table – all columns;
- (Exhibit A, Attachment 7) "Avoided Fuel Costs" table – all columns;
- (Exhibit A, Attachment 8) "Avoided Purchased Energy Expense" table – all columns;
- (Exhibit A, Attachment 11) "Total Contract Net Present Value and Benefit / Cost Ratio" table – three columns: "Total System Costs", "System Cost for Base Case Excl. HH Costs", "System Cost Benefit less Imp Debt"; and
- (Exhibit A, Attachment 13) "Customer Bill Impact" table – three columns: "Base", "Alternate", and "Change in Sys Costs w/ Imputed Debt".


On June 2, 2017, Hu Honua sent a letter to HELCO requesting an unredacted copy of the May 24, 2017 HELCO Analysis:

[Hu Honua has] only received a copy of the redacted public filing of the HELCO Analysis, which redacts all or portions of Attachments 6, 7, 8, 11, and 13 to Exhibit A. This places us in a difficult position, as we are unable to fully understand HELCO's evaluation of our own pricing and determine

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1 These Information Requests are timely submitted and filed pursuant to Order No. 34597, at 4, which establishes the rolling period (June 6 – 30, 2017) for Parties/Participants to issue Information Requests.
whether the HELCO Analysis fairly presents the A&R PPA's pricing to ratepayers. Accordingly, please provide us with a complete, unredacted copy of the HELCO Analysis so that we may be able to conduct a meaningful assessment.

**Ref:** HELCO Response Letter to Hu Honua June 2, 2017 Letter re Bill Impact Analysis Request for Clarification, filed June 20, 2017 ("June 20, 2017 HELCO Response to Hu Honua")

On June 20, 2017, HELCO responded to Hu Honua stating that given that Hu Honua filed Protective Agreements on June 2, 2017, it would provide an unredacted copy of the May 24, 2017 Analysis to Hu Honua:

Since Hu Honua Bioenergy, LLC ("Hu Honua") filed Protective Agreements on June 2, 2017, we will provide an unredacted copy of the HELCO Analysis that is provided to all parties in the docket. However, as to specific information, including avoided cost information, Hawaii Electric Light does not share with independent power producers ("IPPs") or any party, other than the Commission and Consumer Advocate. The reason is that the information is highly sensitive in nature and the release of it to IPPs could impact pricing and competition, which would jeopardize the interests of the customers.

On June 22, 2017, Hu Honua's counsel sent an email to HELCO's counsel requesting said "unredacted copy of the HELCO Analysis" to which HELCO's counsel responded that "the only redacted information in the filing was restricted confidential information" that Hu Honua was not entitled to see.

**QUESTIONS**

a. Please clarify what HELCO meant by "[s]ince Hu Honua Bioenergy, LLC ("Hu Honua") filed Protective Agreements on June 2, 2017, we will provide an unredacted copy of the HELCO Analysis that is provided to all parties in the docket." Did "all parties" mean the Consumer Advocate and Hu Honua, as opposed to "all participants"?

b. Please explain how the release to Hu Honua of information specific to Hu Honua's own project, such as the Total System Costs with Hu Honua included (Attachment 11 and 13) and Change in Sys Costs w/ Imputed Debt (Attachment 13), "could impact pricing and competition [of other IPPs], which would jeopardize the interests of the customers." If such Hu Honua-specific information does not affect other IPPs, would HELCO provide an unredacted copy of such information to Hu Honua?
Please explain how the release of estimates of the estimated total system cost of the "E3 Plan" is confidential and restricted, given that detailed information about such cost has already been released in HELCO’s December 2016 PSIPs and supporting spreadsheets and data files. If the E3 results used in HELCO’s analysis of Hu Honua’s bill impact differs from the results reported in the PSIP docket, please identify, explain, and justify each difference in the modeling assumptions and result.

II. IMPROPER CAPITAL LEASE ASSUMPTIONS

Ref: Amended & Restated PPA, executed May 9, 2017, which is Exhibit A to the HELCO Letter Request for Approval of in Docket No. 2012-0212 ("May 9, 2017 A&R PPA")

The May 9, 2017 A&R PPA, p. 58, Section 3.2, paragraph (M)(5) states:

(5) Consolidation and Capital Lease. Neither Company nor Seller want to be subject to consolidation and capital lease treatment as set forth in FASB ASC 810 and 840, respectively, as issued and amended from time to time by FASB. Company and Seller acknowledge that as of the Execution Date, this Agreement does not cause Seller to be consolidated into Company’s financial statements, nor does this Agreement constitute a capital lease.

Ref: May 24, 2017 HELCO Analysis

HELCO ultimately ran its bill impact analysis with the inclusion of a capital lease treatment, despite the above-referenced A&R PPA provision where HELCO acknowledged that the A&R PPA did not constitute a capital lease:

- (p. 2) For the subject Project, the analysis also factored into the customer bill impact the costs associated with imputed debt resulting from the Amended and Restated PPA being deemed a capital lease;
- (Exhibit A, p. 8) Benefits are also reduced by imputed debt;
- (Exhibit A, Attachment 11) "Imputed Debt Benefit Reduction" column; and
- (Exhibit A, Attachment 13) "Change in Sys Costs w/ Imputed Debt" column (redacted from Hu Honua).
Ref: June 20, 2017 HELCO Response to Hu Honua

It appears that at the time HELCO had filed its May 24, 2017 HELCO Analysis, and over the following weeks, HELCO was still in the process of doing its assessment of whether a capital lease treatment should be applied to the A&R PPA, as reflected in HELCO’s June 20, 2017 response to Hu Honua:

*Hawaii Electric Light is in the process of doing its assessment of the amended and restated power purchase agreement under ASC 842. However, because of the potential impact of imputed debt, e.g. the potential increase in cost of capital, we need to analyze the cost of rebalancing its debt to equity ratio taking into account the increased imputed debt.*

**QUESTIONS**

a. Section 3.2 (M)(5) of the A&R PPA states: “Neither Company nor Seller want to be subject to . . . capital lease treatment as set forth in FASB ASC 810 and 840, respectively, as issued and amended from time to time by FASB.” Speaking for HELCO, was the foregoing statement true when made as of the Execution Date? If “No,” please explain.

b. Section 3.2 (M)(5) of the A&R PPA states: “Company and Seller acknowledge this Agreement . . . [is not] a capital lease.” Speaking for HELCO, was the foregoing statement true when made as of the Execution Date?

c. Does HELCO contend that following the Execution Date, there have been one or more changed circumstances as specified in Section 3.2 (M)(5)(a) of the A&R PPA that result in the Agreement being considered a capital lease?

1. If “Yes,” please respond to the following:

   (a) Describe in detail each such change in circumstances after the Execution Date.

   (b) Describe what commercially reasonable steps Company has undertaken to eliminate the capital lease treatment, while preserving the economic “benefit of the bargain” to both Parties as provided in Section 3.2 (M)(5)(a).

d. Please explain why HELCO factored into May 24, 2017 HELCO Analysis the cost associated with imputed debt resulting from the A&R PPA being
deemed a capital lease when HELCO expressly agreed that as of May 9, 2017 the A&R PPA does not constitute a capital lease.

1. Did HELCO's analysis change between the date it signed the May 9, 2017 A&R PPA and the date it issued its May 25, 2017 HELCO Analysis? Please explain.

2. Did HELCO undertake a capital lease analysis of the Hu Honua project before signing the A&R PPA? If so, what were the results of such analysis?

e. On June 20, 2017, HELCO admitted that it "is [still] in the process of doing its assessment of the amended and restated power purchase agreement under ASC 842 [accounting guidance related to whether a contract contains a capital lease]." Please explain why HELCO forced into its May 24, 2017 bill impact analysis the costs associated with imputed debt resulting from the A&R PPA being deemed a capital lease when HELCO was still in the process of doing its assessment of whether a capital lease applies to the A&R PPA?

f. Did HELCO also run its bill impact analysis without the capital lease assumption?

1. If not, please explain why HELCO did not run its bill impact analysis without the capital lease assumption since HELCO agreed that the A&R PPA does not constitute a capital lease and was still doing its assessment of whether a capital lease applied as of the time it issued the May 24, 2017 HELCO Analysis.

2. Since HELCO's assessment of whether a capital lease applies to the A&R PPA is still ongoing, wouldn't it be more appropriate for HELCO to run its bill impact analysis without a capital lease assumption as the default scenario and then run its bill impact analysis with a capital lease assumption as a sensitivity?

3. Will HELCO agree to run its bill impact analysis without the capital lease treatment?

**HHB-HELCO-IR-3** **Ref: May 9, 2017 A&R PPA**

The May 9, 2017 A&R PPA, p. 58, Section 3.2, paragraph (M)(5)(a) states:

Consolidation and Capital Lease. In the event that, following the Execution Date, any changed circumstances, including, but not limited to, revised accounting rules and interpretations thereof, result in (i) this Agreement causing Seller to be consolidated into Company's financial

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statements, or (ii) this Agreement being considered a capital lease, then the Parties will take all commercially reasonable steps, including modification of this Agreement, to eliminate the consolidation treatment or the capital lease treatment, while preserving the economic "benefit of the bargain" to both Parties. In the event the consolidation treatment or the capital lease treatment cannot be eliminated and the economic "benefit of the bargain" to both Parties cannot be maintained on a mutually acceptable basis, then Seller shall, within 90 days, reduce its Gearing Ratio as of the date of the determination of either consolidation as set forth in (i) above or capital lease treatment as set for in (ii) above, to 90% of Company’s Gearing Ratio as of the determination date. If Seller fails to reduce its Gearing Ratio in accordance with the preceding sentence, then Company may terminate this Agreement.

QUESTIONS

a. Section 3.2 (M)(5)(a) provides that in the event the capital lease treatment cannot be eliminated and the economic “benefit of the bargain” to both Parties cannot be maintained on a mutually acceptable basis, as provided in Section 3.2 (M)(5)(a), Seller shall within 90 days reduce its Gearing Ratio to 90% of Company’s Gearing Ratio. Has HELCO requested that Hu Honua reduce its Gearing Ratio to 90% of Company’s Gearing Ratio, or taken any other steps to discuss compliance with Section 3.2(M)(5)(a) of the PPA? If “Yes,” please describe.

b. Does HELCO contend that the PPA would impose imputed debt costs on HELCO despite Hu Honua’s reduction of its Gearing Ratio to 90% of Company’s Gearing Ratio in compliance with Section 3.2(M)(5)(a) of the PPA? If “Yes,” please explain in detail.

c. In the event the Agreement constitutes a capital lease, does HELCO agree that there should be no cost or other economic impact or effect on the rates charged by HELCO to its customers for power generated by the Honua? If “No,” please explain.

d. After execution of the A&R PPA and prior to factoring into the May 24, 2017 HELCO’s Analysis the costs associated with imputed debt resulting from the A&R PPA being deemed a capital lease, did HELCO “take all commercially reasonable steps,” including proposing a modification of the A&R PPA, “to eliminate the ... capital lease treatment, while preserving the economic ‘benefit of the bargain’ to both Parties?” Please explain.

e. If HELCO did not “take all commercially reasonable steps ... to eliminate the capital lease treatment” because HELCO ultimately concluded that the
capital lease treatment could not be eliminated, then did HELCO notify Hu Honua of such conclusion to enable Hu Honua to reduce its Gearing Ratio in order to address any capital lease treatment? Please explain.

f. Section 3.2 (M)(a) of the PPA states: “In the event that ... this Agreement [is] considered a capital lease, then the Parties will take all commercially reasonable steps, including modification of this Agreement, to eliminate the consolidation treatment or the capital lease treatment, while preserving the economic ‘benefit of the bargain’ to both Parties.”

1. What modifications to the agreement does HELCO believe are necessary to eliminate the capital lease treatment?

2. Is HELCO planning to propose those modifications to HHB?

g. Does HELCO contend that its imposition of an imputed cost on its rates charged for power generated and sold by Hu Honua protects Seller’s “benefit of the bargain” as required by Section 3.2 (M)(5)? If “Yes,” please explain in detail.

III. THEORETICAL VS REAL BILL IMPACT

HHB-HELCO-IR-4 Ref: May 24, 2017 HELCO Analysis

QUESTIONS

a. What is the amount of imputed debt that HELCO attributed to the HHB project?

b. Please provide the formula and describe the methodologies, techniques, and assumptions used by HELCO to calculate the annual cost of the imputed debt attributed to the HHB project?

1. Was the computation based on capacity, O&M, and/or energy charges?

2. Was the computation on the total of capacity, O&M, and/or energy charges, or a fraction of the total?

3. What interest rate was used?

c. For each of the following questions regarding the columns in Attachment 11 to HELCO’s Bill Impact and Pricing Analysis, please answer “yes” or “no.” If the answer is “no,” please describe what the referenced figures represent and how they were calculated, providing the formula by which they were calculated.
1. Do the figures in the “Base” column represent HELCO's revenue requirement in the “Base” (“Hu Honua out”) scenario?

2. Do the figures in the “Alternate” column represent HELCO’s revenue requirement in the “Alternate” (“Hu Honua in”) scenario?

3. Do the figures the “Sys Cost for Base Case Exc. HH Cost” represent the difference between the figures in the “Base” and “Alternate” columns? Please also confirm that the title of this column is the title that HELCO intended.

4. Do the figures in the “Sys Cost Benefit less Imp Debt” column represent the difference between the “Sys Cost for Base Case Excl. HH Costs” column and the “Imputed Debt Benefit Reduction” column?

5. Do the figures in the “B/C Ratio” column represent the figures in the “Sys Cost Benefit less Imp Debt” column divided by the figures in the “HH Total Contract Cost” column?

d. Does the “Imputed Debt Benefit Reduction” column in Attachment 11 of the May 24, 2017 HELCO Analysis include anything other than imputed debt? For example, does it include revenue tax, any administrative overhead, or any other costs?

e. Please provide the differential between HELCO's estimated revenue requirements in the Base Case and its estimated revenue requirements in the Alternate Case for each year referenced in the May 24, 2017 Analysis.

f. For each of the following questions regarding the columns in Attachment 13 to the May 24, Analysis, please answer “yes” or “no.” If the answer is “no,” please describe what the referenced figures represent and how they were calculated, providing the formula by which they were calculated.

1. Do the figures in the “Base” column represent HELCO's revenue requirement in the “Base” (“Hu Honua out”) scenario?

2. Do the figures in the “Alternate” column represent HELCO's revenue requirement in the “Alternate” (“Hu Honua in”) scenario?

3. Do the figures in the Change in Sys Costs w/ Imputed Debt column equal the “System Cost Benefit” less Imp Debt” column of Attachment 11?
4. Do the figures in the “Change in Sys Cost per 500 kWh Bill Impact” represent the difference in revenue requirement between the Base Case and Alternate Case divided by HELCO’s projected electricity sales (in kWh), and then multiplied by 500? In other words, does HELCO assume the entire cost difference between the Base Case and Alternate Case (including the imputed debt) is applied uniformly to energy sales? If not, how is the cost difference allocated to energy sales?

g. When HELCO calculated “Total System Costs” in Attachments 11 and 13, did HELCO take costs directly from the simulation model referenced in the May 24, 2017 HELCO Analysis, or apply adjusted target heat rate (from ECAC) to generation from various sources and multiply by forecasted fuel prices to obtain the rate contribution of each source?

According to Attachment 13, HECO’s projected Bill Impact begins at +$5.31 and steadily decreases to $0.47 in 2037, and begins to show savings of ($0.02) in 2039, which savings increase to ($5.76) to 2048.

**QUESTIONS**

a. Please explain how the Bill Impact Column was determined or calculated using the figures in each of the other columns in Attachment 13: (1) Total Systems Costs – Base, (2) Total System Costs - Alternate, and (3) Change in Sys Costs w/Imputed Debt.

b. Of the variables used in Attachment 13, what changed from 2019 through 2048 that caused the projected Bill Impact to change from +$5.31 to ($5.76)?

c. How would the projections for “Bill Impact” (last column on the right) have changed if Imputed Debt was not included in the figures under the “Changes in Sys Costs w/Imputed Debt” column? If Imputed Debt was not included in the figures under the “Changes in Sys Costs w/Imputed Debt” column, what would the resulting figures be in the Bill Impact column?

In the May 24, 2017 Analysis, HELCO does not consider that Hu Honua will displace any existing or planned firm capacity, which results in artificially low dispatch numbers for Hu Honua.
QUESTIONS

a. Please provide a table that shows the projected dispatch during each hour of the 2019-2048 analytical period for the “Hu Honua in” or “Alternate” scenario.

b. Please provide a table that shows the projected dispatch during each hour of the 2019-2048 analytical period for the “Hu Honua out” or “Base” scenario.

c. Please explain under what circumstances Keahole or HEP would be dispatched instead of fully dispatching Hu Honua, including any system security constraints or other operational protocols that might give such units dispatch preference over Hu Honua even when the dispatch of such units would be less economic than increasing the dispatch of Hu Honua.

d. Please provide the actual 2016 generation from each plant owned or contracted by HELCO?

e. Has the total actual 2016 generation data been used to validate the models used in the PSIP and bill impact analysis?

f. What operational requirements placed on the fossil plants interconnected with HELCO’s system are represented in the models used to conduct the bill impact analysis? For example, for each plant, please describe whether there is a constraint in the model requiring it to run at a certain level overnight or at certain other time periods, and if so, what the basis for the requirement is. Also please describe whether HELCO accounted for or evaluated Hu Honua’s ability to meet the same operational requirements that justify HELCO running its fossil fuel plants, and thus replace those facilities’ minimum production?

g. In the “HELCO Financial Forecast Corporate Planning December 2016 E3 Plan Final” spreadsheet file provide via the FTP site in the PSIP docket, the Total Annual Net Sales figures are significantly less than in HELCO’s May 24 filing. Please explain the difference, and identify all changes in assumptions that led to the differences.

h. In Exhibit A, p. 7, Section E., the HELCO Analysis states: “The addition of the Project is anticipated to increase the amount of variable renewable energy that is curtailed.” Please in detail the factors that result in HELCO’s prediction that it would need to curtail as-available renewable units, rather than reducing the dispatch of HELCO-owned units.

i. Has HELCO confirmed that it can realistically implement all aspects (including timing) of the E3 Plan?
HELCO states on p. 2 of its June 20, 2017 letter:

Hawaii Electric Light affirms that the near-term resource plan shown in Table 6-5, on page 6-20, of the Hawaiian Electric Companies' December 2016 PSIP reflects the strategy it plans to pursue over the next five years. Table 6-5 is taken from the first five years of the E3 Plan shown in Table 4-7, on page 4-25.

However, in its December 2016 PSIP, HELCO notes several potential problems with the E3 Plan, including the following:

On Page 4-24, HELCO states that "The E3 plans economically relied heavily on battery storage for firm capacity needs. The E3 model did not take into account the uncertainty in weather and associated reliability risk of not being able to serve load if there isn't enough renewable energy to charge the batteries and there is no thermal generation as backup. This situation could occur when there are long periods of rainy days and low solar production. The seasonality of available variable renewable resources is illustrated in Appendix K for select years. Despite high amounts of grid-scale wind included in the E3 Plans, there are still periods where the load exceeds the available resources in 2045. Seasonal load-shifting storage or firm renewable generation would be necessary to bridge this gap."

On Page 4-26, apparently as an explanation of why the Post-April PSIP Plan contains only 30 MW of new wind (compared to 50 MW in the E3 Plan), HELCO states: "However, due to transmission restraints between the areas in which there are grid-scale wind resources available and the location of the load centers, the amount of grid-scale wind included in the [Post-April PSIP Plan] was limited to 20 MW. Additional expansion of wind may be feasible if procured near certain transmission system locations that can accommodate higher levels; potentially as high as 70 MW."

On Page 4-28, HELCO states that "For Hawai'i island, the analysis focused on the E3 Plan. The short circuit screening identified more synchronous condensers were required to meet the minimum fault current requirement in 2022. The loss of generation screening found degraded system performance starting in 2020 and more hours where additional frequency response resources are required. Most of these differences are attributed to the unit commitment and dispatch schedules which were different from the Post-April PLEXOS production simulation so further review of the dispatch models are required.

On page 3-19, HELCO states that "Conventional Thermal generation resources will still be required to meet the load during seasonal low renewable energy
production or unpredicted weather-related events (such as the six weeks of consecutive rainy days in 2006)."

**QUESTIONS**

a. Has HELCO confirmed that it can implement the E3 plan without endangering system security? Please describe and provide a copy of any analysis conducted regarding this issue subsequent to filing of the December 2016 PSIP.

b. Has HELCO estimated the cost of resolving the referenced “transmission restraints” that constrain the implementation of new wind projects? If the answer is “yes” please identify the costs, and describe whether they incorporated into the bill impact and pricing analysis, and if so, how?

c. Has HELCO estimated the cost of additional investments that would be needed to implement the E3 plan without endangering system security? If the answer is “yes” please identify the costs, and describe whether they incorporated into the bill impact and pricing analysis, and if so, how?

d. If the 50 MW of new wind proposed by the E3 plan turns out to be uneconomical, and/or if the forecasted levels of DG-PV assumed in such plan are not completed, what firm capacity renewable generation will make up the difference?

e. If weather causes system security concerns of the type described by HELCO, which firm capacity renewable generation will make up the difference?

f. Are transmission and system upgrades included in HELCO’s bill impact analysis? If not, what is the cost of such upgrades for each year?

g. What transmission penalty is applied to each plant owned or contracted by HELCO? How were the transmission penalties determined?

h. What is HELCO’s plan to add firm capacity to support Wind and other variable generation? Is HELCO’s plan to continue to run existing fossil fuel plants, including Keahole, until 2045 or until such time when such plants can be converted to biofuels?

i. Have you represented all the operational requirements that Wind will put upon HELCO’s system, in particular, the need to address energy variability on a day to day basis, not just hour to hour in a typical day.
HBB-HELCO-IR-8  
Ref: May 24, 2017 HELCO Analysis

HELCO states on p. 2 of the May 24, 2017 Analysis that “[t]he analysis sets as a baseline the Companies’ resource plan developed for Hawaii Island in their PSIP Update Report: December 2016.” However, HELCO’s December 2016 PSIP Plan only proposes near-term action plans for the next five years.\(^2\) HELCO’s December 2016 PSIP and declines to commit to a single plan for longer term actions,\(^3\) leaving it uncertain whether, over the term of the A&R PPA, HELCO will implement the E3 Plan, Post-April PSIP Plan, some combination of the two plans, or an entirely different plan.

a. Subsequent to the December 2016 PSIP filing, has HELCO committed to implementing the E3 Plan, rather than the Post-April PSIP Plan or another plan? Please explain

b. If HELCO has not committed to implementing the E3 Plan, please explain why Hu Honua’s benefits were measured against the E3 Plan, rather than against the Post April PSIP Plan or several alternative possible plans.

c. Please confirm that if HELCO does not implement all of the elements of the E3 plan, its bill impact and pricing analysis will no longer be an accurate estimate of Hu Honua’s true bill impact.

d. Given that the Post-April PSIP Plan calls for the construction of a 20 MW biomass facility in 2027, did HELCO consider using the Post-April PSIP Plan as the basis for the “Hu Honua in” scenario? If the answer is “yes”, please describe any such consideration conducted. If the answer is “no,” please explain why not.

HBB-HELCO-IR-9  
Ref: June 20, 2017 HELCO Response to Hu Honua

In its June 2, 2017 letter, Hu Honua asked why HELCO elected to create a “Hu Honua in” scenario by simply adding Hu Honua into the “Hu Honua out” scenario instead of optimizing the “Hu Honua in” scenario, despite the fact that HELCO stated on page 4 of its bill impact analysis that such optimization is “typical” for similar “resource-out/resource-in” analyses. In HELCO’s June 20, 2017 response, it stated on p. 3:

There are no future conventional firm capacity units, such as biomass or geothermal units, that the Hu Honua facility can defer. In addition, as explained in the previous section above, there were no existing steam units that could be displaced since it was already assumed that the existing steam units would be removed from service before Hu Honua entered the picture with negotiations in April 2016.

Hence, the only resources the Hu Honua facility could displace or defer were grid-scale wind or PV and loadshifting batteries. However, as explained in the excerpted paragraphs above, preliminary analyses indicated that removing wind and batteries from the resource plan simply increased plan costs because these were economical resources to have in the plan. Thus, in the alternate case, it was most cost-effective to simply add Hu Honua into the plan without removing any resources from the plan.

QUESTIONS

a. Did HELCO consider the possibility that Hu Honua could defer capital expenditures on existing steam units? If the answer is “yes,” please describe such consideration. If the answer is “no,” please describe why this possibility was not considered.

b. Did HELCO consider accelerating the retirement of or avoiding additional capital investment on any other fossil fueled units that do not qualify as “steam units”? If the answer is “yes,” please describe such consideration. If the answer is “no,” please describe why this possibility was not considered.

c. Did HELCO consider the possibility that Hu Honua could defer or displace the need for the 25 MVA synchronous condenser proposed for 2020? If the answer is “yes,” please describe such consideration. If the answer is “no,” please describe why this possibility was not considered.

d. When HELCO conducted “preliminary analyses” of removing wind and batteries from the resource plan, what assumptions were used? Did HELCO analyze the removal of all the wind and batteries, or only selected wind and battery investments? Did HELCO analyze the “removal” of these resources only, or did it analyze their deferment? Please describe each alternative scenario analyzed.

e. Are there any other steam units interconnected with the HELCO aside from Hill 5, Hill 6, and Puna? If so, please list each such unit, and describe why HELCO assumed that its retirement could not be accelerated by Hu Honua.

f. Page 2 of the HELCO response letter states that “While Table 6-5 does not show the removal from service of the Puna steam unit and Hill Units 5 and 6, the removal from service of these units is indeed a part of the near-term resource plan as evidenced by the addition of the 9 MW FFRI resource and the 25 M VA synchronous condenser, neither of which would be needed if the three steam units remain in operation.” Please reconcile this statement with HELCO’s Post-April PSIP Plan, which proposes the
same early addition of the FFRI and synchronous condenser, even though the three oil units are still in operation for many more years (see page 4-27 of the December PSIP).
BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of the Application of

HAWAII ELECTRIC LIGHT COMPANY, INC. DOCKET NO. 2017-0122

For Approval of a Power Purchase Agreement for Renewable Dispatchable Firm Energy and Capacity

CERTIFICATE OF SERVICE

I hereby certify that on this date copies of the foregoing document, together with this Certificate of Service were duly served on the following parties, by U.S. Mail, postage prepaid and addressed as follow:

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