

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII

In the Matter of)
)
PUBLIC UTILITIES COMMISSION)
)
Instituting a Proceeding to)
Investigate Distributed)
Generation in Hawaii.)
_____)

DOCKET NO. 03-0371

COUNTY OF MAUI'S RESPONSES TO REBUTTAL INFORMATION
REQUESTS FROM THE CONSUMER ADVOCATE

CERTIFICATE OF SERVICE

PUBLIC UTILITIES
COMMISSION

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COUNTY OF MAUI'S RESPONSES
TO REBUTTAL INFORMATION REQUESTS
FROM THE CONSUMER ADVOCATE

CA-RIR-1 Ref: COM RT-1, Page 1--Whether HECO should own customer-sited DG systems and primarily sell DG produced electricity to the customer hosting the DG installation.

The following questions relate to situations where HECO would own customer-sited DG systems and use the DG-produced electricity together with its other resources to serve the needs of all customers.

- a. Please state **all** reasons why HECO should not be allowed to own customer-sited generation facilities that are used to serve the needs of its customers and provide authoritative citations supporting the reasons cited.

RESPONSE:

We do not agree with the implication in the above instruction and in the above question which suggests that utility-owned DG systems providing electricity to the host customer is serving the needs of "all" customers. See our responses relative to what constitutes a public use at PUC-IR-1.

All reasons why we believe that HECO should not be allowed to provide DG services for private use have been identified in our direct and rebuttal testimonies. The reasons include concerns over discriminating monopolies, regulatory authority, and market power.

- b. Should HECO be allowed to install generating facilities on land that it does not own? Explain.

RESPONSE:

Yes, for generating facilities providing public services, such as Portland General Electric Company's Dispatchable Standby Generation program, see PUC-IR-14.

- c. Should HECO be allowed to install generating facilities on land that it leases from owners that also receive electric service from HECO?

RESPONSE:

Yes, see answer to item b above.

- d. If HECO installs generating facilities, why should HECO not be allowed to find means to improve or increase the overall efficiency of such generating resources?

RESPONSE:

HECO should improve and increase the efficiency of DG facilities that provide public services, such as DG units for emergency generation purposes. Referring to standby generators in a virtual power plant configuration, we state at COM-T-1, page 17, lines 6-7, "MECO would oversee the maintenance of the units and upgrade or replace the units if needed."

HECO should also improve and increase the efficiency of their central generation resources in order to compete against competitive services. This approach is preferable to providing discriminating monopoly services, per Mr. Lazar's direct testimony on this matter. See COM-T-2, starting at page 19.

CA-RIR-2 Ref: COM RT-1, Page 1.

Regarding the statement "disallowing investor-owned utilities from owning privately used systems," please respond to the following.

- a. Please define "privately-used" generating facilities and give specific examples of such facilities. If possible, examples using actual installations in Hawaii would be preferred.

RESPONSE:

For the definition, see our response to HECO/Maui-DT-IR-37 and HECO/Maui-DT-IR-41, item c.

For a Hawaii example, see the Hawaii Supreme Court decision included in our response to HECO/Maui-DT-IR-41, pages 53-55.

- b. Please give examples of generating facilities that would not be considered "privately-used" systems. Again, if possible, examples using actual installations in Hawaii would be preferred.

RESPONSE:

HECO's CHP program and tariff request is a good example.

- c. Please define the differences between generating facilities that are considered "privately-used" and those that are not to be considered "privately-used."

RESPONSE:

See the above cited Hawaii Supreme Court decision for the distinction between public and private uses.

- d. What is the significance of a "privately-used" system as opposed to facilities that are not "privately-used?"

RESPONSE:

The significance is that the Commission does not regulate privately-used facilities, per the above-cited Hawaii Supreme Court decision.

- e. State the specific factors that come to bear for the witness in reaching different conclusions and recommendations in this

proceeding regarding private use facilities versus those that are not "privately-used".

RESPONSE:

The witness' conclusions and recommendations have been consistent with the above-cited Hawaii Supreme Court decision.

- f. If HECO's generating facilities are not considered "privately used," would the witnesses' conclusions and recommendations be different?
1. If so, please state how and why.
 2. If not, please state why.

RESPONSE:

It would depend upon the specific reasons for such a finding.

CA-RIR-3 Ref: COM RT-1, Page 7.

Witness indicates that market power issues could arise if a regulated electric utility were allowed to compete against unregulated companies.

- a. In other parts of the country, are regulated electric utilities allowed to compete for any services that are provided by unregulated companies?

RESPONSE:

No, for privately used or non-utility services. See discussion starting at COM-RT-1, page 8, line 5.

- b. If the answer to part a. is affirmative, please provide the witness' understanding of:
1. the services that are provided by regulated electric utilities in other parts of the country in competition with unregulated companies;
 2. the market power issues in each such situation; and
 3. the manner that the market power issues were dealt with or resolved.

RESPONSE:

Not applicable.

- c. In other parts of the country, are regulated electric utilities required to cease offering those services that could be offered by unregulated companies? If so, please identify the applicable companies and the appropriate authoritative reference.

RESPONSE:

We have no information relating to this matter.

CA-RIR-4 Ref: COM RT-1, Page 8.

Regarding the witness' referral to a Louisiana Public Service Commission Order, please respond to the following.

- a. In what ways is the referenced order similar to HECO's proposed CHP program?

RESPONSE:

See the response to HECO/Maui-RT-RIR-15.

- b. Does the witness believe that the Louisiana Public Service Commission Order would be similar to HECO's proposed CHP program if the electricity produced from the CHP system were used to supply, together with HECO's other resources, all of HECO's customers? Please explain your answer.

RESPONSE:

The witness does not understand how any Louisiana Public Service Commission Order could be similar to any HECO program proposal.

- c. If HECO leased a generating site from a land owner that also used electricity to serve the facilities built on that site, would the referenced Louisiana Public Service Commission Order be applicable? Explain your response.

RESPONSE:

It would still be applicable because the scenario has no bearing on what constitutes a public use of the DG facility.

- d. To what extent are the witness' responses to parts "a" through "c" of this information request dependent on the generating facility being utilized to provide the other non-electric services referenced in the witness' testimony?

RESPONSE:

The witness did not reference other non-electric services in his testimony.

- e. How would the answers to parts a through c of this information request change if the utility were providing only electricity producing services and not any of the other services referenced in the witness' testimony?

RESPONSE:

The witness does not understand what other services are being referred to, however, the scenarios mentioned appear to have no bearing on what constitutes a public use of the DG facility.

- f. In what manner are the circumstances for the Louisiana Order not similar to HECO's proposed CHP program? Explain.

RESPONSE:

With regard to the precedent of what constitutes a public use, there are no dissimilarities.

CA-RIR-5 Ref: COM RT-1, Page 9.

The following requests pertain to witness' reference to a request by PNMES.

- a. In what ways is the referenced New Mexico Public Utility Commission Order similar to HECO's proposed CHP program? Explain.

RESPONSE:

The referenced New Mexico PUC Order, as affirmed by the New Mexico Supreme Court, determined that non-utility services should not be provided on a tariff basis. See COM-RT-1, page 11, lines 11-24. The Hawaii Commission's decision, as affirmed by the Hawaii Supreme Court, determined that privately used DG services are non-utility services that are exempt from tariff regulation. See COM-RT-1, page 5, lines 11-16.

- b. Does the witness contend that the New Mexico Public Utility Commission Order would be similar to HECO's proposed CHP program if the electricity produced from the CHP system were used to supply, together with HECO's other resources, all of HECO's customers? Please explain your answer.

RESPONSE:

The witness does not understand how any New Mexico Public Utility Commission Order could be similar to any HECO program proposal. Besides, the New Mexico case did not involve DG or Combined Heat and Power.

- c. If HECO leased a generating site from a land owner that also used electricity to serve the facilities built on that site, would the referenced New Mexico Public Utility Commission Order be applicable? Explain.

RESPONSE:

It would still be applicable because the scenario has no bearing on what constitutes a non-utility service.

- d. To what extent are the witness' responses to parts a through c of this information request dependent on the generating facility being utilized to provide the other non-electric services referenced in the witness' testimony?

RESPONSE:

The New Mexico case did not involve DG or CHP.

- e. How would the answers to parts a through c of this information request change if the utility were providing only electricity producing services and not any of the other services referenced in the witness' testimony?

RESPONSE:

No, the scenario mentioned also appears to be a non-utility service.

- f. In what manner are the circumstances for the New Mexico Order not similar to HECO's proposed CHP program? Explain.

RESPONSE:

With regard to the precedent of what constitutes a non-utility service, there are no dissimilarities.

CA-RIR-6 Ref: COM RT-1, Pages 10 through 11.

The following information requests pertain to the witness' references to HECO's capabilities of owning, operating and maintaining DG systems.

- a. Please describe the witness' understanding of HECO's capabilities to own, operate and maintain DG systems and state the basis for such understanding.

RESPONSE:

The witness understands that HECO's capabilities are limited and the basis for this understanding comes from the witness' interactions with HECO over the past 16 years as the COM Energy Coordinator.

- b. Please state all facts to support the conclusion that "HECO has not demonstrated competencies beyond their core capabilities, relative to the failures of HECO's affiliate companies, Hawaii Renewable Energy Systems, HEI Power Corp., and Pro Vision Technologies."

RESPONSE:

The witness understands that Hawaii Renewable Energy Systems and HEI Power Corp. are no longer in business due to financial losses. The local news regularly reported the significant losses by HEI Power Corp. and the witness may have archived news articles of HERS problems with their wind energy development. The witness understands that ProVition Technologies has been sold. The COM does not have information on the terms of that sale and would appreciate receiving any information the CA has on this matter.

1. In evaluating the core competencies of HECO as it relates to the examples provided, please discuss the COM's understanding of whether these affiliated companies were operated as a regulated endeavor or using other resources. Please cite or provide supporting documentation as appropriate.

RESPONSE:

The COM has not conducted an assessment of the HECO's former affiliates' regulatory structure.

2. In evaluating the core competencies of HECO as it relates to the examples provided, please discuss the COM's understanding of the overall nature of the markets entered and whether other participants thrived where HECO's affiliated companies failed. Please cite or provide supporting documentation as appropriate.

RESPONSE:

The witness understands that business are competing in all markets of the former HECO affiliates and as in all market sectors, some businesses are more successful than others.

- c. Please describe how HECO should demonstrate the competencies that are, in the witness' opinion, necessary to operate and maintain DG facilities.

RESPONSE:

The witness recommends that competencies be developed by establishing a virtual power plant for reserve and emergency power purposes.

- d. What specific information did the witness rely on to formulate his understanding as to how HECO should operate and maintain DG systems?

RESPONSE:

The witness relied upon several factors, including information from energy companies and information from a former DG plant manager on Maui with a private virtual power plant system (see <http://www.encorp.com/content.asp?cmsID=74>). The witness had several discussions with that plant manager before the plant manager became employed by MECO. Both the witness and the MECO employee felt that the COM's virtual power plant proposal was viable. Unfortunately, that MECO employee recently quit and moved out of state. However, MECO has employed said former plant manager's successor and the witness feels that MECO is still in a good position to implement a virtual power plant system.

- f. Please describe all factors that need to be recognized or present to determine whether an entity, such as HECO, is providing the DG services in an "incompetent or inefficient manner." For each factor or criterion that is identified,

please provide a discussion and citation to any relevant authoritative reference that supports the reasonableness of that criterion.

RESPONSE:

For publicly used DG services, such as the COM's proposed virtual power plant services, existing regulatory mechanisms may be adequate in assessing the competency and efficiency of program services. This matter should be evaluated as the program develops.

For privately used DG services, the marketplace will judge the competency and efficiency of DG companies.

CA-RIR-7 Ref: COM RT-1, Pages 12 through 14.

Please explain the witness' understanding of the specific items mentioned (e.g., lightning arrestor, 2000 AMPs breaker, reverse power relay, \$1,200/kW-year standby charge, cogeneration publication by a utility, tariff reduction of 11.77% for cogeneration customers) to Hawaii's utilities. Please provide specific examples of each of these items quoted in the testimony to identical situations offered by each of Hawaii's electric utilities.

RESPONSE:

The witness understands that the authors verified the aforementioned items with HECO before publishing the case study. Regarding the technical items, see Attachment 1. This attachment is the letter from HECO requesting the aforementioned technical requirements. This letter was provided to the study authors for verification.

Regarding the cogeneration publication, refer to HECO's Powerlines newsletter, dated Summer 1999. A copy will be made available upon request.

Regarding the standby charge proposal and the customer retention tariff requests, the COM would appreciate receiving any information the CA has on file.

CA-RIR-8 Ref: COM RT-1, Page 14.

The following requests pertain to the witness' statement that the withdrawal of Johnson Controls one week before responses by HECO to their information requests were due raised more questions about market power than has been answered.

- a. What are the questions regarding market power that the witness believes have been raised as a result of Johnson Controls' withdrawal?

RESPONSE:

The questions pertain to the questions contained in the information requests by Johnson Controls to HECO.

- b. What is the significance of the timing reference in the witness' testimony to the claim that more market power issues were raised than answered?

RESPONSE:

The witness found it odd that Johnson Controls went through so much effort to get their questions allowed into the instant proceeding, only to withdraw before those questions were answered. A significant and contentious portion of the parties' first informal meeting related to how the questions in Johnson Controls' complaint letter to the Commission (dated July 1, 2003) would be allowed into the instant proceeding.

CA-RIR-9 Ref: COM RT-1, Page 15.

Regarding the statement that there is an indication of ratepayer funded employees being used by the utility to compete against private energy companies, please respond to the following.

- a. Please clarify and explain whether the above referenced statement is directed solely to utility-owned customer-sited DG used to serve specific customers and is not in reference to utility generation used to serve all of the utility's customers.

RESPONSE:

Yes, this is not in reference to utility generation for public use.

- b. Please provide the basis for the conclusion that the electric utility's in Hawaii are currently using "ratepayer-funded employees" to "compete against private energy companies" as noted in the statement that "[t]his situation is beginning to manifest itself over competition for DG business with the COM."

RESPONSE:

The basis for this conclusion is that MECO representatives have met with and continue to meet with the COM for the provision of DG services.

- c. If the utility does not install generation to serve specific customers, does the witness believe that private companies in essence compete against the utility's avoidable tariff rates? Explain your response.

RESPONSE:

Yes, and that is the reason why it is important to send the proper market price signals to consumers and why it is important to prevent discriminating monopoly practices.

CA-RIR-10 Ref: COM RT-1, Page 17.

Regarding the discussion that the competitive marketplace could optimize the timing and size of customer DG and CHP systems, please respond to the following information requests.

- a. Please provide the witness' understanding of the competitive marketplace on the Mainland and differentiate that market to the market in Hawaii. State all factors considered to differentiate the two markets.

RESPONSE:

Regarding DG markets, there are not much significant differences. There are DG markets comparable in scale to the Oahu market, the Maui/Big Island/Kauai markets, and the Molokai/Lanai markets. There are some differences in terms of the available fuels and renewable energy resources, the need for waste heat, and in utility retail prices. However, none of the differences appear to significantly impede Hawaii's market for DG.

- b. Please indicate whether the witness believes that the competitive marketplace has optimized the timing and size of generating systems, and types of generating systems, on the Mainland. State all facts and resources relied upon to reach the conclusion presented in the response to this information request.

RESPONSE:

Yes, perhaps for the established standby generation market, but probably not for nascent DG markets.

- c. Please describe the witness' understanding of a competitive marketplace determining the timing and size of generating additions versus a centralized planning approach. State all facts and sources relied upon to reach that understanding.

RESPONSE:

The witness does not recommend that competition be used for determining the timing and size of central generation units. Competitive markets commonly determine the timing and size of products and services that are not deemed "natural monopolies." DG products and services are not "natural monopolies". The recommendations by the COM in the instant proceeding are intended to make Hawaii's DG markets more competitive.

- d. Please discuss the witness' understanding of whether, in a competitive marketplace, there may be instances where individuals or individual companies may act in a manner that is most cost efficient or profitable for them, but may not be in the overall interest of the entire market.

RESPONSE:

By sending the proper market price signals to consumers, as the COM's recommendations are intended to do, individual consumer decisions can be aligned with the overall interests of the entire market.

- e. Does the witness believe that a competitive marketplace, where new generating resources would be allowed to charge what the market will bear, would represent the most reliable and lowest reasonable cost approach for resource additions to meet the electricity needs of Hawaii's customers? Explain.

RESPONSE:

Yes, for DG resources. See response to subsection d above.

COM-RIR-11 Ref: COM RT-1, Page 25.

The following information requests pertain to the witness' references to the emerging disruptive DG technologies that have the potential to make internal combustion engine CHP systems obsolete such as sterling engine, fuel cell and plastic photovoltaic systems.

- a. What time frame or frequency does the witness believe that emerging DG technologies could be evaluated so as to avoid consideration of disruptive DG technologies that have the potential to make systems obsolete? State all facts and sources considered to respond to this request.

RESPONSE:

As with other disruptive technologies, it is possible for an emerging DG technology to become commercially available without much advance notice. Therefore, forecasts, regardless of the time frame or frequency, cannot be relied upon with a great deal of certainty.

- b. For each of the items mentioned by the witness that have the potential to make internal combustion engines CHP systems obsolete, please provide the witness' expectation as to when each of those emerging disruptive DG technologies have a potential to make internal combustion engines CHP systems obsolete. State all facts and sources considered to respond to this request.
- c. With respect to the response to part "b". of this information request, please provide the timeframe in which each of the above systems will be utilized before other emerging disruptive DG technologies have the potential to make such systems obsolete. State all facts and sources considered to respond to this request.

RESPONSE:

See response to item a. We do not believe that the requested information could be known with certainty. Forecasting products and services, especially those of disruptive technologies, are much different than that of a commodity like grid-supplied electricity. This is why the COM suggests that the Commission view HECO's CHP program projections with caution and the understanding that the projections could be off by a large margin. The COM suggests that the CA consult the referenced book on disruptive technologies, "The Innovator's Dilemma," by Clayton M. Christensen.

CA-RIR-12 Ref: COM RT-1, Page 30.

The witness indicates there are other issues not addressed due to limitations on time and resources.

- a. Please identify the other issues that the witness has not addressed and provide a brief discussion of why it is an issue that needs to be discussed in the context of this docket. In your discussion, it would be very helpful if a prioritization of the other issues can be provided to facilitate determining whether additional time should be made available to address those issues.

RESPONSE:

An example relates to the ownership of and access to customer information. With the advent of powerline communication, sophisticated metering, and computer-interactive appliances/equipment, detailed end-use data will become readily available. The ability to data mine the end-use information will place HECO at a competitive advantage over non-utility competitors, if HECO were allowed to compete against them. Privacy and security issues will also become more prevalent in this scenario. This issue was brought up by at least one party in the California Public Utilities Commission's initial investigation into DER (the parties' submittals in said California proceeding are no longer posted on the Internet and therefore, cannot be cited).

HECO dismissed concerns about access to customer information, see HECO-T-1, page 28, at line 12. The COM anticipates the CA to address this issue, but will consider addressing this issue if the CA fails to do so in future proceedings.

Regarding the determination of additional time in this proceeding to address additional issues, the COM will not request additional time because of the CA's strong opposition to prior inquiries into extending the time frame of the instant proceeding.

- b. What does the witness believe is needed in the way of time and resources to address such other issues?

RESPONSE:

The COM has not made such an assessment.

- c. Does the witness believe that the COM has sufficient time and resources to dedicate to the additional proceedings that the witness recommends in his direct testimony for the Commission to initiate? Explain.

RESPONSE:

Yes, the COM is participating in the Commissions rulemaking proceeding on ratemaking, starting with the workshop on November 22, 2004.

CA-RIR-13 Ref: COM RT-2, Page 2.

The following information requests pertain to the witness' statement that market power was determined to be the primary cause of the West Coast energy crisis of 2000-2001.

- a. Please provide the witness' understanding and identification of the participants that had market power that was determined to be the primary cause of the West Coast energy crisis.
- b. For each of the participants identified above, please provide the witness' understanding of whether such participant was an unregulated entity or a regulated entity using market-based rates or a regulated entity with Commission approved cost-based rates.
- c. For each of the participants identified in response to part "a". above, please provide the witness' understanding of whether the participant had passed the "HHI" test to participate in the West Coast market with market-based rates.
- d. Please indicate the witness' understanding of whether FERC is continuing to use HHI as a measure of market power? If not, what is the witness' understanding of why FERC is not using such measure?
- e. In markets where the HHI has indicated that market power exists, please provide examples of the solutions used to mitigate the possibility of a market participant or group of participants exerting undue influence on the market.
- f. Assuming that one of the examples identified by the COM's witness with respect to the response to part e. above is preventing a participant or participants from participating in a particular market, please address the following:
 1. Please discuss the witness' belief as it relates to whether preventing a participant or participants from a market may allow less efficient or competent players in the market to serve customers at a higher cost.
 2. Please discuss the witness' belief whether disallowing certain participants will have no impact on possibly stifling innovation or other market developments that might occur under less restrictive circumstances.

RESPONSE:

See Mr. Lazar's response to HECO/Maui-RT-RIR-1 for Mr. Lazar's responses on the California Energy Crisis.

Mr. Lazar understands that the Department of Justice uses the HHI measure of concentration. See attachments 7 and 8, included in the response to HECO/Maui-RT-RIR-1.

CA-RIR-14 Ref: COM RT-2, Page 8.

The witness indicates that the utility will avoid the need to invest in new generation, transmission and distribution facilities and that these avoided costs should be netted out from the "lost margin" calculation.

- a. What is the witness' understanding as to the timing difference between the loss margin revenue and the cost avoided by the utility to invest in new generation, transmission and distribution?

RESPONSE:

The witness has focused on long-term effects, since he expects that customer and sales growth in Maui will absorb any temporary surplus generating capacity. Both the avoided cost of new resources and the mitigated sales margin will occur over the roughly three-year period typically separating rate proceedings.

- b. What is the witness' expectation as to the level of customer-sited DG that could be installed for each of the utilities that will avoid the need to invest in new generation, transmission and distribution facilities and whether such amounts of customer-sited DG are achievable? Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

See the Company's CHP filing for an estimate of approximately 100 DG systems that would be expected to develop on each of the three systems.

- c. What level of customer-sited DG could need to be installed before the witness believes that customer-sited DG would have a negative revenue impact on the utility system? Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

There would need to be enough customer sited DG to eliminate all new generation need and depress sales below current levels. The witness believes this is implausible for the island of Maui given current DG technology. Technological innovation can change this - for example, development of residential-scale CHP units, amorphous PV

systems, and other small-scale DG systems that could be mass-produced.

- d. Please confirm that the COM is not asserting that avoided costs are included with embedded costs in determining revenue requirements.

RESPONSE:

Avoided costs are an essential element of the revenue requirement in any case, because the State of Hawaii uses future test years. Only the use of historic test years, adjusted only for known and measurable changes, would avoid consideration of avoided costs in the development of the revenue requirement.

1. Based on the above understanding, please confirm the assumption that the COM is agreeing that rates should be unbundled to allow the Commission to properly set rates for such services as standby services to offset the lost retail revenues.

RESPONSE:

The COM does not agree that rates should be unbundled to allow the Commission to properly set rates for such services as standby rates, and does not agree that there is any need to "offset the lost retail revenues." It is possible, as both the witness and HECO have described, to set rates properly without unbundling.

2. Assuming that not all customers choose to invest and implement DG facilities, please discuss whether it is reasonable to expect that the utility companies will still need to replace generation, transmission and distribution facilities as currently designed to meet existing, as well as possible future demands, (e.g., standby service).

RESPONSE:

No. It is likely that technological innovation will mean that any replacement of generation, transmission, and distribution facilities that occurs in the future will use a different design than that of current units.

CA-RIR-15 Ref: COM RT-2, Page 9.

- a. Does the witness believe that the utility is better off by not serving customers? Explain.

RESPONSE:

The utility's customers are better off if the utility avoids serving customers that cost more to serve than the revenue they provide. The proposed impact fees set forth by the County of Maui would avoid this situation, as any costs incurred to serve new and expanding loads would be paid by the loads to be served. Under the current system, all customers suffer rate increases when new resources are developed to serve growing loads.

- b. To what level should the utility not be serving customers in the future? Explain.

RESPONSE:

The utility should provide service to all customers who demand it, and are willing to pay compensatory rates for the service. The utility should not serve customers unwilling to pay compensatory rates.

CA-RIR-16 Ref: COM RT-2, Pages 11 and 12.

The witness indicates that MECO's current rates are based on embedded costs, but that only marginal costs are relevant when looking forward and for implementation of DG.

- a. Does the witness believe that MECO's current rates should not be based on embedded costs, but should be based on marginal costs to send the price signals discussed elsewhere the witness' testimony? Explain.

RESPONSE:

The witness believes that MECO's revenue requirements should be based on embedded costs. MECO's rate designs should generally reflect long-run marginal costs.

- b. Does the witness believe that there are some components of MECO's current rates that should be based on marginal costs rather than embedded costs? Explain.

RESPONSE:

Yes. The customer charges should be based on the decremental avoidable costs that MECO would avoid if a customer left the system. The end-block rates should be based on long-run marginal costs of new power supply, so that customers can make efficient decisions at the margin, where elasticity is capable of providing load relief to the system.

- c. Does the witness believe that a mismatch occurs when a utility charges customers for the services it provides at embedded costs, but unbundles rates so that DG customers are in essence credited marginal costs for the avoided services? Please explain.

RESPONSE:

Yes, and this is one reason we have proposed impact fees, so that new and expanding loads pay the full cost of their service, not just embedded cost rates that may reflect resources that have been paid for by other consumers. Under the approach we recommend, growing loads would pay impact fees, and shrinking loads could receive impact credits if the decline in loads due to customer-sited DG helps the utility avoid a high cost resources, and therefore allows an existing lower-cost resource to be used to serve a new or growing load.

- d. Does the witness believe a customer receiving a credit for the entire DG output at marginal cost based rates and having its entire load billed at the utility's embedded cost based rates accomplishes the same objectives proposed by the witness? Please explain.

RESPONSE:

The witness has experience with this type of approach in a case involving the Boeing Company in 1984. In theory it should work, but the terms of the contract between the utility and the customer are crucial. The Washington Commission ultimately had to order modifications to the contract in order to protect the public interest in this particular docket, and retaining jurisdiction over such a contract may be impossible.

CA-RIR-17 Ref: COM RT-2, Page 15.

The witness references three mainland States where excess electric capacity situations exist and references the transportation service in the natural gas industry on the mainland in the rebuttal testimony.

- a. Is it the witness' belief that excess capacity situations have occurred for each of the utilities serving customers in the state of Hawaii? If yes, please provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

Yes. The fact that HECO was able to go from 1992 to 2004 without adding a new power plant, while its sales grew dramatically during that time, suggests that the Company had an excess capacity situation at the early part of this period. While conservation efforts mitigated load growth, they did not eliminate it, and the Company actually experienced rising margins from increasing sales (at the same time it was receiving lost margin compensation under the Commission's DSM program implementation).

- b. For each of the situations identified in response to part "a" of this information request, please describe the timeframe and the duration over which the utility have excess capacity. Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

See response to item a above.

- c. Please describe the witness' understanding of the ability of Hawaii's gas customers to obtain transportation service on the islands.

RESPONSE:

Those using propane have no difficulty obtaining (highway) transportation service. Availability of SNG transportation service is not meaningful for Hawaii, since there is only one SNG facility, owned by the gas distribution company. If LNG were to come to Hawaii, it is quite possible that a market for pipeline gas transportation could emerge, and if that occurred, it would be appropriate for the Hawaii PUC to consider establishing gas transportation tariffs.

CA-RIR-18 Ref: COM RT-2, Page 18.

The witness' testimony states that each DG customer should contribute a portion of the cost of owning and maintaining the capacity that provides service to all DG customers in proportion to how much and how often individual customers use that standby capacity.

- a. Should the standby rates to DG customers be based on embedded costs?

RESPONSE:

The witness believes that standby rates to existing customers that have contributed to cost recovery for existing resources should be based on embedded costs.

1. If yes, please explain how such costs should be determined.

RESPONSE:

See Exhibit COM-R-202.

2. If no, please explain why not, and describe how such costs should be determined.

RESPONSE:

Not applicable.

- b. Does the witness believe that the average and excess cost allocation methodology takes into account how much and how often customers use capacity? Explain.

RESPONSE:

No. The Average and Excess methodology is simply a peak responsibility method that takes into account that different classes may have different non-coincident peak demands. If all classes have their non-coincident peak demands at the same time, Average and Excess Demand methodology collapses into a Peak Responsibility method. A Base-Intermediate-Peak, Peak-Credit, or Time-Of-Use method would take into account how much and how often customers use capacity.

c. Does the witness believe capacity costs should be based on other allocation methodology? Explain.

RESPONSE:

Yes. The witness believes that production and transmission capacity costs should be allocated between classes based on time-of-use energy measurements. Time-of-use rates can be used to recover these costs from large-use customers, but are not cost-effective for small-use customers including residential and general service customers under 20kW.

CA-RIR-19 Ref: COM RT-2, Page 28.

The witness indicates that in the past when fuel costs were lower, the utility may not have had the time differentiated costs that it does at current prices.

- a. Please identify the fuel costs in the past (i.e., \$/barrel) referenced and the timeframe referenced in the testimony.

RESPONSE:

Fuel oil cost as little as \$2/bbl prior to the 1973-74 oil embargo.

- b. In the timeframe referenced in the past, please identify what the Hawaii utilities' on-peak and off-peak costs were at that time and the Hawaii Island utilities' on-peak and off-peak costs currently.

RESPONSE:

The witness does not have information from that era. See COM-R-203, Page 2, for the MECO marginal cost data, but that does not show the effect of collecting the capacity-related costs primarily during the on-peak and shoulder-peak rate periods.

- c. Provide the definition of on-peak and off-peak hours used in responding to part "b" of this information request.

RESPONSE:

The only definition used is that used in the MECO marginal cost study, which was provided by HECO in response to COM-Companies-SOP-IR-12.

- d. What is the witness' understanding as to the load profile of the Hawaii utilities in the "distant past" to the current period? Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

The witness is aware of Hawaii utility load profiles only from 1990 to present. He assumes that the presence of air conditioning was less common in the pre-embargo area, which would have tended to make load profiles flatter than at present, but other factors may have offset this effect.

CA-RIR-20 Ref: COM RT-2, Page 29.

The witness indicates that with a time of use rate customers will have an incentive to do maintenance on DG during nighttime hours spread over a longer period of time.

- a. Please describe the DG maintenance, which the witness suggests could be performed at night and state the number of days that it would take to perform such maintenance. Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

The principal scheduled maintenance that could be performed at night is regular oil changes, which for IC units needs to be done several times between annual maintenance outages. While marine diesels allow for oil changes while running, it is the witness's understanding that most CAT and Cummins units require shutdown. These can normally be performed during a single shift of a single night.

- b. What are the quantified costs and benefits of performing this maintenance during nighttime hours? Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

The primary cost would probably be labor overtime, since the skilled labor performing this work would probably normally not work night shift or weekends. The primary benefit is the ability to use standby service during off-peak hours, when the utility would need zero additional capacity to provide this component of maintenance standby service.

- c. What is the on-peak period and off-peak period that the witness believes should be used to define each of the Hawaii Island utilities? Provide the specific facts considered in responding to this information request and state the basis for the conclusions reached.

RESPONSE:

The only time periods used by the witness are the three time-of-use rate periods used in the MECO marginal cost of service study. If necessary to ensure that the goal of providing short-duration scheduled maintenance during periods of capacity sufficiency, it

would be reasonable to define a narrower off-peak period for maintenance without standby payments.

DATED: Wailuku, Maui, Hawaii, November 22, 2004.

BRIAN T. MOTO
Corporation Counsel
Attorney for Intervenor
COUNTY OF MAUI

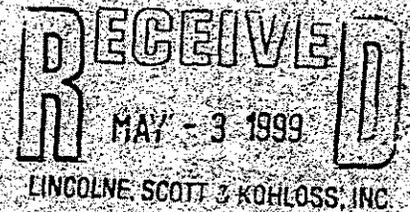
By Cindy Y. Young
CINDY Y. YOUNG
Deputy Corporation Counsel

ATTACHMENT 1



April 30, 1999

Mr. Albino Prieto, Jr.
Lincoln Scott & Kohloss, Inc.
201 Merchant Street, Suite 2310
Honolulu, Hawaii 96813



Subject: Pohai Nani Cogeneration - HECO Protection Requirements

Dear Mr. Prieto:

The following are the protection requirements for the interconnection of Pohai Nani's 160 kW, 208 V, 3 phase induction generator system to HECO's Puohala 1-Puohala 1 #2890 12.47 kV circuit.

Requirements at interconnection to HECO system

- The manual disconnect shown on drawing E-3 must be accessible by HECO personnel at all times, lockable in the open position and confirm the open position by means of a visible break.
- The high side fuse for the Pohai Nani transformer must coordinate with upstream HECO devices.
- Lightning arrestors at the 12.47 kV voltage level (installed by HECO at the customer's expense) are necessary for protection of the customer's equipment.

Breaker requirements

- One breaker to positively isolate the generator from the HECO system (generator breaker)
- A separate breaker to isolate the entire Pohai Nani facility (main breaker) located on the low side of the Pohai Nani transformer

Protective relaying for generator breaker

The following utility grade relays are required to trip the generator breaker. The relays are listed by device number, function and quantity.

- 27 - Phase undervoltage relays, one
- 46 - Negative sequence current relay, one
- 47 - Phase voltage sequence relay, one
- 50/51 - Phase overcurrent relays with instantaneous elements, three
- 51N - Ground overcurrent relay is required if the generator is grounded, one

*Making Connections
Barriers*



- 59 - Phase overvoltage relays to provide instantaneous and time delayed overvoltage clearing, one
- 81U - Underfrequency relays, one
- 81O - Overfrequency relays, one

Protective relaying for main breaker

The following utility grade relays are required to trip the main breaker. The relays are listed by device number, function and quantity.

- 32 - Reverse power relay, one
- 50/51 - Phase overcurrent relays (50/51) with with instantaneous elements, three
- 59N - Ground overvoltage relays are required if Pohai Nani's 12.47kV-208V transformer is connected in delta on the high side, one

Connecting and disconnecting to HECO system

- Written documentation outlining procedures to connect and disconnect the generator from the HECO system need to be provided for review and approval by HECO.

Please note also that reclosing relay setting changes at HECO's Puohala #2890 may be necessary to increase the reclose delay to insure that Pohai Nani's generation separates from HECO in the event of a permanent fault.

An agreement between Pohai Nani and HECO will be executed only after all the above requirements are met.

If you have any questions, please call me at #543-7553 or David Kaneshiro at #543-4750.

Sincerely,



Jimmy Lum
Customer Installation Dept.

cc: D. Kaneshiro
G. Tokunaga
D. Sakamoto
D. Ching



CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing document were duly served upon the following by electronic mail and by United States mail, postage prepaid, on November 22, 2004, addressed as follows:

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DATED: Wailuku, Maui, Hawaii, November 22, 2004.

BRIAN T. MOTO
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Attorney for Intervenor
COUNTY OF MAUI

By *Cindy Y. Young*
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Deputy Corporation Counsel

