



November 15, 2004

William A. Bonnet  
Vice President  
Government and Community Affairs

The Honorable Chairman and Members of the  
Hawaii Public Utilities Commission  
465 South King Street  
Kekuanaoa Building, 1st Floor  
Honolulu, Hawaii 96813  
Attention: Catherine P. Awakuni

PUBLIC UTILITIES  
COMMISSION

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Dear Ms. Awakuni:

Subject: Comments Relating to the RPS Initial Concept Paper

Pursuant to the Commission's letter dated November 1, 2004, Hawaiian Electric Company, Inc. ("HECO") respectfully submits its comments to the Commission's Initial Concept Paper, which summarizes the Commission's methodology of fulfilling the legislative mandate of Act 95, S.L.H. 2004.

If you have any questions regarding this matter, please contact Patsy Nanbu at 543-4702.

Sincerely,

Attachment

cc: Division of Consumer Advocacy

Hawaiian Electric Company, Inc.  
Comments on the Hawaii Public Utilities Commission  
Initial Concept Paper  
Act 95, S.L.H. 2004, Relating to Renewable Portfolio Standards

A. Comments on the Objectives of the Model Based Methodology

- (1) Act 95 amends Chapter 269, HRS, by adding two new sections relating to renewable energy. The second section directs the Commission to develop and implement a utility rate-making structure, by December 31, 2006, which may include but is not limited to performance-based ratemaking, to provide incentives to encourage Hawaii's electric utility companies to use cost-effective renewable energy resources found in Hawaii to meet the renewable portfolio standards. The implicit assumption of this provision is that the form of regulation (i.e., the regulatory regime) can favorably impact the achievement of the renewable portfolio standards. In essence, the Commission is asked to look at incentive-based regulation, as an alternative to the traditional command and control form of regulation, in which the Commission directs the utility to do certain things, and imposes penalties if those things are not done.

The Commission welcomes comments on the impact of regulation on behavior, and the prospects of regulation under PBR, and has asked for comments on alternative regulatory regimes (§ 29). In addition to cost-of-service rate regulation and PBR, the regulatory regime could include mechanisms for shareholder incentives (such as those for the existing DSM programs and/or the proposed DSM programs), legislative and/or PUC assurances of cost recovery for prudent investments and contracts that are approved by the Commission, mechanisms to expedite approvals of the contracts and recovery of the costs under the contracts (such as a file and suspend mechanism for contracts that meet established parameters), and mechanisms to ensure uniform treatment of customer alternatives if utility prices increase as a result of meeting the renewable portfolio standards.

The Commission also notes that PBR requires a huge effort by all stakeholders (§ 25). The Companies note that this comment is applicable to any effort to encourage the implementation of cost-effective renewable resources.

What is not clear is how the model-based methodology proposed by the Commission will address the effect of the ratemaking structure (i.e., the form of regulation) on the accomplishment of the renewable portfolio standards. Rather, it appears that the model attempts to measure the impact of the method of regulation, with the accomplishment of the renewable portfolio standards as a given, on utility "rate design" and utility financial structures. Further comments on this point are discussed later.

- (2) Act 95 also adds a section to Chapter 269 requiring that actions be taken by DLNR and DBEDT. This provision, along with other provisions in the Act, explicitly recognized that there are substantial other factors besides utility actions that will impact the ability to achieve the renewable portfolio standards. These include factors such as land use policy, permitting, and community concerns. It is not clear how the model-based methodology takes into account these other factors.
- (3) Act 95 explicitly points to factors such as the impact on utility system reliability and stability. Hawaii's isolated island systems are not simple to model using mainland models. It is important to consider constraints that these systems have, and that mainland systems do not have (such as limitations on the ability to accept as-available energy generated from renewable resources during minimum peak load periods). These kinds of constraints are addressed through energy storage systems or other load leveling mechanisms. It is not clear how the model-based methodology of the Commission will address these kinds of constraints. Further comments on the model are included later.
- (4) Act 95 also takes into account that the ability to achieve renewable portfolio standards is based on the availability of cost-effective renewable resources, and requires an assessment of factors such as the impact on consumer rates. The Commission is required to do a study to assess the capability of Hawaii's electric utility companies to achieve renewable portfolio standards in a cost-effective manner, and to revise the standards based on the best information available at the time if the results of the studies conflict with the renewable portfolio standards established by Act 95. The Act defines cost-effectiveness in terms of avoided costs.

As a result, inputs to any model regarding the cost and availability of renewable resources are critical to any assessment of the market under Act 95. Further comments on this point are included later.

Also, it is not a given that the renewable portfolio standards can be met while reducing power prices, as paragraph 19 seems to suggest. The more that externality factors are taken into account in determining the prices paid for renewable resources, the more likely it is that utility prices will in fact increase. (By definition, externalities include societal costs that are not explicitly captured in utility costs at the present time.)

- (5) In developing and implementing a ratemaking structure to provide incentives that encourage Hawaii's electric utility companies to use cost-effective renewable energy resources to meet the renewable portfolio standards, Act 95 directs the Commission to determine the extent to which any proposed utility ratemaking structure would impact electric utility company profit margins, and to ensure that these profit margins do not decrease as a result of the implementation of the proposed ratemaking structure. In essence, Act 95 recognizes that the imposition of renewable portfolio standards, and the requirement that utilities take actions to

achieve those standards, create certain risks for the utility. The ratemaking structure (i.e., the regulatory method used by the Commission to recover costs and provide incentives to achieve the standards) needs to take these risks into account.

In many instances, renewable resource projects are developed by third parties, who rely on long-term power purchase agreements (PPA) to be able to finance the projects. The ability to finance projects depends on having a credit worthy off-taker, i.e., the utility. Under current regulation, the utility, at best, is able to pass on the cost of purchasing power to its customers (through a number of mechanisms, including the recovery of forecasted capacity payments through base rates, the recovery of certain purchased energy costs that are not included in base rates through the energy cost adjustment clause, and the use of the firm capacity surcharge for non-fossil fuel firm capacity projects between rate cases).

At the same time, long-term PPAs have substantial balance sheet implications, as a result of the manner of which credit rating agencies account for the debt-like characteristics of fixed payments obligations under such contracts, the capital lease implications of some contracts and the potential for some contracts to give rise to “variable interest entities” that must be consolidated with the utility’s results of operation. The model needs to address these impacts.

In addition, long-term obligations test the regulatory compact -- i.e., risk arises if the utility does not have adequate assurance that it will be able to recover the PPA costs through rates over the long term. The financial markets consider that there is less risk if these assurances are legislative in nature.

Further, the White Paper correctly recognizes that regulation is a risk factor (§ 23). As noted in the White Paper, in order to mitigate regulatory risk, there needs to be a clear and consistent regulatory policy (§ 23). This applies to the assurances that prudently incurred costs will be recoverable in the future, and to the ability to receive incentives that offset the risks incurred in pursuing renewable energy resources.

For example, one of the objectives of increased reliance on renewable energy resources is increased price stability for electricity prices. This will not take place unless as-available energy costs for renewable resources are de-linked from oil-based avoided energy costs. Fixing energy prices in a long-term PPA, however, entails risk for the utility, since actual avoided costs may end up being lower than the fixed prices for renewable energy. There needs to be adequate assurances that the utility will be able to recover these costs. (This is not always simple to do. For example, large commercial customers may have alternative sources of electricity, such as customer-sited distributed generation.)

The White Paper also notes that capital flows to the highest returns. This is partially correct - - capital flows to the highest returns on a risk-adjusted basis. Thus, as indicated above, the ratemaking structures has to take these risks into account.

- (6) The RPS law addresses the possibility of achieving the renewable portfolio standards on a consolidated-company basis, rather than on an island-basis. It is not clear how the model-based methodology to be used by the Commission will address this possibility. Also, if the potential exists to develop a higher percentage of renewables on the Big Island and/or Maui, then some mechanism needs to be considered as to how Oahu ratepayers could share in that cost (if the ability of their utility, HECO, to meet the renewable portfolio standards depends on the development of renewable resources on the Islands of Hawaii and Maui).
- (7) The Commission properly looks to experience in Mainland jurisdictions, including California, with respect to RPS laws and PBR (§§ 15, 16, 20). At the same time, it is important that the significant differences between Hawaii and the Mainland be taken into account in structuring the regulatory mechanism used to encourage the development of renewable resources in Hawaii. The Commission recognized many of these differences in its final decision and order in the competition docket.

#### B. Comments on the Model

It is not possible to offer substantial comments regarding the consultant model to be used by the Commission based on the generic description of the model in the White Paper. At this point, it is not clear what the inputs would be (i.e., the data, forecasts, and planning assumptions), although many of the inputs appear to be typical inputs for a model of this nature. It is not clear what the model's optimization criteria will be, or what the outputs of the model will be. There needs to be a process by which the model can be explained (and any simplifying assumptions can be identified), questioned, explained and corrected. It would be very helpful if a separate technical workshop was held with the Commission's consultants before data requests were issued. Information could be provided, for example, as to how the model has been used elsewhere.

- (1) Model inputs. One of the critical sets of data and assumptions relates to the alternatives for renewable energy resources in Hawaii, the viability of renewable energy investments, and the "locational costs" of renewable energy projects (§§ 21, 30, 44), and the Commission asks for comments on candidate projects for renewable investments (§ 46). For solar energy facilities such as photovoltaic systems, this depends on forecasts of government subsidies (§ 13). There are other renewable energy resources that are not mentioned in the White Paper (§§ 13, 14), which policy-makers in Hawaii, such as DBEDT, may be relying upon to meet the renewable portfolio standards. These include waste-to-energy facilities, ocean thermal energy conversion systems and wave energy conversion systems. Some renewable energy projects may depend on whether a commercial process associated with the production of a renewable fuel (e.g., sugar production, or veneer mills that produce wood chips) is financially viable. Permitting and community impact are much larger factors in Hawaii in determining whether projects will be commercially successful, as was demonstrated with respect to the failed efforts to promote the development of massive geothermal resources.

The Companies have commented on the viability of distributed renewable resources in the DG Docket. Information on the cost and viability of renewable resources is being developed as part of the Companies' on-going integrated resource planning ("IRP") processes. Renewable Hawaii, Inc. is developing information, some of which is proprietary, through its request for proposals on the islands of Oahu, Maui and the Big Island.

- (2) Model outputs. The output of the model is intended to be an "electric utility rate design" that meets four criteria in Act 95 by December 31, 2006. These criteria include achievement of renewable portfolio standards, encouraging investments in renewable energy facilities, conforming to the existing regulatory regime or to alternative regulatory regimes, and providing an opportunity to earn a reasonable rate of return (ES).

It appears that the output objective is to estimate future utility tariffs (§ 41). The output of the model is a forecast of rate designs (§ 45, 52), and the Commission asks for comments on forecast rate designs (§ 46, 53). It appears that, by rate design, the authors of the White Paper are referring to the "cost-based tariffs" referenced in § 37.

However, the "output" of the process undertaken by the Commission should be the ratemaking structure (i.e., the "regulatory regime") designed to achieve the renewable portfolio standards, encourage investments in renewable energy facilities, and provide utilities with an opportunity to earn a reasonable rate of return.

The White Paper indicates that: "The structure and level of future rates are configured to be efficient and equitable." (§ 41). The White Paper also indicates that candidate rate designs are evaluated (§ 54), and the output of the model is "an optimal electric utility rate structure that is likely to maximize social welfare and to fulfill the Commission's legislative mandate." (§ 55).

It is not clear how the candidate rate designs will be evaluated based on "social welfare implications", and efficiency and equity effects, or what is meant by achieving "the maximum social welfare" (ES). At one point, it is indicated that dispatch cost is the relevant measure of social welfare for the hourly optimization models (§ 36).

In order to better comment, the Companies also need more information regarding how the consultants would define a "successful RPS scheme in the U.S." (§ 20). Would "successful" be based on the percentage of renewables developed, the cost-effectiveness of the renewable projects, the impact of the RPS on rates, the impact of the RPS on emissions, and/or the impact of the RPS on utility financial integrity?

The White Paper states that the model deploys optimization methods that reflect technical and commercial features of each island power market (§ 31). However,

from the description, it is clear that the models were developed for Mainland systems. Typically, such models need to be modified to recognize the constraints and optimization criteria applicable to isolated island systems.

The Commission properly requests comments on the choice of the base year (§ 40), which is identified as 2003 or 2004 (§ 34). The Companies recognize that it is necessary to pick a base year that reflects actual results. However, neither 2003 nor 2004 may be a normalized base year with respect to the development of renewable resources, or with respect to rate design in Hawaii. HECO's first rate case in ten years has just been initiated in Docket No. 04-0113. HELCO has executed wind contracts for two significant projects on the island of Hawaii, and the implementation of those projects will significantly change base line conditions on that island. MECO hopes to finalize a major wind contract for a 30 megawatt project on Maui in the near future, and the development of that project by the end of 2005 as proposed by its developers will significantly alter the base line conditions on Maui. In addition, all three companies are proposing to move forward with combined heat and power ("CHP") systems, through a CHP program and through Commission-approved Rule 4 contracts. It is not clear how the implementation of utility-owned CHP systems, which are accounted for in the renewable portfolio standards, would impact the base line conditions.

The Commission indicates that it welcomes comments on the congruence between the simulation outputs and market realities (§ 40). Since it is not clear what the model outputs would be, or what is meant by market realities, it is difficult to comment on the congruence between these two concepts. However, unless factors that will impact the ability to develop cost-effective renewable projects on Hawaii are captured by the model, such as the impact of land use and permitting, it is unlikely that there will be a congruence between simulation outputs and market realities.

### C. Other Comments

- (1) It is not clear what the relationship of the Commission's model-based methodology is to ongoing dockets, such as the utilities' IRP processes. The model seeks to develop optimal expansion plans (§ 44). Will such optimal expansion plans take into consideration all of the considerations and advisory group input that are relevant to the integrated resource planning process
- (2) The overall process envisioned by the commission is the conduct of three sets of workshops (§ 5) and the creation of a document leading to rule making (§ 7, 56). The Companies support the Commission's use of collaborative workshops as the initial stage of its process. The Companies also urge the Commission to consider the process used to establish the IRP framework, which also started with workshops and a collaborative process. However, that was followed with a process by which framework proposals were evaluated through the submission of testimony, information requests and cross-examination, so that the implications of the proposed framework provisions could be fully understood by the Commission.