Response of Hawaiian Electric Company, Inc. ("HECO" or "Company") to Comments Submitted in Connection with HECO's Final Proposed Request for Proposals For Long-Term Power Purchase Agreements From Renewable Energy Projects

A. Introduction

HECO issued a Draft Request for Proposals (RFP) For Renewable Energy Projects on Oahu on February 11, 2008. The Draft RFP contained the RFP Document, Response Package for Bidders to provide requested information and a Model Power Purchase Agreement ("PPA") as well as additional information for Bidders regarding aspects of the RFP. The RFP includes a schedule for the solicitation process. HECO held a technical conference for Bidders on March 14, 2008. Most of the comments and questions raised at the Technical Conference were responded to during the conference by HECO. A few of the comments were deferred to the Final RFP and will be addressed with these responses.

Only two interested parties submitted additional written comments after the Technical Conference: UPC Hawaii Wind ("UPC") and Castle and Cooke, Inc. ("C&C"). Both parties have expressed interest as potential bidders in the solicitation process.

In general, the comments provided by C&C can be summarized as follows:

1. C&C generally wants the RFP to be more flexible in its requirements and in the PPA standard terms and conditions, especially in consideration of projects larger than 100 MW. C&C suggests more information on grid side mitigation measures should be made available to help optimize generator measures. Additional specific comments were also provided.

2. C&C suggests that the RFP should lead to PPAs for at least 100 MW and not be reduced dependent on the result of negotiations with respect to grandfathered project proposals.

In general, the comments provided by UPC suggest that the Draft RFP and model PPA are one-sided in favor of the utility and offer the following among their comments about the RFP and related documents:

1. Imposes too much risk on developer and may discourage potential bidders from participating and will increase costs to consumers.

2. Data requirements, unnecessary financial requirements and security, and stringent performance standards.

3. Many requirements do not seem applicable to as-available resources.

4. Too much detail required too early in the process.

5. Financial pro forma should not have to be provided.

HECO has reviewed these comments and through this document will respond to the comments submitted by both parties as well as identify revisions or clarifications made to the documents in response. HECO has particularly focused on comments that assert that provisions of the Draft RFP or model PPA would unreasonably exclude potential bids that should be reasonably considered on their merits. In addition, HECO has taken a hard look at comments that allege that the Draft RFP, model PPA and/or RFP process is not structured in a way that would facilitate bids that could provide renewable energy in a reasonably cost-effective way consistent with reliability needs of HECO and its customers.

B. HECO Responses to General Comments

Data Requested in Response Package is Reasonable and Consistent with Industry Standards

HECO wishes to respond to the general comments about the information requirements included in the Response Package in the RFP. Bidders should provide the best information they have available at the time they submit their proposals and bids will be evaluated based on the quality of the information provided in response to the RFP. This information will be the basis for evaluating and ranking bids for short-list selection. There is no specific threshold mandating that bidders have to provide specific information in conformance with the RFP outside the Threshold Requirements listed in Section 4.3 of the RFP. Thus, data submittal requirements should be completed by the Bidders to the extent information is available. The Company recognizes that for some bidders preliminary information only will be available while for more mature projects, the Bidder may be able to provide more detailed responses.

HECO reviewed a number of RFPs in other jurisdictions as the basis for assessing evaluation criteria and information requirements from bidders for Renewable Portfolio Standards ("RPS") solicitations and other renewable solicitations and believes the information requested from bidders is consistent with industry standards.

No Mandatory Provisions in HECO's Model PPA

HECO notes that with regard to the model PPA, there are no mandatory provisions that bidders are absolutely required to adopt. As provided in Section 2.8 of the RFP, Bidders have the ability to take exception to and make counter proposals to specific provisions of the model PPA. HECO certainly recognizes that specific provisions of the model PPA, which may be more applicable for one technology, may not be applicable for another technology.

With regard to the model PPA in this RFP process, we believe the applicable standard is whether it represents a reasonable utility position that can reasonably be applied to most projects within the scope of the RFP, is consistent with industry practice, is reasonable in

the context of specific conditions on the Island of Oahu and past practices, and provides a good basis for receiving and comparing bids. HECO believes that this model PPA meets those standards.

In the design of the model PPA HECO relied primarily upon PPAs from other utility RPS solicitations including utilities in California, Nevada, Arizona, and New Mexico. In particular, a number of contracts for renewable energy designed to meet RPS requirements have been negotiated and approved by the Commission in California and the utilities have issued several RPS solicitations. These contracts were reviewed as models for the HECO model PPA.

Energy Provided Will Counted towards HECO's Renewable Portfolio Standards Requirements

HECO notes that while the RFP is primarily soliciting proposals for non-firm generation, the resources solicited are designed to meet the Renewable Portfolio Standards adopted in Hawaii. Thus, the model PPA for this RFP will differ from previous as-available PPAs and strives to achieve a balance designed to contract for energy that we expect to be non-firm, while including contract provisions designed to provide assurance that projects are on-line and can deliver energy and associated renewable energy attributes to meet the Company's RPS requirements. Accordingly, the model PPA contains provisions for ensuring that the energy contracted for is delivered in accordance with the contract, with sufficient flexibility to take into consideration the variance associated with intermittent renewable energy resources, such as wind and solar.

C. Specific Comments/Issues and HECO Response

Comments on the RFP Document

Issue: Effect of Grandfathered Proposals on the RFP

1. **Summary of Bidder's Comment:** C&C suggests that the statement in the Draft RFP that the actual amount of renewable energy procured through this RFP may be less that 100 MW based on the result of negotiations with grandfathered proposals will discourage Bidders from preparing proposals in response to this RFP. C&C comments that HECO should commit to selecting at least 100 MWs of new renewable resources if cost-effective bids are submitted from qualified bidders. (C&C Comment A.1)

   Company's Response: HECO appreciates the uncertainty associated with the grandfathered projects to potential bidders in the RFP. HECO also appreciates that bidders may need to assume that all grandfathered projects would result in PPAs that would be ahead of the potential bidder in the curtailment order, which could have the effect of increasing perceived risk due to the potential for reduced revenues to bidders.

Revisions to the RFP: See Hawaii Public Utilities Commission Order No. 24170 dated April 30, 2008 in Docket No. 03-0372 (available on HECO Generation Bidding website). The following revisions have been made accordingly to *Section 1.3 Solicitation of Interest and the Grandfathered Proposals.*

The Commission has issued Order No. 24170 in Docket No. 03-0372 setting a deadline of September 2, 2008 for HECO and the proposers of these grandfathered proposals to reach agreement on principle terms (term sheets). To the extent possible, HECO will provide an update on the status of these grandfathered proposals at least three weeks before the proposals deadline for this RFP.

Issue: Advantage of Projects with Earlier Commercial Operation Date

2. **Summary of Bidder's Comment:** The current RFP schedule provides for execution and submission of PPAs to the Commission in December 2009. Therefore, under the current RFP schedule, if there are no further delays in the RFP process, the Commission would be approving the PPAs in mid 2010. Developers could not begin permitting and then constructing their projects until after this time. Considering the total benefits of a 20-year contract, no significant preference should be accorded to a project that might start operating in 2011 compared to a more cost effective project that could commence commercial operation in 2012 or 2013. (C&C Comment A.2)

Company Response: The Company does not disagree in general with the premise that a project with an earlier commercial operation date in 2011 should not necessarily be preferred over a more cost-effective project with a slightly later service date in 2012 or 2013. As stated in Section 4.4 of the RFP, pricing related criteria are generally expected to be weighted higher than non-pricing related criteria.

Revisions to the RFP: None.

Issue: Grid Side Measures for Intermittent Energy Penetration

3. **Summary Bidder's Comment**: C&C suggests that efforts by HECO to incorporate grid side mitigation measures should be implemented immediately to provide better guidance to Bidders to identify the most cost-effective complementary generator equipment and procedures. Any guidance provided to Bidders with the issuance of the RFP in June 2008 on utility measures and on optimal generator measures will assist Bidders in developing the most cost effective proposals for HECO. (C&C Comment A.3)

Company Response:

For the purposes of this RFP, Bidders are requested to provide pricing based on meeting various levels of performance standards and under certain specific conditions in order to determine cost information for this supplier side approach. During the final detailed evaluation of pricing, HECO proposes to work with Bidders to optimize their pricing based on the most cost-effective combination of supply and grid side measures. To attempt to conduct this optimization step too early in the process would prevent HECO from obtaining the full range of pricing from the bidders in response to the various performance standard scenarios.

Revisions to the RFP: None.

4. **Summary of Bidder's Comment**: UPC comments that the draft RFP suggests that additional spinning reserve may be required to support an as available energy project, and that this may affect the net cost to the Utility. As we understand current operating procedure, HECO maintains 180 MW of spinning reserve to accommodate the loss of the system's largest generator. No additional spinning reserve should be required for adding a smaller renewable energy generator, just as there would be no impact if HECO purchased and added a smaller fuel-fired generator. (UPC Comment No. 17)

Company Response: The issue of impact to the amount of spinning reserve that the Company carries with respect to additional non-firm sources being integrated into the system is a complex issue and will be evaluated in the course of the RFP and bid evaluation.

Revisions to RFP: None.

Issue: Security Instruments

5. **Summary of Bidders Comment**: C&C suggests that in addition to a letter of credit and cash, the security goals expressed by HECO can be accomplished with surety bonds which are commonly accepted by other utilities and in other industries for the same purposes. (C&C Comment A.5)

Company Response: HECO's review of industry practice indicates that surety bonds are not typically used in PPAs. As provided in Section 2.8 of the RFP, Bidders may take exceptions to provisions in the model PPA. If a Bidder elects to propose a Surety Bond and take exception to providing a Letter of Credit or Cash, the Bidder should identify the amount of Surety Bond (expected to be higher than the limits set forth in the RFP for cash or Letters of Credit) and provide an explanation and rationale for this form of security.

Revisions to the RFP: HECO has revised the Credit and Collateral Threshold Requirement as follows:

- **Credit/Collateral Requirements**
  The bidders must agree to post Development Period Security of no less than $30/kW and Operating Period Security of no less than $40/kW (or as otherwise agreed to by HECO).

6. **Summary of Bidder's Comments:** UPC comments that Section 3.12 of the Draft RFP does not explain the rationale for posting additional security and suggests that posting additional voluntary security could make a project look more favorable, gives the impression that a bidder could post more security to "pay off" the Utility to gain an advantage for their project. Similarly, providing a subordinated interest in the project assets also might be seen as appearance of buying favor for one bid over another. Instead, the bid process would be more transparent if any security requirements were kept constant, and differences among proposals were addressed through pricing. (UPC Comment No. 15)

   Company Response: Any Bidder that chooses to submit a proposal with additional security may do so at their option. Rather than require higher levels of security in the RFP, HECO elected to set the levels at a lower level to attract more bids and allow Bidders to include additional security at their option. Any proposals that include additional security will be evaluated accordingly in the non-price evaluation along with the other non-price criteria.

   Revisions to RFP: None.

Issue: Bid Evaluation Criteria and Evaluation Approach

7. **Summary of Bidder's Comments:** C&C cites Section 4.4.2.2 of the Draft RFP and states that project financing and operating experience should not be evaluated in the first bid phase. C&C states that the RFP's requirement to execute long-term Operation and Maintenance Contracts at this stage of the bidding process is an unnecessary and expensive burden that will discourage some bidders. C&C states that only short-listed bidders should be required to obtain financial, operating and maintenance support as a pre-condition to a final PPA and interconnection agreement. (C&C Comment A.7)

   Company Response: The RFP does not require bidders to execute a long-term operation and maintenance contract, as C&C incorrectly states. Section 11 of the Response Package requires Bidders to provide an Operations and Maintenance plan only. Bidders' proposals will be evaluated based on the quality of the operation and maintenance plan relative to what is commercially reasonable for

the particular resource proposed, but it is not necessary for the Bidder to execute a long-term O&M contract with the Bidder's proposal.

Second, with regard to information for Bidders to demonstrate the experience and capabilities of their management team in successfully developing, financing, and operating other similar projects, HECO is looking for examples of projects the team has previously developed. The Bidder will be evaluated based on the information provided, with bidders who have developed, operated and financed a larger number of projects expected to be ranked higher than those who have little or no experience.

The above non-price criteria are common in the industry and are consistent with the criteria used in RFPs in other jurisdictions.

Revisions to the RFP: None.

8. **Summary of Bidder's Comment**: HECO has clearly stated the importance of maintaining system reliability when integrating renewable energy, but Bidders need more guidance to design projects with an appropriate balance between reliable performance and lower costs. Without the weighting of the criteria, it will be very difficult for Bidders to determine whether that balance has been achieved. At a minimum, HECO should provide the order of priority of all key factors so that Bidders can place greater emphasis on the criteria which HECO most values. (C&C Comment A.8)

Company's Response: A stated in the RFP, HECO proposes to follow an evaluation process that provides flexibility to address price and non-price issues with respect to the different pricing scenarios, service dates, technologies, and other factors. The Independent Observer ("IO") will be reviewing and approving the evaluation models prior to receipt of bids. Section 4.4 of the he RFP provides that pricing criteria will generally be weighted higher than non-price criteria.

With respect to the Non-Price evaluation, HECO has prepared additional information to assist Bidders with a relative order of priority for the non-price evaluation factors. HECO also notes that a similar request for prioritization was made at the March 14, 2008 Technical Conference.

Revisions to the RFP: Please see the revised Section 4.4.2 of the RFP for revisions to the Non-Price evaluation section to provide information on the relative priority of the various non-price factors.

Issue: Threshold Requirement – Experience of the Bidder

9. **Summary of Bidder's Comment:** C&C comments that prior wind farm experience by the Bidder should not be an essential requirement to be a qualified

bidder and that the experience of its project participants should apply to evaluating this Threshold Requirement. (C&C Comment A.6)

Company Response: HECO will consider a Bidder to have reasonably met this threshold requirement if the Bidder can provide sufficient information to demonstrate that the member of the project team whose experience is being identified to meet this Threshold criterion is under contract or otherwise has a firm commitment to provide services to the Bidder.

Revisions to the RFP and Contract: HECO has clarified the Experience of Bidder Threshold Criteria in Section 4.3 of the RFP document in accordance with the above. In addition, Bidders who are relying on the experience of consultants or contractors to meet the experience requirement should also note the revisions to Section 13.2 of the Response Package.

Issue: RFP Data Submittal Requirements

10. **Summary of Bidder's Comments:** UPC states that data submittal requirements seem excessive for projects that have not yet been fully engineered or designed. (UPC Comment Nos. 7-14, 16, and 30)

Company Response: The information requested by HECO is consistent with other RFPs for renewable energy (including RFPs to meet RPS requirements) in other jurisdictions. Information requested is necessary to allow HECO to conduct the price and non-price evaluation for purposes of selecting a short-list of bids and subsequently assessing the risk associated with each of the project proposals.

HECO recognizes that the much of the data requested may not be in final form due to the various stages of project development. For example, in response to UPC's assertion that providing one year's worth of wind data is not appropriate (UPC Nos. 11 and 30), it should be noted that the Response Package of the RFP does not specifically require one years' worth of wind data. Question 6.1c states "Provide (a) at least one year of hourly wind resource data, or (b) a wind resource assessment report from a qualified meteorologist, or (c) both." Therefore, one years worth of wind data is not a necessary requirement. Bidders are required to provide a 12x24 standard matrix for their generation profile, which is a standard requirement in renewable RFP processes. In comment #30, UPC states that producers can provide a general summary or matrix to adequately characterize the resource. If a project sponsor has collected wind data on its site and can effectively utilize this data to more accurately determine its generation profile with more certainty, the evaluation process would more highly rank that project from a project viability standpoint because it would be expected there would be less risk with projected output from this project.

Likewise, UPC argues that the engineering and design detail required at this stage also seems excessive since the contractor may not have been selected and equipment has not yet been competitively bid. Again, Section 10 of the Response Package asks for a "reasonable but preliminary" engineering plan which does not require the bidder to define the equipment to be used at this point, but only the equipment to be considered.

Bidders need to perform their own assessment of the level of preliminary engineering or project development at the time they submit their proposals. If Bidders do not have some of the information requested, they should provide what is available and explain what their plans are for further progress. Hence, developers who have made more development progress will generally receive a better non-price evaluation. Given that the Company will rely on the output from any facility that it would enter into a contract with, the relative ability of a project to be successfully developed, constructed and operated is important in the project evaluation.

Bidders should also note that if any information requirements in the Response Package are not pertinent to the specific type of project or technology proposed, the Bidder should so state in its response.

Revisions to the RFP: HECO has provided the following clarifications acknowledging the preliminary nature of the information that may be submitted with a Bidder's proposal.

- In Section 6.1 of the Response Package, Bidders are requested to provide a 12x24 matrix of their energy generation profile. Bidders should also provide an explanation as to how the data was prepared as well as the information on which it was based. The Bidder should also indicate which performance standard/price scenario(s) the 12x24 matrix applies to, along with a description as to how it may vary, if at all, for other bid scenarios.
- See revisions to Section 10 of the Response Package.
- In Section 7.12, HECO has revised the request for financial pro forma information from the Bidder to use the information for project viability assessment only. The request for pro forma information may be required for short-listed bidders only after notification of acceptance on the short list.
- For Section 15.1 (Single line diagram), the preliminary nature of the single line diagram submitted with the Bidder's proposal is acknowledged.

11. **Summary of Bidder's Comment:** C&C notes there is a discrepancy between Section 3.m of Appendix B to the Draft PPA and Section 4 of the RFP Appendix B. (C&C Comment D.13)

Company's Response: C&C is correct. The RFP Appendix B pricing scenarios should reflect "overfrequency" scenarios.

Revisions to the RFP: Corrections per above have been made to the RFP Response Package, Section 4.

12. **Summary of Bidder's Comment:** What is the proxy capacity charge and is it the same for all technologies? (Technical Conference Q.24)

Company's Response: The proxy capacity charge used for the imputed debt calculation is $136/kW-yr, subject to update, and is the same for all technologies.

Revisions to the RFP: None.

Comments on the Model PPA Document

Issue: Definitions

13. **Summary of Bidder's Comment:** Company Dispatch is irrelevant for as-available resources. (UPC Comment No. 20)

Company Response: This provision simply defines the Company's sole and absolute right to control, from moment to moment, through supervisory equipment, or otherwise, and in accordance with Good Engineering and Operating Practices in the electric utility industry, the rate of delivery of energy offered by the Seller to the Company. HECO has clarified the definition of "Company's Dispatch" in the Model PPA to reflect the limitations on the ability of intermittent renewable energy generators to increase output on demand.

Revisions to Model PPA: Modification of the definition of "Company's Dispatch."

14. **Summary of Bidder's Comment:** Can the In-Service Date be later than Commercial Operation Date? (UPC Comment No. 21)

Company Response:

Yes. The In-Service Date can be later than the Commercial Operation Date. The In-Service Date requires that both the Acceptance Test and Control System Acceptance Test(s) for all generating units are deemed by the Company to have been successfully completed, whereas the Commercial Operation Date can be achieved when, among other factors, generating units representing 80% of the Facility's Capacity have passed Control System Acceptance Tests. We have reviewed the Model PPA and have replaced "In-Service Date" with "Commercial Operation Date" in sections of the Model PPA where the appropriate date for contractual purposes should be the Commercial Operation Date.

Revisions to Model PPA: "Commercial Operation Date" replaces "In-Service Date" in various sections of the Model PPA (see Section 2(b), Appendix A, Section 7, Appendix B, Sections 1 and 2, and Appendix C, Section 1).

Issue: Section 2 Purchase and Sale of Energy - Price/Volume Adjustment Provisions

15. **Summary Bidder's Comments:** Generators should not be paid less for energy that is produced in quantities substantially above projections; Annual Contract Energy should not be reduced based on subpar performance. Underproduction and overproduction limits are relevant to firm power contracts, but as-available resources involve greater variability, and supply contracts need to allow for a wider range of output. The Annual Adjusted Energy should take into account outages on HECO's transmission system and scheduled maintenance. (UPC Comment Nos. 18 and 23, C&C Comment D.2)

Company Response: These provisions provide incentives for generators to provide reasonable estimates of annual energy production for both evaluation and contracting purposes and to allow the Company to plan its procurement activities to ensure it can meet the RPS requirements in a cost effective manner. Based on the mechanism proposed by HECO, only if actual energy production is substantially more than projected or substantially less than projected on a continuous basis would there be any significant impact on revenues to the generator. Initially, only actual energy production that is over 120% of Annual Contract Energy (projected amount) on an annual basis (not each month) would be subject to a reduced price of 75% of the contract price. All energy produced up to the 120% cap would be paid at the contract price. Thus, a bidder is given incentive to develop reasonable estimates of its expected annual energy production. If the Bidder actually produces more that 120% of the expected annual energy, HECO's customers will share in the benefit since the price paid for the excess energy would be lower.

HECO's proposal to reduce Annual Contract Energy for subpar performance was based, in part, on the different market structure in Hawaii than on the mainland where some model PPAs have guaranteed energy production requirements, where the failure to satisfy the minimum requirements subject the Seller to being responsible for the payment of liquidated damages. Because of the absence of a market in Hawaii, it would be difficult to identify the appropriate level of liquidated damages for a Seller's failure to meet minimum energy output requirements. Therefore, HECO did not want to impose liquidated damages for subpar performance. As a result, HECO decided to revise the quantity rather than price in case of continuous subpar performance. Thus, the Annual Contract Energy would be reduced and payment bandwidths would be changed slightly. HECO notes that the adverse consequences to bidders who fail to perform as

expected based on these provisions in contracts on the mainland would likely be more significant than the adjustments proposed by HECO.

HECO will maintain the price/volume adjustment provisions included in the contract. Again, bidders could suggest alternative mechanisms in their red-lined contracts. HECO agrees that the calculation of Annual Adjusted Energy should take into account certain circumstances in which energy is not delivered or is curtailed. This will be accomplished in the revised Definition of Annual Adjusted Energy that will appear in the final version of the Model PPA. HECO will not include an adjustment for scheduled maintenance since scheduled maintenance is under the control of the bidder and should be included in the bidder's estimated of Annual Contract Energy.

In addition, HECO and the Seller will be entering into a long-term PPA pursuant to which HECO will be acquiring the renewable energy and renewable energy attributes that are necessary for it to meet not only the current RPS, but any revised RPS that may be established during the term of the contract, including any requirement that may be established as a result of the 70% Clean Energy Initiative announced by the State of Hawaii and the U.S. Department of Energy) and any Greenhouse Gas ("GHG") emissions reductions targets that may be set as a result of Act 234 (Haw. Leg. 2007) or national legislation. HECO is not merely purchasing energy to replace energy that would otherwise be generated from firm capacity generating units – it is acquiring renewable energy resources.

Sellers entering into such a long-term contract will enjoy curtailment priority over later approved PPAs, which will affect the prices and terms of the later PPAs, and the ability of later project developers to finance their projects. HECO's ability to acquire replacement energy to meet its RPS and GHG emissions reductions obligations will be substantially limited by its purchase obligations under the PPAs. Thus, it is essential that the Sellers meet reasonable performance targets, as long as the PPAs are in effect. If the performance targets are not met, then the curtailment priority needs to be revised to reflect the lower level of Seller's output, so that HECO will be in a better position to encourage the development of additional renewable energy resources through new PPAs.

HECO will maintain the price/volume adjustment provisions included in the draft Model PPA. However, the calculation of Annual Adjusted Energy will be revised to take into account certain circumstances in which energy is not delivered or is curtailed.

Revisions to the Model PPA: The Definition of Annual Adjusted Energy will be revised in the final version of the Model PPA.

Issue: Section 2 Test Power Price

16. **Bidders Comments:** The Bidder should be paid 100% of the contract price, not 75% of the contract price for test energy. After Commission approval of the PPA, the developer should receive the full value of the energy accepted by HECO during project commissioning and prior to the Non-Appealable Commission Approval Order Date. (C&C Comment D.3, UPC Comment No. 23)

Company Response: The reduced payment (i.e., 75% of the first year Contract Price) reflects the lower value of the power because of lower project reliability and uncertain output since the project has not yet reached commercial operation. On the mainland, the price of this power may be based on a market based energy price or some pre-established price, but such a market price does not exist on Hawaii. However, the value of 75% of contract price has been used in other contracts we are familiar with. In addition, in many cases, the test power price is much lower than the contract price.

In addition, it is important that (1) the Control System Acceptance Test period be limited, so that the control system, pursuant to which HECO controls the impact of the as-available energy resource on its system, is fully operational, and (2) the period in which additional units are integrated into the system be minimized, because of the disruptions this involves. Thus, the Seller has an incentive to expeditiously achieve the Commercial Operation Date, so that it will be paid the full energy rate. Since the term of the PPA extends for 20 years from the Commercial Operation Date, the Seller will have 20 years of energy sales at the full PPA price.

HECO feels the model PPA's provisions related to price of test power are reasonable and no revisions are necessary.

Revisions to the Model PPA: None.

Issue: Section 6(d) – Forecasting – Outage reporting requirements

17. **Summary of Bidder's Comment**: The draft PPA proposes reporting all generating outages, but it is not practical to report reductions in every wind turbine, every time wind decreases. Instead, the PPA could require Producer to report outages that represent 10% or more of capacity. (UPC Comment No. 25)

Company's Response: The Commenter did not provide a specific reference in the draft PPA for this comment, but it appears to relate to Section 6(d) which provides for notification by Seller if its equipment will be taken out of service or will be returned to service which may affect its delivery of energy. By its terms, Section 6(d) does not apply to reductions in turbine output when the wind decreases.

Revisions to Model PPA: None.

Issue: Section 8 Continuity of Service - Curtailment

18. **Summary of Bidder's Comments**: Section 8(a) and 8(b) are in conflict. Section 8(a) states in part: The Company shall not be required to purchase energy during any period during which, due to operational circumstances, purchases from the Seller will result in costs greater than those which the Company would incur if it did not make those purchases, but instead generated an equivalent amount of energy itself. This provision is in direct conflict with the following Section 8(b) on the same page: Section 8 of this Contract is not intended to permit the Company to require the Seller to curtail, interrupt or reduce deliveries of energy based on the Company's economic dispatch (for example, as a consequence of the Company's filed Avoided Energy Cost Data being lower than the applicable price per MWh paid to the Seller under this Contract, or to make purchases of less expensive energy from a Qualifying Facility). (C&C Comment D.4)

Company Response: Curtailment for operational reasons (such as "excess energy" situations) generally is addressed in Section 8 of the Model PPA.

As is explained further in response to Question 8, curtailment for operational reasons arising out of the need to maintain the stability and reliability of HECO's Oahu electrical system is addressed in the first paragraph of Section 8(a) of the Model PPA.

The second paragraph in Section 8(a) of the Model PPA deals with a specific condition addressed in the rules promulgated by the Federal Energy Regulatory Commission ("FERC") to implement the Public Utility Regulatory Policies Act of 1978, which also can occur during light loading periods. According to FERC's Commentary regarding 18 CFR §292.304(f), if a utility operating only base load units during these periods were forced to cut back output in order to accommodate purchases from QFs, these base load units might not be able to increase their output level rapidly when the system demand later increased. As a result, the utility would be required to utilize less efficient, higher cost units with faster startup to meet the demand. The result would be the utility would incur greater costs than it would have had it not purchased energy or capacity from the QF. The result of such a transaction would be that rather than avoiding costs as a result of the purchase from a qualifying facility, the purchasing electric utility would incur greater costs than it would have had it not purchased energy or capacity from the qualifying facility. A strict application of the avoided cost principle set forth in this section would assess these additional costs as "negative avoided costs" which must be reimbursed by the qualifying facility. To avoid this situation, the FERC rule (18 CFR §292.304(f)), and comparable Hawaii PUC rule (HAR §6-74-24), allow curtailment in this situation.

Section 8(b) provides that:

> Section 8 of this Contract is not intended to permit the Company to require the Seller to curtail, interrupt or reduce deliveries of energy based on the Company's economic dispatch (for example, as a consequence of the Company's filed Avoided Energy Cost Data being lower than the applicable price per MWh paid to the Seller under this Contract, or to make purchases of less expensive energy from a Qualifying Facility).

Unit dispatch generally refers to the control, from moment to moment, through supervisory equipment, or otherwise, the rate of delivery of energy of generating units that are connected to the grid. Thus, Section 8(b) addresses the dispatch of units that are connected to the grid. The second paragraph of Section 8(a) generally deals with the decision to connect units to the grid, which is referred to by HECO as unit commitment.

Certain firm generating units (referred to as "must run units") are kept on-line at all times in order to provide system stability and reliability, and to make sure that on-line generation will be sufficient to serve customer load. These units generally were not designed to allow them to be cycled on and off line on a daily basis (although they occasionally must be taken off line for scheduled overhauls).

Revisions to the Model PPA: None.

19. **Summary of Bidder's Comment**: The PPA should be amended to require that any curtailed power also be purchased at 75% of the contract price. (UPC Comment No. 24)

Company Response: Section 8(a) of the draft PPA sets forth those conditions under which the Company may require the Seller to temporarily curtail, interrupt or reduce deliveries of energy. The primary purpose of HECO's right of curtailment under Section 8(a) is not to limit payments to the Seller. Rather, Section 8(a) makes clear that, under certain specified operating conditions, HECO's accepting energy from the Seller's Facility would be impractical or inconsistent with Good Engineering and Operating Practices. As noted in Section 2(e) of Appendix B to the draft PPA, "[T]he Company may at times have limited ability to integrate energy produced by the Seller into the Company's System for engineering and/or operating reasons and may be required to curtail energy deliveries by the Seller." HECO should not be required to pay any amount for energy that it cannot accept because of its own legitimate, temporary operational requirements, or because the operation of Seller's Facility does not comply with Good Engineering and Operating Practices. By definition, curtailed energy is energy that is not delivered by Seller or purchased by HECO.

Revisions to Model PPA: None.

20. **Summary of Bidder's Comment**: These questions were asked during the Technical Conference regarding curtailment.

A. What priority does HECO use to curtail?
B. Is there any limit to HECO's curtailment i.e., convenience versus economic versus emergency?
C. Is there a limit to the number of curtailment hours per year?
D. What will be the notice period for curtailment?

Company Response:

Curtailment Background

Curtailment for operational reasons (such as "excess energy" situations) generally is addressed in Section 8 of the Model PPA. Curtailment to protect the Company's personnel, the integrity of the Company's System or the Company's other customers' electric service is addressed in Section 9 of the Model PPA. Seller's Facility requirements to enable the Company to exercise its curtailment rights generally are addressed in Section 1.g of Appendix B of the Model PPA. Curtailment priority generally is addressed in Section 2.e of Appendix B of the Model PPA. These provisions have been incorporated in other Hawaii PPAs with as-available energy producers.

Curtailment for operational reasons arising out of the need to maintain the stability and reliability of HECO's Oahu electrical system is addressed in the first paragraph of Section 8(a) of the Model PPA. For example, the amount of the system load (including system line losses) must be balanced by the net output of the generating units delivering energy to the system. Certain firm generation (referred to as "must run units") are kept on-line at all times in order to provide system stability and reliability, and to make sure that on-line generation will be sufficient to serve customer load. Additional firm generation may be "cycled" on and off during the day as the system load grows, and then declines after the peak load for the day. As-available generation also may be providing energy to the system. The firm generating units have minimum output levels, which may reflect technical minimums, contract minimums for firm capacity PPAs, operating and regulating reserve requirements, or day-to-day operating constraints (such as those that may occur when a transmission line is unavailable). At times, more energy may be available than is required to meet the demand. Under these circumstances, which would be expected to occur most often during light load periods, the Model PPA recognizes that the utility will need to curtail the "excess energy" made available from as-available energy sources.

The amount of "excess energy" will depend upon various factors, such as:

- System load conditions
- Minimum generation loads of must run units
- Generation scheduling to meet system load requirements
- Contract minimums for firm capacity or scheduled energy PPAs

- Output from other as-available producers
- Contract curtailment priorities for as-available producers
- Operating and regulating reserve requirements
- Day-to-day operating constraints

As certain of these factors change during the day, the amount of excess energy that must be curtailed will also change.

Before curtailing as-available producers during system off-peak and other excess energy periods, HECO plans to reduce output of firm capacity units, taking into account

- Minimum loads for baseloaded units
- Contract minimums for firm capacity or scheduled energy PPAs
- Operating and regulating reserve requirements
- Day-to-day system constraints

Section 8(c) of the Model PPA provides as follows:

> The Company shall take all reasonable steps (such as reducing the output of base-load generation, including its own base-load generating units, during light loading conditions, taking into consideration factors such as the need to maintain system reliability and stability under changing system conditions and configurations, the need for downward regulating reserves, the terms and conditions of power purchase agreements for base-loaded firm capacity or scheduled energy, and the normal minimum loading levels of such units) to minimize the number and duration of curtailments, interruptions or reductions, subject to and in accordance with Appendices B. For purposes of this Section 8, as of the Execution Date, light loading conditions typically occur between the hours of 12:00 midnight and 7:00 a.m., but the timing of such conditions may change over time.

Curtailment of as-available producers in excess energy periods generally will be based on contract curtailment priorities. Curtailment under other circumstances generally will depend on the reason for the curtailment - for example, if a facility is not operating in compliance with compliance standards or good engineering and operating practices.

A. Please refer to Section 2.e(2) of Appendix B to the draft Model PPA which provides, in pertinent part, as follows:

> When the Company determines that curtailment of energy becomes necessary for reasons other than those directly attributable to the Seller's Facility, curtailments shall be made to the extent possible in reverse chronological order of the chronological seniority dates determined by the Company for the contracts, with deliveries under the contract with the most recent chronological seniority date being the first curtailed, and deliveries under the contract with the earliest chronological seniority date being the last curtailed.

B. Section 8(a) of the Model PPA describes the circumstances under which HECO may require the Seller to curtail, interrupt or reduce deliveries of energy. Model PPA Section 8(b) provides that Section 8 of the PPA is not intended to permit HECO to require the Seller to curtail, interrupt or reduce deliveries of energy based on HECO's economic dispatch. Model PPA Section 8(c) provides that HECO will take all reasonable steps to minimize the number and duration of curtailments, interruptions or reductions. Section 9 of the Model PPA permits HECO to curtail Seller's Facility for the safety of HECO's personnel and system safety and to prevent adverse effects on its customers. Please refer to Model PPA, Appendix B, Section 2.e regarding curtailment operating procedures. See also Model PPA, Appendix B-1 which sets forth Performance Standards to be used, in part, to govern actions by HECO to curtail the electric output of the Seller's Facility for purposes of maintaining power quality on the Company's System. Please refer to the Curtailment Background introduction to this response.

C. The draft Model PPA does not limit the number of curtailment hours per year. However, please refer to Section 8(c), quoted above, which provides that the Company will take all reasonable steps to minimize the number and duration of curtailments.

D. There is a 24-hour prior oral or written notice requirement when the Company is not required to purchase energy during any period which, due to the operational circumstances described in the second paragraph Section 8(a), purchases from the Seller will result in costs greater than those which the Company would incur if it did not make those purchases, but instead generated an equivalent amount of energy itself. See draft Model PPA Section 8(a). There are no other conditions under which the Company is required to provide prior notice for curtailment. See also Model PPA, Appendix B, Section 2.e regarding operating procedures for curtailment.

Revisions to the Model PPA: None.

Issue: Section 9 Personnel and System Safety – Right to curtail or disconnect

21. **Summary of Bidder's Comments**: Without limiting the right of HECO to order the emergency shutdown or closure of an energy facility for safety reasons, any developer should have an opportunity to seek recovery of economic damages if a subsequent investigation by an independent observer determines that the closure was not warranted or that permanent closure could be averted with appropriate modification of equipment or procedures. Additionally, HECO should not have the unilateral right to disconnect the facility if HECO determines that the facility might "have an adverse effect on the Company's other customers' electric service." That is far too broad a standard and too draconian a response before negotiations to resolve the particular concern. In both cases, the dispute should be

resolved by the arbitration process established by Section 28 of the Draft PPA. (C&C Comment D.5)

Company Response: The first sentence of Section 9 of the Model PPA provides that:

> Notwithstanding any other provisions of this Contract, if at any time the Company reasonably determines that the Seller's Facility may endanger the Company's personnel, and/or the continued operation of the Seller's Facility may endanger the integrity of the Company's System or have an adverse effect on the Company's other customers' electric service, the Company shall have the right to curtail or disconnect, as determined in the sole discretion of Company's System Operator, the Seller's Facility from the Company's System.

As stated, the determination that the Seller's Facility may endanger the Company's personnel, or that the continued operation of the Seller's Facility may endanger the integrity of the Company's System or have an adverse effect on the Company's other customers' electric service, must be reasonable. What is discretionary is the election by the system operator to curtail or disconnect under such circumstances. This same provision is found in other Hawaii as-available energy PPAs approved by the PUC.

Moreover, Section 9 of the draft Model PPA is consistent with Good Engineering and Operating Practices which require that the Seller's "Equipment is operated in a manner safe to workers, the general public…." See definition of Good Engineering and Operating Practices in the Definition section of the draft Model PPA. Section 9 is also consistent with PPA's used in other jurisdictions. The Public Service Company of Colorado ("PSCo") Model Renewable Energy Purchase Agreement For Intermittent Resources allows the utility to curtail delivery of renewable energy resulting from an emergency, which includes, "any abnormal interconnection or system condition that requires automatic or immediate manual action to prevent or limit loss of PSCo's load or generation supply, that could adversely affect the reliability of the PSCo system or generation supply, that could adversely affect the reliability of any interconnected system, or that could otherwise pose a threat to public safety." See PSCo PPA Section 8.2(D)(1) and definition of "Emergency" in Section 1.4.

The draft Model PPA does not provide for a subsequent investigation by an independent observer of HECO's determination made in accordance with Section 9. However, Seller would have access to the arbitration process under Section 28 of the PPA if Seller believed that HECO had breached its contractual obligations to Seller.

Revisions to Model PPA: None.

Issue: Section 12 Term – Right to cancel PPA if appeal extends beyond 18 months

22. **Summary of Bidder's Comments**: Developers should not be required to pay the costs of developing an entire project through all environmental and regulatory approvals and then subject themselves to the risk that HECO may cancel the project if judicial appeals extend beyond 18 months, even if the project is operating. If a project receives all approvals, and the developer wishes to continue to defend the approvals through the appeals process during an injunction blocking operation, then HECO should not be allowed to terminate the project until at least 36 months have passed. Also, the last sentence of Section 12 (c) of the model PPA appears to be incomplete or has an error. (C&C Comment D.6)

Company Response: A more likely outcome of the scenario proposed in the comment is not that HECO will cancel the project, but that the Seller's financing parties will not want to proceed with the project if appeals of environmental and regulatory approvals extend beyond 18 months.

Moreover, draft Model PPA section 12(c) provides alternatives to terminating the contract in the event an appeal of PUC Approval Order is not concluded within 18 months. If PUC approval (i.e., a PUC Approval Order) is not obtained within 12 months of the submittal of contract(s) to the PUC, either party may declare the contract null and void, or the parties may agree to a longer period. If the PUC Approval Order is appealed, and if a Non-appealable PUC Approval Order is not issued within 18 months of the original submittal of contract(s) to the PUC, either party may declare the Contract null and void, or the parties may agree to a longer period. Model PPA Section 12(c) further provides that, if the PUC Approval Order is appealed, the parties shall meet within six months of the PUC Approval Order date and may agree to waive the requirement of obtaining a satisfactory Non-appealable PUC Approval Order, and the Seller may elect to proceed with its performance solely at its own risk.

Bidders must evaluate and consider their own risks if they elect to proceed with commitments in advance of the issuance of a PUC Approval order, or, if there is an appeal, a Non-appealable PUC Approval Order.

Regarding the comment on the last sentence in section 12(c), there is no error in that sentence.

Revisions to Model PPA: None.

Issue: Section 13 Construction Milestones

23. **Summary Bidder's Comments:** One of the proposed milestones is the "permit application filing date." It is not clear which of the many required permits this refers to. Also, milestones might not be necessary in the PPA, since there doesn't

seem to be a mechanism to enforce them. It may be less burdensome to ask for periodic progress reports from the Producer. (UPC Comment No. 22)

Company Response: The permit application filing date is a Reporting Milestone contained in Appendix F. This applies to all permits required for the construction and operation of the proposed project. HECO and a bidder may specify in a PPA with regard to a particular project the specific permit applications for purposes of this milestone. The only Guaranteed Project Milestone is the Commercial Operation Date as indicated in Appendix E.

Revisions to Model PPA: None

Issue: Section 13(e) and 13(f) Construction Milestones- Delay Damages

24. **Summary of Bidder's Comments:** The Draft RFP offers no rationale for delay damages nor an indication of any cap on penalties. The Draft RFP also proposes a guaranteed COD based on milestones and imposes an additional penalty if milestones are not met. In both cases, this seems unnecessary, as the Producer is losing considerable income for every day, week or month of delayed operation. This concept may have been borrowed from a firm energy contract.

Also, Section 13(f) of the PPA indicates the daily draw at $167/MW/day for each day of delay in COD. There seem to be conflicting references as to whether this is based on 180 days or 90 days.

It is unfair to begin assessing the developer damages one year after a valid Force Majeure event if the event persists despite diligent efforts by the developer to address the Force Majeure obstacle. A more reasonable trigger for an ongoing Force Majeure event with diligent efforts by a developer is at least three years. (UPC Comment Nos. 4 and 26, C&C Comment D.7)

Company Response: HECO notes that other RPS RFPs contain delay damage provisions in their model PPA (e.g. California utilities, etc.). Such a mechanism provides an incentive for timely performance and a disincentive for tardy performance or failure to complete their project when required. The Company has attempted to provide a reasonable balance by imposing Daily Delay Damages only if the Bidder misses the Commercial Operations Date, after a reasonable cure period. Delay damages are also appropriate because HECO may incur financial penalties if the Bidder fails to meet its Commercial Operations Date, and, in any event, it is appropriate to include such provisions to protect the interests of HECO's customers.

Section 13(f) of the draft Model PPA provides for a maximum amount of Daily Delay Damages. In the draft Model PPA, this amounts to $30,000/MW of bid capacity. Delay damages would commence following a 90-day cure period.

Also, offering a one-year force majeure extension is reasonable and consistent with industry standards. The three year force majeure extension is not consistent with industry standards and we have frankly not seen any such examples.

Revisions to the Model PPA: Clarifying revisions have been made to Section 13 of the Model PPA.

Issue: Section 14 Credit Assurance and Security - Amounts and Type of Security/Liquidated Damages

25. **Summary of Bidder's Comments:** Several of the draft RFP's financial requirements seem excessive. Development and operational security levels appear unreasonable given the nature of the resource. The concept of as available energy is payment for performance, and it seems unnecessary that a Renewable Energy Producer must post security as an additional penalty for non-performance. The utility should also be required to post analogous credit security as a means of balancing considerations for both parties. The provisions of the draft PPA requiring the developer to give HECO a security interest and mortgage lien in the project will preclude the developer from obtaining financing for the project. (UPC Comment Nos. 1, 2, and 27, C&C Comment D.8)

Company Response: HECO and the Seller will be entering into a long-term PPA pursuant to which HECO will be acquiring the renewable energy and renewable energy attributes that are necessary for it to meet not only the current RPS, but any revised RPS that may be established during the term of the contract, including any requirement that may be established as a result of the 70% Clean Energy Initiative announced by the State of Hawaii and the U.S. Department of Energy) and any Greenhouse Gas ("GHG") emissions reductions targets that may be set as a result of Act 234 (Haw. Leg. 2007) or national legislation. HECO is not merely purchasing energy to replace energy that would otherwise be generated from firm capacity generating units – it is acquiring renewable energy resources.

Sellers entering into such a long-term contract will enjoy curtailment priority over later approved PPAs, which will likely affect the prices and terms of the later PPAs, and may affect the ability of later project developers to finance their projects. HECO's ability to acquire replacement energy to meet its RPS and GHG emissions reductions obligations will be substantially limited by its purchase obligations under the PPAs. Thus, it is essential that the Sellers meet reasonable performance targets, as long as the PPAs are in effect.

The increase in operating security over the last five years of the contract is important to ensure that the Seller continues the required maintenance of the facility even after the financing parties have been satisfied, which typically ends approximately five years prior to contract expiration. For all the foregoing

reasons, HECO is not proposing any revision to these terms of the draft PPA. However, HECO is revising the Model PPA to clarify that when the Seller provides Operating Period Security of $40/kW multiplied by the Original Contract Capacity following the Commercial Operation Date, the Development Period Security of $30/kW multiplied by the Original Contract Capacity will be returned to Seller.

HECO does not agree that both the supplier and the utility should post security. First, it is not industry practice for the utility to post security. Second, the utility has an investment grade credit rating and with appropriate regulatory treatment, it should not be downgraded. By contrast, the contracting entity for any PPA would likely not be an investment grade entity but a special purpose entity established for the specific project.

Finally, contrary to C&C's suggestions, providing a utililty buyer a second liens/subordinated mortgage in a power plant project has not prevented sellers under other PPAs with similar provisions from financing their projects. In any event, HECO is clarifying that the model PPA provision under which Seller would provide a second lien/subordinated mortgage in the facility to HECO (Section 14(k)) is optional, consistent with Section 14 of Appendix B to the RFP.

Revisions to the Model PPA: It will be clarified (a) that when the Operating Period Security is provided by Seller, HECO will return Seller's Development Period Security and (b) the subordinated mortgage PPA provision is optional.

Issue: Section 15 Event of Default

26. **Summary of Bidder's Comments:** The model PPA's requirements that a Renewable Energy Producer meet 60% of guaranteed output seems unnecessarily restrictive for an as-available energy contract. Since the utility is only paying for output, and suffers no penalty if the Renewable Energy Provider fails to perform, this operational penalty seems unnecessarily punitive. This concept is also more appropriate to a firm power contract. (UPC Comment No. 5)

Company Response: To meet RPS goals HECO needs to count on the energy provided by these projects. As a result, adverse consequences to sellers for failure to perform are appropriate. Furthermore, the standard included in the PPA Section 15(b)(ii) is very lenient. An event of default can be declared only when the seller fails to deliver at least 60% of the initial Annual Contract Energy for three consecutive contract years. This requirement is much more lenient than provisions in other RPS contracts, including the utility contracts in California that have undergone intense regulatory scrutiny over several years.

Moreover, as noted in the Company's Response to number 13, above, HECO will be entering into a long-term PPA pursuant to this RFP to meet not only the current RPS, but any revised RPS that may be established by State or federal legislation during the term of the contract.

Revisions to the Model PPA: None.

Issue: Section 15(b) Events of Default

27. **Summary of Bidder's Comments:** The Commercial Operation Date is set when 80% of the wind turbine generators are released. This time at 80% also should not count against a Renewable Energy Producer in computing the Adjusted Energy minimum 60% requirement. (UPC Comment No.19)

Company Response: See response to number 14, above.

Revisions to Model PPA: None.

Issue: Section 15 Event of Default – Force Majeure

28. **Summary of Bidder's Comments**:

A. Force Majeure should be a valid excuse for breach or default under subsections 15(b) (ii) through (v), inclusive.

B. Under PPA Section 13(c), HECO would grant a developer 365 days after failure to perform due to a Force Majeure event before commencing assessment of Daily Delay Damages, so how can HECO here propose termination of the contract after just 180 days after a Force Majeure event? If a developer is making diligent efforts to cure a breach or default due to a Force Majeure event beyond developer's control, then developers should have at least three years before an Event of Default results.

C. Absent Force Majeure, a developer should have at least 365 days to cure a breach or default provided the developer is making diligent efforts to cure the breach or default.

D. This section should also allow three years before termination of the PPA for Force Majeure events beyond the developer's control. (C&C Comment D.9)

Company Response:
Force Majeure does not apply to Sections 15(b)(ii) and 15(b)(iv).

Section 15(b)(iii) in the final version of the Model PPA will be revised to make explicit reference to the cure period provided in Section 13(e) of PPA, namely 365 days. Also, Sections 15(a)(v) and 15(b)(vii) of the final version of the Model PPA will be revised to change the maximum potential cure periods from 180 days to 365 days. With regard to the comment that a developer should have three years before an event of default or termination, please refer to HECO's response to number 12, above.

Revision to Model PPA: The final version of the Model PPA will be revised as explained above.

Issue: Section 21 Force Majeure – Force Majeure should be defined to include a volcano and appellate litigation by project opponents that delays the project.

29. **Summary of Bidder's Comments:** For facilities in Hawaii, "volcano" should be added to floods, earthquakes, hurricanes, or tornadoes", which is commonly included in Force Majeure provisions of Hawaii contracts. Excessively high winds and design flaws in major equipment should also qualify as Force Majeure. All developers should accept responsibility for obtaining all required permits and approvals for the project and any litigation by developers necessary to obtain such approvals should not constitute Force Majeure. However, if a developer does obtain all required approvals and an opponent appeals any such approval, then appellate litigation by project opponents that delays the project does meet the basic definition of "Force Majeure" in the Draft PPA because it is a "cause or event beyond the reasonable control of, and without the fault or negligence of the" developer. A judge or appeals court ordinarily would not issue an extraordinary ruling such as a restraining order or an injunction to block a project during an appeal of any such approval. Nevertheless, this subsection should be amended to apply only to "litigation or administrative or judicial action initiated by the developer". (UPC Comment No. 28, C&C Comment D.10)

Company Response: HECO is willing to add "volcanic activity" to Force Majeure events listed in Section 21(a) of the final version of the Model PPA.

It is not reasonable for a project to claim Force Majeure because of a major equipment design flaw. Wind equipment used by Seller should be able to meet the applicable technical requirements and the applicable site conditions based on wind studies for the project site.

HECO will not revise Section 21(b)(iv) of the Model PPA regarding Seller's inability to obtain Permits or approvals. It is the Seller's responsibility to obtain all necessary Permits and approvals. Delays in the permitting process are a known risk and are not entirely beyond the control of Seller as are other Force Majeure events. Prior to making a proposal, Seller should familiarize itself with

the permitting process and identify the risks attendant to that process, and Seller's proposal should take such risks into account.

Revision to Model PPA: HECO will revise Section 21(a) as indicated above.

Issue: Force Majeure event should extend the term of the PPA by the length of the force Majeure event.

30. **Summary of Bidder's Comments:** The Draft PPA states that it shall be for a duration of "at least 20 years". A project for a 20-year energy contract will be financed based on a 20-year revenue stream, and thus financing for a project under this PPA will depend upon 20 years of revenues. Since neither party shall be responsible for a Force Majeure delay, provided that the nonperforming party proceeds with reasonable diligence to remedy and resumes performance at the end of the delay caused by the Force Majeure event, then the term of the PPA should be extended by the duration of the delay caused by the Force Majeure event. As the parties to the PPA would want the benefit of the full term (e.g., 20 years) a Force Majeure event beyond either party's control should not shorten the term of the PPA. (C&C Comment D.11)

Company Response: As provided in Section 12(a) of the Model PPA, the Term of the Contract remains in effect for 20 Contract Years following the Commercial Operation Date. Therefore, any delays resulting from Force Majeure before the Commercial Operation Date will not deprive the Seller of the full duration of the 20-year Contract Term.

Typically, Force Majeure events do not extend the term of a power purchase agreement. Moreover, permitting the Term of the Contract to be extended after the Commercial Operation Date because of a delay or failure in performance caused by Force Majeure would be impractical. For instance, if Force Majeure caused an extended outage of one generating unit out of twenty total units in a project, it would not be reasonable to extend the Term of the Contract in such a circumstance.

Section 21(e)(i) of the Model PPA provides that, after the Commercial Operation Date, an event of Force Majeure shall not extend the Term of the Contract. However, this provision should not work to a Seller's detriment because the financing term for facilities constructed under power purchase agreements is typically less than 20 years.

Revision to Model PPA: None.

Issue: The developer should not have to pay any costs if HECO determines that performance standards should be revised at least five years after commencement of the PPA.

31. **Summary of Bidder's Comments:** In general, the performance standards review process set forth in Section 23 is inappropriate. There should at least be a minimal time period for which the current standards should apply. In lieu of the mechanism in the Model PPA, an independent third party should examine the production and supply issues and make recommendations to both parties. (UPC Comment Nos. 6 and 29)

Company Response: HECO believes that Section 23 of the draft Model PPA strikes an appropriate balance between HECO's need for flexibility to accommodate changing legal and regulatory requirements, as well as potential changes to the sources of generation on its system, and the Seller's concern basing it proposal on reasonably predictable costs. Section 23 also provides a thorough and reasonable process for resolving disagreements over changes to performance standards by providing for a qualified Independent Evaluator whose decision shall take into account, among other factors, pricing terms that incorporate the Performance Standards Pricing Impact. See Section 23(j)(iv). The definition of Performance Standards Pricing Impact in the draft Model PPA provides, in pertinent part, "Any adjustment in Contract pricing in $/MWh necessary to specifically reflect the recovery of the net costs and/or net lost revenues specifically attributable to any Performance Standards Modification necessary to comply with a Performance Standard Revision…." HECO believes that the draft Model PPA contains adequate protection for the Seller and, therefore, no revision is required.

Moreover, since HECO has no right to initiate the process for modification to the performance standards until five years after the Commercial Operation Date (Section 23(h)), there is a minimum period for which the performance standards set forth in the PPA will not change. While detailed provisions are set forth in the Model PPA to protect the interests of Seller, HECO believes it is important that it have the right to initiate the process for changes in performance standards after this minimum time period and that the contract provisions, in order to be effective, be mandatory and not merely advisory. As part of the process, HECO will be reviewing both supplier-side and grid-side measures; however, Section 23 provides a mechanism that will provide HECO with the ability to obtain an assessment of supplier-side measures from Seller and to effectuate necessary changes in performance standards in an equitable manner, which HECO believes to be important in terms of integrating renewable energy sources with its system over the term of the PPA.

Revision to Model PPA: None.

Issue: Sellers should not have to pay the costs of an Independent Evaluator retained as part of the performance standards review process.

32. **Summary of Bidder's Comments:** While in general the performance standards review process set forth in Section 23 is reasonable, the provision which provides for an allocation of costs of the Independent Evaluator between HECO and Seller (Section 23(j)(v)) is not reasonable. A developer who sets an initial price for sale of energy from its facility and agrees to comply with the performance standards in the initial PPA should not be required to pay any costs for revised performance standards later determined to be necessary by HECO, especially when HECO is allowed to propose changes to performance standards once every 12 months after the first five years. Alternatively, the threshold amount in Section 23(j)(v) should be set at $5 million per negotiation (C&C Comment D.12)

Company Response: The pertinent provision of the Model PPA allows a bidder to "fill in the blanks" regarding the allocation of costs for an Independent Evaluator between Seller and the Company. The commenter can address this matter in its markup to the Model PPA.

Revisions to the Model PPA: None

Issue: Request for As-Available Energy vs. Time-Differentiated Pricing

33. **Summary of Bidder's Comments:** There is an inconsistency between the RFP and PPA. The Draft RFP desires as-available energy as a fixed $/MWh price or escalated price, but the PPA refers to time-of-use metering and time-differentiated pricing. UPC questions if this is an oversight. (UPC Comment No. 3)

Company Response: The Model PPA will be revised consistent with a single energy price ($/MWh) for this RFP, as opposed to time-differentiated pricing (on-peak/off-peak).

Revisions to the Model PPA: Section 2(h) of the model PPA has been revised to delete the requirement for invoicing for on and off peak periods.

Issue: Section 20 – Third Party Sales

34. **Summary of Bidder's Comments:** There is no basis for restriction of the sale of a separate increment of energy from the subject facility to a third party, provided that Bidder can demonstrate that the facility will be operated in accordance with all HECO system integration requirements, including performance standards and provision for a gradual increase in energy provided to the grid. The RFP should not be biased against larger projects which have a potential to bring substantial cost-effective renewable energy to HECO ratepayers. (C&C Comment No. 4)

Company Response: There are technical reasons why Section 2(a) of the Model PPA requires Seller to deliver all of the Facility's Actual Output to HECO. Permitting Seller to sell a portion of the Facility's output to parties other than HECO, could present significant integration issues, especially if such third parties are connected to HECO's grid. In addition, permitting sales to third parties could interfere with HECO's dispatch and curtailment rights under the PPA. Moreover, there is no authority under Hawaii law for a Seller to sell energy directly to a State or federal agency. The Hawaii Public Utilities Commission has opened an Investigation specifically to examine the feasibility of implementing intra-governmental wheeling of electricity, Docket No. 2007-0176.

As previously stated, Bidders have the ability to take exception to specific provisions of the Model PPA and to make counter proposals.

Revisions to Model PPA: None.

Issue: Environmental Credits

35. **Summary of Bidder's Comments**: There is no legal or other legitimate basis for such credits to be automatically included with the sale. If the Company desires to acquire such credits, the pricing of energy should be adjusted to include the economic value of the credits or the parties should enter a separate agreement for the purchase and sale of such credits. (C&C Comment D.1)

Company response: HECO and the Seller will be entering into a long-term PPA pursuant to which HECO will be acquiring the renewable energy and renewable energy attributes (as may be reflected in Renewable Energy Certificates, or "RECs") that are necessary for it to meet not only the current RPS, but any revised RPS that may be established during the term of the contract (including any requirement that may be established as a result of the 70% Clean Energy Initiative announced by the State of Hawaii and the U.S. Department of Energy) and any Greenhouse Gas ("GHG") emissions reductions targets that may be set as a result of Act 234 (Haw. Leg. 2007) or national legislation.

The response to this question was provided on our website to respond to a Technical Conference question:

Under Hawaii Revised Statutes §269-92, HECO is required to meet Renewable Portfolio Standards, where of 10% of its net electricity sales will be from renewable energy by 2010, 15% of its net electricity sales will be from renewable energy by 2015, and 20% of its net electricity sales will be from renewable energy by 2020, and where renewable energy is as defined in HRS §269-91. When HECO purchases energy from a renewable energy independent power producer,

HECO must be certain that the purchase includes the renewable attribute or "REC" that would count toward meeting the RPS requirements

Revisions to Model PPA: None.

Comments on the Performance Standards in the Model PPA

36. **Summary of Bidder's Comment:** First, while HECO has provided good general data to describe Oahu grid assets and generation management, no specific data has been provided to demonstrate that the grid cannot accommodate any other down-ramp behavior other than the 2 MW/min. It appears that the present ability of the connected Oahu energy resources to provide ancillary services has not been calculated or optimized. Also, there is no recognition of the additional capability that can be obtained from new resources, both HECO-owned generation or purchased power. The existing and planned resources that are dispatchable capacity resources are inherently better suited for providing ancillary services than an "as-available" resource. Thus, the timing (year needed, or at some measure of wind's share of system generation) and the amount of a down-ramp limit are important to establish. (UPC Comment No. 31)

Company's Response: As HECO indicated in the March 14th technical conference, the 2 MW/min (as well as the 1 MW/min) ramp down limit was determined by HECO based upon (1) actual tests performed of its existing generating units' ramping capabilities, (2) an assumption on the amount of near term as-available projects that could become part of the HECO grid, including those resulting from this 100 MW RFP as well as from the grandfathered proposals, and (3) an allocation of the ramping capability to accommodate the potential as-available projects. The ramp rates were specifically NOT designed to accept the absolute maximum volatility in the short-term. Rather, the ramp rates recognize that future intermittent generation will be added to the system, and that standards developed today should not allocate all of the system's responsiveness today, such that none is left over tomorrow. It should be noted that the ramp rate performance standard is for each PPA, and multiple as-available PPAs will likely be in effect during the duration of any contract, resulting in cumulative ramp rates that HECO must mitigate on a constant basis.

With respect to UPC's assertion that "there is no recognition of the additional capability that can be obtained from new resources, both HECO-owned generation or purchased power," the amount of ramping capability and the timing at which this ramping capability can be acquired is speculative at this time.

Revisions to the Model PPA: None

37. **Summary of Bidder's Comment**: Requiring an "as-available" resource (such as wind) to perform to a specific down-ramp limit creates a requirement for additional capital equipment such as storage or spinning reserve, for each Producer. (UPC Comment No. 32)

Company's Response: The injection of power into the grid at fluctuating rates (as intermittent resources such as windfarms do) can cause grid instability. A means to mitigate the effects of these fluctuations, whether by the bidder providing energy storage or by the utility providing spinning reserve, must be provided to maintain grid reliability. The cost of these mitigation measures must be taken into account. Each bidder is encouraged to provide different pricing levels for varying degrees of mitigation. HECO will also examine the cost of providing additional spinning reserve to mitigate the effects of sustained ramp-down of intermittent resources. HECO will evaluate the trade-offs between Bidder-provided versus utility-provided mitigation measures.

Revisions to the Model PPA: None

38. **Summary of Bidder's Comments**: A battery or other improvement for ancillary services has benefits for the rest of the Oahu power system, if available for use by HECO for purposes other than the "as-available" generator's compliance with performance standards. These additional system-wide services should be recognized and the Producer compensated through pricing. (UPC Comment No. 33)

Company Response: Performance standards are necessary to maintain the reliability of the utility grid. As noted in HECO's response to Question 31, HECO determined the ramp rate limits through analytical means. Bidders' compliance with the performance standards will mean that more intermittent renewable resources can be integrated into the system over the long term. Each bidder should provide the means to comply with the specified performance standard and size its facilities accordingly. The RFP does not state that the bidder's facilities used to comply with performance standards will be available for use by HECO for other purposes.

Revisions to the Model PPA: None

39. **Summary of Bidder's Comments**: Battery storage in particular offers the HECO system and Oahu consumers unique advantages to increase reliability and improve transmission and distribution around the island, if the location and ownership of battery systems is more carefully planned and not simply made an outcome of the PPA. For example, if battery storage were placed on the east side of Oahu, or other areas where load grows but supply is not added, the battery can reinforce the transmission system. This will postpone the need for new

transmission to serve loads, and increase reliability. The PPA approach will not guide the battery placement in this way, and an opportunity for benefits may be lost. Those benefits will have to be obtained by HECO eventually to meet consumer needs, possibly at a greater cost with a redundant investment at a later date. (UPC Comment No. 34)

Company Response: The intent of this RFP is to seek and actually integrate new, non-firm renewable resources onto the existing HECO system in its current state. Within the context of this RFP, battery energy storage may be a technology considered by bidders to meet performance standard requirements at the point of interconnection in order to maintain grid reliability.

Revisions to Model PPA: None.

40. **Summary of Bidder's Comments**: A more favorable solution for consumers, HECO and Renewable Energy Producers, and a more cost-effective means for HECO to obtain the ancillary services that the draft PPA is requiring, is for HECO to identify the ancillary capabilities it needs, and use the most cost-effective means to obtain them. The draft PPA could require $25-50 million in additional capital that would be able to serve additional system-wide purposes if HECO procured the equipment. If the equipment were a battery energy storage system, which HECO has been considering, it could be located so as to improve the transmission system, and future transmission reinforcement could be avoided. Otherwise, in the context of acquiring renewable, "as-available" resources, the capital expenditure by each Renewable Energy Producer to meet their respective potential worst-case performance scenarios will lead to redundant capabilities that are unavailable to HECO or other system users. (UPC Comment No. 35)

Company Response: UPC states that "A more favorable solution…is for HECO to identify the ancillary capabilities it needs, and use the most cost-effective means to obtain them." That is precisely what HECO has done. Frequency regulation and load-following are ancillary services that are needed for proper operation of the grid. HECO has determined the ramping capability of its system to regulate frequency and follow load. HECO has used this information to determine appropriate ramp rate limits in the performance standards. HECO is requesting that bidders provide pricing for different levels of ramping capability. HECO will evaluate the bidders' cost to comply with these ramp rates against the cost of an alternative means to mitigate fluctuations, which may include providing additional spinning reserve.

Revisions to Model PPA: None.

41. **Summary of Bidder's Comments**: Finally, if a Renewable Energy Producer provides ancillary services to the HECO grid, over and above established

performance standards, such as voltage and frequency control, spinning reserve, etc., the Producer should be compensated for those services in addition to the contract payments for as-available power alone. We suggest adding a mechanism in the PPA to identify and pay for those additional benefits to the system. (UPC Comment No. 36)

Company Response: If the bidder desires to provide any ancillary services over and above those required by the RFP and model PPA, the bidder is free to identify those additional services and provide separate pricing for those services.

Revisions to Model PPA: None.

42. **Company Initiated Revision**: As a result of issues arising from existing PPAs, HECO has determined that the model PPA must specify the MVAR range that would be required of the Seller while connected to the system. This would enable the Seller to regulate the voltage regardless of their output at the time. Wind turbine suppliers have confirmed that their machines are capable of providing this capability. Specifying an MVAR range is preferred to specifying a power factor as the latter reduces the Sellers ability to regulate voltage as the Seller's output is reduced. The bidders should assume a MVAR range based on the PF range provided in the Model PPA at the rated output of their facility. The actual MVAR requirements will determined in the IRS process.

Similarly, the Company also has found that revisions are necessary for the under-voltage ride through provision in the model PPA. The additional clarifications are provided to capture the need to ride-through reclose events on the different voltage levels. The need to ride-through reclose events was discussed at the Technical Conference and sample clearing and reclosing times were given in the model PPA. As with the other under-voltage ride-through provisions in model PPA these requirements will be dependent on the location of the proposed facility and will be specified in the IRS process.

Revisions to Model PPA: See revisions to Model PPA Appendix B, Section 3.a. Voltage Regulation, 3.b. Reactive Amount, and 3.e. Undervoltage Ride Through.