

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF HAWAII**

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PUBLIC UTILITIES
COMMISSION

---- In the Matter of ----

PUBLIC UTILITIES COMMISSION

Instituting a Proceeding to Review
the Power Supply Improvement Plans
for Hawaiian Electric Company, Inc.,
Hawaii Electric Light Company, Inc.,
and Maui Electric Company, Limited.

Docket No. 2014-0183

**COMMENTS OF THE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM
ON THE HEI COMPANIES' POWER SUPPLY IMPROVEMENT PLANS**

AND

CERTIFICATE OF SERVICE

DAVID M. LOUIE
Attorney General

DEBORAH DAY EMERSON
GREGG J. KINKLEY
Deputy Attorney General
Department of the Attorney General
State of Hawai'i
425 Queen Street, 3rd Fl.
Honolulu, HI 96813
Tel. 808.586.1198

Attorney for the Department of
Business, Economic Development,
and Tourism

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**COMMENTS OF THE
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT, AND TOURISM
ON THE HEI COMPANIES' POWER SUPPLY IMPROVEMENT PLANS**

In accordance with the Hawaii Public Utilities Commission's ("Commission") September 12, 2014 Order Inviting Comment,¹ the Hawaii Department of Business, Economic Development, and Tourism ("DBEDT"), by and through its Director in his capacity as Energy Resources Coordinator, through the undersigned Deputy Attorney General, respectfully submits the following Comments addressing the HEI Companies'² August 26, 2014 Power Supply Improvement Plans ("PSIPs").

Hawaii's clean energy policies are designed accordingly to transform the most oil-dependent state in the nation to a national model for job creation, industrial transformation, environmental compliance, technological innovation, and ratepayer relief. DBEDT firmly believes that delay in pursuing or achieving the State's clean energy policy objectives, for whatever

¹ Docket No. 2014-0183, Order No. 32294, *Instituting a Proceeding to Review the Power Supply Improvement Plans for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited*. ("Order Inviting Comment").

² The "HEI Companies" are Hawaiian Electric Company, Inc. ("HECO"), Hawaii Electric Light Company, Inc. ("HELCO"), and Maui Electric Company, Limited ("MECO").

reason, has the effect of negating those objectives. In lieu of an approved Integrated Resource Plan (“IRP”), DBEDT appreciates that, in initiating the instant proceeding, the Commission not only took the initiative to require the HEI Companies to develop and file comprehensive power supply plans, but also took practical steps to avoid further delay by: (1) identifying for the HEI Companies “[t]he principal power supply challenge”³ and “the most pressing system level reliability, curtailment and operational challenges,”⁴ (2) specifying in great detail the plans, studies, analyses, evaluations, discussions, and considerations that the PSIPs should contain;⁵ and (3) requiring the HEI Companies provide the PSIPs within an expedited period (i.e., within 120 days).

DBEDT appreciates the HEI Companies’ intensive analysis and labor that went into the PSIPs, and acknowledges a vast improvement relative to the previous IRP submission as a roadmap and general guide on options for the future direction for the HEI Companies. While DBEDT’s Comments focus on power supply planning and the HEI Companies’ PSIPs, DBEDT submits that the PSIPs cannot and should not be viewed in the abstract. Accordingly, while DBEDT evaluated the PSIPs at the micro level by providing the context necessary to understand and evaluate discrete components of the PSIPs, DBEDT also evaluated the PSIPs at the macro level, i.e., through the lens of the State’s clean energy policy and directives.

³ Docket No. 2011-0206, Order No. 32053, *Instituting a Proceeding to Investigate the Implementation of Reliability Standards for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited*, at 83 (footnote omitted) (“Order No. 32053”).

⁴ *Id.* at 84.

⁵ *Id.* at 91-103; see also Docket No. 2011-0092, Order No. 32055, *For Approval of Rate Increases and Revised Rate Schedules and Rules*, at 87-93 (“Order No. 32055”); Docket No. 2012-0212, Order No. 31758, *For Approval of a Power Purchase Agreement for Renewable Dispatchable Firm Energy and Capacity*, at 112-120 (“Order No. 31758”).

DBEDT submits that it is the responsibility of the HEI Companies to present a clearly defined business case to serve as a baseline for its future investment and actions. While it need not be overly prescriptive, the business case should clearly demonstrate the ability to achieve a desired end-state objective (i.e., 60% RPS by 2030 at a certain discounted rate to a set baseline), articulate a decision framework, and identify assumptions and a timeline for actions. The most fundamental question the Commission should require the HEI Companies to answer in developing this business case is, “To what degree should the HEI Companies remain vertically-integrated utilities, or should they transition to a performance based regulation model focused on returning a profit based on the transmission and distribution (“T&D”) level services they provide to customers in an efficient modern grid network?” While the PSIPs and the Distributed Generation Interconnection Plan (“DGIP”) lay out new generation needs and infrastructure upgrades across the board, they are premised on making incremental changes to the traditional rate of return regulatory model which appear to retain, if not expand, the HEI Companies’ vertically-integrated structure.

DBEDT prefers rapid movement away from the “default” business model, and adjustment of the strategic approach identified in the PSIPs, as well as the DGIP, to be accompanied by a comparative analysis of options that result in a lowest cost or optimal approach towards the desired end-state objective. The incremental-improvement approach outlined in the PSIPs appears to diverge fundamentally from the Commission’s “Inclinations on the Future of Hawaii’s Electric Utilities”⁶ by maintaining the traditional vertically integrated model while not making significant progress on renewable penetration in the near term. By defaulting to incremental changes to the

⁶ See, e.g., Order No. 32052, Exhibit A (Commission’s Inclinations on the Future of Hawaii’s Electric Utilities).

traditional business model, DBEDT also believes that the HEI Companies are proposing an approach that is inconsistent with emerging best practices in the utility industry.⁷ While divergence from emerging industry practices may be justified, the HEI Companies have not offered that justification in their PSIPs.

DBEDT also questions several of the major assumptions underlying the PSIPs. For example, one solution presented in the PSIPs involves the unilateral procurement of liquefied natural gas (“LNG”) via International Organization for Standardization (“ISO”) containers. In the manner presented, the HEI Companies’ entry into the fuels business is tantamount to “doubling down” on a vertically integrated business model. If that, indeed, is the business model the HEI Companies intend to pursue, much more information is needed to support that decision. The HEI Companies have not shown how the ratepayer will be shielded from financial risks stemming from the importation and procurement of LNG. Without showing how the LNG proposal is intentionally designed to meet an end state that is defined by the State’s energy policies, the LNG proposal appears to be a way for the HEI Companies to solidify and expand the vertically-integrated business model for the primary purpose of benefitting the HEI Companies by increasing rate base on the generation side of the utility model.

Also, the HEI Companies’ conclusion about a grid tie interconnecting Oahu and Maui—i.e., that an inter-island grid tie is not cost effective—is not supported by detailed analysis. The HEI Companies’ conclusion also appears to be based on an overly optimistic and unsubstantiated assumption about developing and integrating high levels of renewable energy on Oahu. This

⁷ As discussed herein, DBEDT considers the New York’s “Reforming the Energy Vision,” or REV, initiative to be a progressive approach toward identifying and resolving issues that arise from the combination of technological innovations, increasing competitiveness of renewable generation resources, the need to replace aging infrastructure, and the need to address system security and resiliency. Further, DBEDT cites to Duke Energy’s interoperability initiative as another progressive initiative that could provide insight into issues the HEI Companies are facing.

assumption is a particularly glaring defect given HECO's inexcusable delays in interconnecting distributed photovoltaic ("DG PV") systems or in developing a transparent, efficient, and legitimate approval process for clearing the interconnection queue backlog and making future interconnections.

In addition, given the assumptions in the Preferred Plans, DBEDT understands that the HEI Companies' renewable energy goals will include integration of distributed generation ("DG"), a condition that enjoys strong public sentiment and is clearly in the public interest. However, the HEI Companies lack a tangible plan for clearing the interconnection queue, which detrimentally impacts DG PV. Rather than demonstrate that the Preferred Plans will actually enable the HEI Companies to achieve the levels of renewable integration specified in the Preferred Plans, the PSIPs and the DGIP appear to simply state goals about the levels of interconnections but then propose measures that may prohibit the HEI Companies from achieving those levels. Assuming, *arguendo*, that the Preferred Plans did demonstrate that the HEI Companies can achieve the projected levels of DG integration, the HEI Companies would have still failed to demonstrate that the Preferred Plans result in optimal alignment of customer interests, the HEI Companies' interests, and the State's energy policies. Notably, if the hypothetical level of the fixed demand charge contained in the DG 2.0 proposal actually materialized, it would likely be a non-starter in terms of customer interests by essentially eliminating the financial benefits of DG PV. This example demonstrates that a clear business case for the future is instrumental in aligning these interests.

Finally, DBEDT notes that, as presented, the HEI Companies' choice of the "Balanced Portfolio-DG 2.0" end state versus the "Balanced Portfolio-DG Heavy" end state is facially inconsistent with the State's policy of maximizing the integration of renewables in the most cost-effective manner. Presumably, the HEI Companies contend that the Balanced Portfolio-DG 2.0

end state is the most cost-effective way to achieve the State's policy objectives. However, that contention is unsupported by rationale or analysis. Consequently, the "Balanced Portfolio-DG 2.0" end state and the resulting Preferred Plans signal a lack of desire on the HEI Companies' part to meaningfully consider the Commission's Inclinations and adapt their business model accordingly.

On balance, DBEDT views the PSIPs as a step in the right direction; however, they lack a strategic framework that a clearly articulated business case would provide (i.e., the desired end-state objective, decision framework, assumptions and timeline to achieve that objective). Accordingly, DBEDT's review is limited to the macro and micro evaluations discussed above. While those evaluations identify promising aspects of the plans, DBEDT was not able to conclude that the PSIPs are consistent with the State's energy policy goals, directives, and objectives.

DBEDT envisions a Commission decision, or a series of decisions,⁸ that are based on a prompt and comprehensive review of the PSIPs, the DGIP, the Integrated Demand Response Portfolio Plan ("IDRPP"), work products developed in the Distributed Energy Resources docket ("DER docket") or by the Distributed Energy Resource Technical Working Group ("DER TWG"), the HEI Companies' smart grid plan,⁹ the Commission's investigation of an inter-island cable, electric vehicles ("EVs") and the EV time of use ("TOU") tariff filing, energy efficiency ("EE") measures, net energy metering, feed-in tariffs, decoupling, the Green Energy Market Securitization ("GEMS") program, and many other programs and initiatives as other important components of the State's efforts. DBEDT attaches hereto as Appendix 1 a "Utility Planning Map" that identifies

⁸ In reaching decisions on difficult issues, it may be necessary for the Commission to impose top-down regulation to address continuing, willful, or repeated failures. Cf. Docket No. 2011-0092, Order No. 31288, *For Approval of Rate Increases and Revised Rate Schedules and Rules*, at 5-6 (May 31, 2013) ("Order No. 31288").

⁹ "Smart Grid Roadmap and Business Case" (March 2014), available at:
<http://www.solari.net/documents/portfolio/Solari-Smart-Grid-Roadmap-&-Business-Case.pdf>.

these related efforts and illustrates the contours of the comprehensive review that DBEDT envisions.

DBEDT appreciates the opportunity to submit these Comments, and expresses its desire to work constructively to develop a strategy that aligns the State's policies, customer interests, and the HEI Companies' interests. In support of its Comments, DBEDT states as follows:

I. EXECUTIVE SUMMARY

A. The Commission Should Judge the PSIPs Based on Whether They Are Consistent with and Advance the State's Energy Policy.

The State's energy policy is designed to transform the most oil-dependent state in the nation to a national model for job creation, industrial transformation, environmental compliance, technological innovation, and ratepayer relief. DBEDT submits that the merits of the PSIPs—just like the HEI Companies' DGIP or *any* other action, utility business model, strategy, plan, initiative, tariff structure, proposal, policy, standard, etc.—must be evaluated on the basis of whether they are consistent with and advance that policy.

While the PSIPs naturally address complex technical, operational, and utility-planning matters, making the threshold determination of whether the PSIPs are consistent with and advance the State's energy policy is a fairly straightforward exercise. The State has established five guiding directives to help ensure whether particular actions or proposals are consistent with the State's energy policy: (1) developing a diversified energy portfolio that maximizes renewable generation; (2) building interconnected, modernized grids; (3) effectively balancing technical, economic, environmental, and cultural considerations; (4) being a "trail blazer" with regard to energy innovation; and (5) supporting market-led investments and pricing structures that align with the State's energy policy and economic goals. Whether, and if so, the extent to which, the PSIPs

satisfy each of these directives will weigh heavily on a final determination as to whether the PSIPs are consistent with and advance the State's energy policy.

In addition, in ordering the HEI Companies to develop the PSIPs, the Commission identified specific issues each PSIP was to address. For example, Order No. 32053 identified seven main components that must be included in HECO's PSIP, as well as 37 individual subparts that, "at a minimum," HECO was to include in its PSIP.¹⁰ Order No. 32055 enumerated similar matters that MECO was required to address, and Order No. 31758 did the same with respect to HELCO. Using language that parallels the State's energy policy, these detailed compliance directives were intended to ensure that the HEI Companies established power supply plans that demonstrate how the HEI Companies will accomplish the integration of substantial amounts of variable renewable energy resources, in a reliable and economic manner, while avoiding significant curtailments of existing or future renewable regeneration resources.¹¹ Given the harmony among these specific compliance directives and the State's energy policy and directives, determining whether the PSIPs actually complied with these specific compliance directives is integral to deciding whether the PSIPs are consistent with and advance the State's energy policy.

Also, the Commission's Order Inviting Comments on the PSIPs asked commenters to address whether the PSIPs provide clear, actionable strategies to lower and stabilize customer bills, integrate a diverse portfolio of cost-effective renewable energy projects, and operate each island grid reliably and cost-effectively with substantial quantities of variable renewable energy resources.¹² The Commission also asked commenters to address whether the PSIPs "contain

¹⁰ Order No. 32053 at 91-103.

¹¹ *Id.* at 91; Order No. 32055 at 87.

¹² Order Inviting Comments at 4.

appropriate strategies and timely action plans, supported by well-reasoned and compelling analyses, to achieve these goals on each island.”¹³ In effect, the areas identified in the Commission’s Order Inviting Comments constitute a subset of the specific compliance directives set forth in the orders requiring the HEI Companies to develop the PSIPs. Thus, there is a seamless congruence among these specific areas and the above-mentioned State policy and directives. Determining whether or how the PSIPs address each of these areas is part and parcel of determining whether the PSIPs are consistent with and advance the State’s energy policy.

1. DBEDT Cannot Conclude that the PSIPs Are Consistent with or Advance the State’s Energy Policy.

In evaluating the PSIPs, DBEDT was encouraged by certain components of the PSIP filings. For example, DBEDT supports the HEI Companies’ goals of reducing residential customer bills by more than 20% by 2030, and meeting more than 65% of power needs with renewable generation during that same period, although DBEDT is not entirely convinced that these goals go far enough or are based on the optimal portfolio.¹⁴ Nonetheless, while DBEDT has serious concerns as to whether the Preferred Plans are a viable means of achieving these goals, the stated goals themselves constitute a step in the right direction. In addition to and in coordination with the DGIP, the HEI Companies propose a number of T&D upgrades purportedly intended to achieve the HEI Companies’ stated goals. DBEDT welcomes discussion on the appropriate T&D upgrades with a focus on the HEI Companies’ role in investing in T&D infrastructure. As opposed to investments in fossil-fuel generation, investments in T&D infrastructure could be a cornerstone of a new utility business model.¹⁵ Regardless of the merits of any particular proposed distribution

¹³ *Id.*

¹⁴ *See, e.g.,* HECO PSIP, Transmittal Letter at 2.

¹⁵ *See* Inclinations at 18 (noting that “[u]tility-owned generation creates inherent financial conflicts....”).

system upgrade, the HEI Companies' discussion of distribution system upgrades is a step in the right direction and provides a good starting point for discussions regarding its future business model.

On balance, however, DBEDT was disappointed by the HEI Companies' submissions. At the macro level,¹⁶ the HEI Companies' Preferred Plans appear to be incompatible with the State's goal of maximizing the deployment of cost effective investments in clean energy production. Notably, to facilitate the transition to a clean energy future, Hawaii supports the limited, transitional use of LNG in electric generation if it meets certain critical criteria in terms of cost and deal structure. The State is committed to ensuring that LNG is to be used only if it can be deployed at a true cost savings, with the appropriate balancing of risks, and under the appropriate ownership structure. Unfortunately, long-term reliance on LNG and costly infrastructure investments associated with LNG appear to be cornerstones of the PSIPs. Rather than using LNG as a bridge to a clean energy future, the HEI Companies seem intent on using LNG as a bridge to more LNG. Given the PSIPs' treatment of LNG as a long-term solution, and the lack of detailed cost support, DBEDT cannot conclude that assumptions flowing from that treatment are reasonable.

The PSIPs also left much to be desired when compared to the five energy policy directives discussed above. With regard to the first directive—developing a diversified energy portfolio that maximizes renewable generation—the PSIPs are premised on working backward from a desired “end state” that is based on what the HEI Companies characterize as “Balanced portfolio DG

¹⁶ DBEDT's macro-level evaluation of the PSIPs in comparison to the State's energy policy and directives is contained in Part III.A.1 below.

2.0.”¹⁷ Unfortunately, the assumptions giving rise to the DG 2.0 proposal have not been shown to be reasonable. Notably, in addition to the role of LNG in the Preferred Plans, DBEDT submits that the DG 2.0 proposal is the other major building block of the Preferred Plans. Without comparisons to alternative plans and end states, it is not clear what effect more reasonable assumptions about LNG would have on the DG 2.0 proposal. Moreover, there is no analysis demonstrating why the HEI Companies rejected the “Balanced portfolio-DG heavy” end state, which at least appears to be facially consistent with the policy directive to develop a diversified energy portfolio that maximizes renewable generation. Ultimately, there is no analysis demonstrating that the “Balanced portfolio-DG 2.0” end state is the optimal choice for maximizing renewable generation. DBEDT also questions whether the HEI Companies appropriately defined or analyzed the “least cost” end state.¹⁸

As explained in more detail in Part III.A below, DBEDT is concerned that the HEI Companies did not appropriately weigh the beneficial impacts of fostering development in Hawaii’s renewable energy sector and related broad-based economic growth. Rather, the Preferred Plans seem to be too focused on a utility-centric, cost-of-service model that grows the HEI Companies’ regulatory rate base at an average of 9% per year to 2030 versus 5% annual growth of residential DG PV.¹⁹ Without expressly articulating a vision for a sustainable business model

¹⁷ HECO PSIP at 2-4. The five “end states” that the HEI Companies considered were: (1) benchmark; (2) least cost; (3) balanced portfolio-DG 2.0; (4) balanced portfolio-DG heavy; and (5) 100% renewable. *Id.* at 2-6. Without providing any detailed, comparative analysis justifying their decision, the HEI Companies selected the balanced portfolio-DG 2.0 end state. *Id.* at 2-9.

¹⁸ Greater penetration of renewables at least cost is a cornerstone of the State’s energy policy and directives. The HEI Companies have not established that their assumptions about “utility-scale renewable technologies firmed by LNG” and “the levelized cost of DG-PV” are consistent with that policy and those directives. *See, e.g.*, HECO PSIP at 2-6.

¹⁹ Rate base growth is based on current utility-owned rate base of \$1.95 billion and projected foundational and transformational capital expenditures of \$6.44 billion as described in Appendix K: Capital Investments of the

that aligns the HEI Companies' interests with the State's policy objectives and customer interests, there is no demonstration that this result is in the public interest.

The PSIPs flout the State's second directive—building *interconnected*, modernized grids—without any supporting analysis or reasoned basis. Contrary to DBEDT's detailed analysis and finding that the Oahu-Maui grid tie would provide considerable technical, economic, and environmental benefits to the State,²⁰ the HEI Companies summarily conclude that “[a] grid tie connecting the electric grids of Oahu and Maui would not be cost effective.”²¹ It is difficult, at best, to consider the merits of the Preferred Plans given the HEI Companies' fundamentally flawed and unsupported conclusion.

Another critical omission renders it difficult to evaluate whether, and if, the PSIPs meet the third policy directive of balancing technical, economic, environmental, and cultural considerations. Despite the fact that the PSIPs are voluminous, they suffer from a surprising lack of detail and supporting analysis.²² Much of the PSIPs consist of narratives or conclusory tables, charts, and graphs that lack detailed analytical support. Where analysis is provided, it is difficult, if not impossible, to evaluate because the HEI Companies did not provide underlying data, assumptions, or models.²³ DBEDT notes that the Commission has recently issued a series of

PSIP filing. DG PV growth is based on assumption of 130% overall growth in DG-PV between 2013 and 2030 from 27,500 to 63,000 residential customers. HECO PSIP at 6-5.

²⁰ In Docket No. 2013-0169, DBEDT submitted detailed analyses demonstrating that the inter-island cable should be further pursued. In fact, DBEDT's extensive analysis demonstrated that the inter-island cable's benefits outweigh its costs. DBEDT discusses its analysis in more detail in Part III.A.1.b below.

²¹ See, e.g., HECO PSIP at 7-3.

²² Given the lack of supporting detail and analysis, it appears that the HEI Companies have stated an admirable goal of 65% renewables by 2030, but generally sketched out a plan that does not demonstrate how to achieve that goal.

²³ For example, the HECO PSIP discusses “detailed hourly and sub-hourly production simulation modeling” to estimate “fuel, power purchase, operating, and maintenance expense” resulting from the Preferred Plan. HECO PSIP at 1-5. However, it does not appear that the PSIP contains much, if any, detail on the model.

information requests seeking the data and analyses that presumably support the conclusions presented in the PSIPs. It is unfortunate, and a potential cause for unnecessary delay, that the HEI Companies did not make this information available with the initial filings.

Consistent with the State's fourth directive—establishing Hawaii as a “trail blazer” with regard to energy innovation—the Commission's April 28, 2014 orders²⁴ presented the HEI Companies with a unique and valuable opportunity to develop actionable plans that strategically align: (1) customer interests; (2) the State's goals of job creation, industrial transformation, environmental compliance, technological innovation, and ratepayer relief; and (3) the HEI Companies' business model. DBEDT firmly believes the HEI Companies can play a critical and important role in achieving the State's policies and objectives. DBEDT stresses that the State's goals and public policy objectives are not antithetical to a continuing and dynamic role for the HEI Companies. The State's energy future clearly carves out a role for third parties, whether through vendors' innovative technologies or customer's own investments in DER. However, the HEI Companies could have seized upon the opportunity to sell the Commission and the public on the appropriate role for the HEI Companies in the future, *e.g.*, as the distribution system operator of a modern, dynamic grid. Instead of taking that opportunity, the PSIPs slightly improve the outdated mode of thinking that gave rise to the IRP; rather than moving the State toward Utility 2.0, the PSIPs present a roadmap demonstrating how to achieve Utility 1.1. Hawaii cannot be a trail blazer in energy innovation by solving tomorrow's problems with yesterday's solutions.

²⁴ Docket No. 2012-0036, Order No. 32052, *Regarding Integrated Resource Planning* (“Order No. 32052”); Order No. 32053; Docket No. 2007-0341, Order No. 32054, *Instituting a Proceeding to Review Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Ltd.'s Demand-Side Management Reports and Requests for Program Modifications*; Order No. 32055.

Finally, the PSIPs appear to be patently inconsistent with the fifth policy directive of supporting market-led investments and pricing structures that align with the State's energy policy and economic goals. In particular, the HEI Companies propose revisions that are designed to improve perceived deficiencies with traditional rate of return regulation. These revisions include an increased fixed demand charge and the potential elimination or modification of net energy metering. The "problems" these revisions are intended to address relate to ensuring a certain level of revenue or profitability for the HEI Companies. These revisions are asymmetrical in that they appear focused on benefiting the HEI Companies without any commensurate benefit to the public. While DBEDT does not recommend that the HEI Companies be required to develop any particular business case, DBEDT opposes blind adherence to traditional regulation—even regulation that may be improved with incremental changes—without considering whether other pricing and rate structures may be more conducive to ensuring that new technologies and resources are deployed in the most cost-effective and reasonable manner.

2. The PSIPs Fail to Comply with Many Explicit Compliance Directives.

Turning to DBEDT's micro level review,²⁵ DBEDT notes the Commission's statement that "the most pressing system level reliability, curtailment and operational challenges" for HECO "are related to anticipated additions of large quantities of new utility-scale and distributed solar PV capacity by 2016."²⁶ For HELCO and MECO, the Commission stated that "[t]he principal power supply challenge...is how to integrate additional, low-cost utility-scale renewable energy resources, retire old, inefficient fossil generators, and improve generation operational efficiencies

²⁵ DBEDT's micro-level evaluation of the PSIPs in comparison to specific compliance directives is contained in Part III.A.2 below.

²⁶ Order No. 32053 at 84.

in order to reduce energy costs for customers.”²⁷ By describing the scope and expected contents of the PSIPs in great detail, the Commission left no doubt as to the contents of the PSIPs and the information that would be needed to show that the HEI Companies are addressing these principal issues. DBEDT’s expectation was that the analyses, evaluations, and explanations that were to be included in the PSIPS would establish a sound basis for establishing “the strategic roadmap and action plans” that are necessary to achieve the State’s energy goals. Unfortunately, the PSIPs either omit or fail to adequately address many of the specific elements that the Commission directed to be included in the PSIPs.

Focusing on a subset of the compliance directives that the PSIPs were supposed to address, the Commission’s Order Inviting Comments asked commenters to discuss whether the PSIPs provided clear, actionable strategies to lower and stabilize customer bills, integrate a diverse portfolio of cost-effective renewable energy projects, and operate each island grid reliably and cost-effectively with substantial quantities of variable renewable energy resources.²⁸ The Commission also asked commenters to address whether the PSIPs “contain appropriate strategies and timely action plans, supported by well-reasoned and compelling analyses, to achieve these goals on each island.”²⁹ DBEDT cannot conclude that the PSIPs, as filed, contain clear, appropriate, actionable, or timely strategies or plans that address these issues. At best, the PSIPs appear to be a compilation of summary conclusions and partial analyses that may prove—after review of supporting data and analysis that was **not** contained in the PSIPs but that is needed to validate the PSIPs’ assumptions and conclusions—to establish a roadmap for improvements to the

²⁷ *Id.* at 83 (footnote omitted).

²⁸ Order Inviting Comments at 4.

²⁹ *Id.*

HEI Companies' resource planning. At worst, the PSIPs appear to reflect the HEI Companies' repudiation of the fact that the State's policies should determine the desired "end state" and the appropriate role for the HEI Companies to play in reaching that objective. Flipping that fundamental premise on its head, the HEI Companies seemingly propose that the State's public policies conform to the HEI Companies' view of what is best for the utilities, not what is best for the public. Under both these best- and worst-case scenarios, the PSIPs fall short of articulating the strategic vision or steps necessary to implement a utility business case that drives resource planning decisions that will meet and exceed the State's clean energy goals and objectives.

B. DBEDT Recommends that the Commission Take Specific Actions in the Short Term to Avoid the Irreparable Harm Caused by Further Delay.

The deficiencies that are alluded to above and discussed in greater detail in Part III.A *infra* raise fundamental questions, such as "Where should the Commission go from here?" and "How many opportunities should the HEI Companies be afforded to demonstrate that they understand the urgent need to address the rapidly changing business environment in which they operate in order to advance the State's public policy objectives?" DBEDT submits that two considerations are critical in answering these questions. The foremost consideration is that there can be no delay in pursuing the State's clean energy policies. Second, the HEI Companies must be held accountable for the deficient aspects of the PSIPs or repeated failures. Consistent with these considerations, DBEDT identifies in Part III.B below the specific actions the Commission should take to: (1) move forward with multiple, coordinated actions that must be taken to achieve the State's energy policy objectives; (2) build upon meritorious aspects of the PSIPs (and the DGIP); (3) advance the public interest by establishing presumptions where the HEI Companies presented proposals that are facially inconsistent with the State's energy policies and directives or are

deficient in terms of compliance with specific Commission directives; and (4) requiring the HEI Companies to develop, present, and justify their vision for the business model of the future.

Ultimately, as noted earlier, DBEDT envisions a Commission decision, or a series of decisions,³⁰ that are based on a prompt and comprehensive review of the PSIPs, the DGIP, the IDRPP, work products developed in the DER docket or by the DER TWG, the HEI Companies' smart grid plan,³¹ the Commission's investigation of an inter-island cable, EVs and the EV TOU tariff filing, EE measures, net energy metering, feed-in tariffs, decoupling, the GEMS program, and many other programs and initiatives that are important components of the State's efforts to reach an energy future that is consistent with the State's public policy objectives. A comprehensive review will ensure that all actions taken are in harmony with the other parallel efforts underway.³² In turn, such harmony is consistent with the need to meet the State's energy policies through implementation of a strategic plan. DBEDT attaches hereto as Appendix 1 a "Utility Planning Map" that identifies these related efforts and illustrates the contours of the comprehensive review that DBEDT envisions.

³⁰ In reaching decisions on difficult issues, it may be necessary for the Commission to impose top-down regulation to address continuing, willful, or repeated failures. Cf. Docket No. 2011-0092, Order No. 31288, *For Approval of Rate Increases and Revised Rate Schedules and Rules*, at 5-6 (May 31, 2013) ("Order No. 31288").

³¹ "Smart Grid Roadmap and Business Case" (March 2014), available at: <http://www.solari.net/documents/portfolio/Solari-Smart-Grid-Roadmap-&-Business-Case.pdf>.

³² The Commission has recognized the interrelationship of multiple initiatives. See, e.g., Order No. 32052 ("The PSIPs will address many of the commission's Principal Issues such as environmental compliance, fuel switching, generation fleet modernization, and utilization of renewable energy projects, energy storage and demand response to provide ancillary services."); see also Order No. 32053 (explaining that the DGIPs are necessary to mitigation "potential constraints that exist due to high penetration of solar PV system...."); Order No. 32054 at 118-119 ("Demand response programs are an important part of the overall planning and operation of the generation and distribution functions of the electric utility."). The contours of the comprehensive review that DBEDT envisions are illustrated on Appendix 1 hereto.

II. RELEVANT BACKGROUND

It is axiomatic that resource planning looks to the future. Appropriately, DBEDT focuses its Comments on ensuring that plans and strategies are in place to achieve an energy future that meets and exceeds the State's public policy goals. As indicated above, however, a major question elicited through DBEDT's review of the PSIPs is "How many opportunities should the HEI Companies be afforded to demonstrate that they understand the urgent need to address the rapidly changing business environment in which they operate in order to advance the State's public policy objectives?" That question presupposes that the HEI Companies have had opportunities in the past, and have failed, to make transformational changes. Accordingly, in determining what action(s) to take next, it is helpful and necessary to put the PSIPs in context by briefly revisiting the events that preceded the Commission's requirement for the HEI Companies' to submit PSIPs.

A. Historical Review of Energy Resource Planning in Hawaii.

On March 12, 1992, the Commission issued Order No. 11523 (as amended on May 22, 1992 by Order No. 11630), establishing an IRP Framework and requiring the HEI Companies to develop IRPs in accordance with that Framework.³³ The IRP Framework, which was premised on the traditional notion of "least-cost planning," was in place from 1992 to 2008. On November 6, 2008, the HEI Companies and the Division of Consumer Advocacy of the Department of Commerce and Consumer Affairs ("CA"), filed a letter in the HEI Companies' respective IRP

³³ In a subsequent Order, the Commission explained that the "goal of integrated resource planning is the identification of the resources or the mix of resources for meeting near and long term consumer energy needs in an efficient and reliable manner at the lowest reasonable cost." Docket No. 04-0077, *In the Matter of the Application of Maui Electric Company, Limited, Regarding Integrated Resource Planning* (July 18, 2009).

proceedings that were pending at the time, Docket Nos. 2007-0084,³⁴ 04-0046,³⁵ and 04-0077.³⁶ The joint letter requested that the Commission close those respective proceedings. In their joint letter, the HEI Companies and the CA stated that the requests contained therein were made pursuant to the October 20, 2008 Energy Agreement among the State of Hawaii, the CA, and the HEI Companies (“Energy Agreement”), which arose from the Hawaii Clean Energy Initiative (“HCEI”).³⁷ The joint letter further requested that, pursuant to the Energy Agreement, the Commission open a new docket to establish the Clean Energy Scenario Planning Framework that would revise the 1992 Framework.

On May 14, 2009, the Commission initiated Docket No. 2009-0108 for the purposes of considering the HEI Companies’ and the CA’s proposal. On March 14, 2011, the Commission issued an order in that proceeding establishing a “Revised Framework” that would govern the HEI Companies’ energy resource planning.³⁸ At a high level, two main differences distinguished the Revised Framework from the 1992 Framework. One, the Revised Framework moved away from the traditional notion of “least-cost planning” and adopted a more comprehensive view of resource planning. Two, the Revised Framework incorporated the concept of “scenario planning,” which

³⁴ On March 29, 2007, the Commission opened Docket No. 2007-0084 to formally commence the fourth Integrated Resource Planning cycle for HECO and to examine HECO’s fourth Integrated Resource Plan. *See generally* Order No. 23328.

³⁵ On January 24, 2008, the Commission issued an Order approving HELCO’s third Integrated Resource Plan and establishing a March 31, 2009 filing date for HELCO’s fourth Integrated Resource Plan. *See generally* Order No. 23977.

³⁶ On July 18, 2008, the Commission issued an Order approving MECO’s third Integrated Resource Plan and establishing an April 30, 2010 filing date for MECO’s fourth Integrated Resource Plan.

³⁷ The HCEI, established in January 2008, is a partnership between the United States Department of Energy and the State of Hawaii, which is aimed at charting a new path toward an energy-independent future for Hawaii. *See* <http://www.hawaiicleanenergyinitiative.org> (last visited September 30, 2014).

³⁸ Docket No. 2009-0108, *Instituting a Proceeding to Investigate Proposed Amendments to the Framework for Integrated Resource Planning* (March 14, 2011).

is intended to accommodate variations in planning assumptions, forecasts, and estimates of costs and benefits of various resource options.³⁹

On March 1, 2012, the Commission issued Order No. 30233, initiating an IRP process for the HEI Companies under the Revised Framework. On June 28, 2013, the HEI Companies filed their IRP report and action plans. Much like the PSIPs, the IRP was intended to provide the tools for the HEI Companies to craft “roadmaps” to achieve the State’s energy goals.⁴⁰ The similarities do not end there. Much like the PSIPs, DBEDT and other parties were concerned that the IRP report and action plans were not entirely compliant with State policy or the Commission’s directives. Moreover, DBEDT argued that the deficient IRP report and action plans put the Commission in the untenable position of balancing how to hold the HEI Companies accountable while at the same time avoiding undue delay in meeting and exceeding the State’s energy goals.

On April 28, 2014, the Commission issued Order No. 32052, rejecting the HEI Companies’ IRP report and action plans. Attached to Order No. 32052 as Exhibit A, the Commission articulated its “Inclinations” on the future of Hawaii’s electric utilities. In pertinent part, the Commission’s Inclinations noted that the HEI Companies have “failed to articulate a sustainable business model in the intervening time period since this directive was set forth by the Commission almost one year ago in Order No. 31288.”⁴¹ Consequently, the Commission provided invaluable guidance as to the future business strategy that, consistent with the State’s energy policy and

³⁹ While scenario planning may have been a suitable system planning approach under a cost-of-service regulatory framework, the appropriate planning approach should be based on the utility’s business model. For instance, a distribution focused utility would logically need to use a distribution planning framework.

⁴⁰ Revised Framework Order at 2.

⁴¹ Inclinations at 1.

directives identified in Part I *supra*, critical for creating a 21st century generation system, creating modern transmission and distribution grids, and effecting policy and regulatory reform.⁴²

B. Energy Resource Planning and the Reliability Standards Working Group.

On October 24, 2008, the Commission initiated Docket No. 2008-0273, to examine the implementation of feed-in tariffs in the service territories served by the HEI Companies.⁴³ In a September 25, 2009 Decision and Order in that proceeding, the Commission found that the HEI Companies had declined to define how much renewable energy each island could incorporate.⁴⁴ The Commission also recognized that, without some transparency and predictability in reliability determinations, developers would be unable to calculate risks of development. Thus, the Commission directed the HEI Companies to develop reliability standards for each company.⁴⁵ The Reliability Standards Working Group (“RSWG”) was established as part of that standards-development process.

After establishing the Revised Framework but before initiating an IRP process discussed above, the Commission opened Docket No. 2011-0206 for purposes of expanding the scope of the RSWG.⁴⁶ To facilitate work on a variety of complex issues, the RSWG formed multiple subgroups, including the Minimum Load and Curtailments (“MLC”) and PV-DG subgroups. The

⁴² *Id.* at 3.

⁴³ Docket No. 2008-0273, *Instituting an Investigation to Reexamine the Feed-in Tariff Program for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited* (October 24, 2008).

⁴⁴ Docket No. 2008-0273, *Instituting an Investigation to Reexamine the Feed-in Tariff Program for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited*, at 49 (September 25, 2009).

⁴⁵ *Id.* at 50.

⁴⁶ Docket No. 2011-0206, *Instituting a Proceeding to Investigate the Implementation Of Reliability Standards for Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Limited* (September 8, 2011).

purposes of the MLC were to identify: (1) how much renewable curtailment is occurring on the HEI Companies' systems; (2) the cause of renewable curtailments; and (3) means of reducing curtailment of renewables.⁴⁷ The purposes of the PV-DG subgroup were to: (1) share PV data with the HEI Companies to help understand PV generation patterns; and (2) develop better PV-DG interconnection and queuing processes based on review of a report by the National Renewable Energy Laboratory, California's modifications to its screening requirements, and the screening process utilized by the Kauai Island Utility Cooperative.⁴⁸

On the same day it rejected the HEI Companies' IRP report and action plans (i.e., April 28, 2014), the Commission required the HEI Companies to develop and file PSIPs and the DGIP. The Commission explained that the PSIPs were "to formally address many of the issues identified by the MLC Subgroup."⁴⁹ The Commission directed that the DGIP "utilize forward-looking planning consistent with the 'Proactive Approach'" to PV interconnection planning that the PV-DG subgroup developed.⁵⁰

As stated above, DBEDT's focus is on ensuring that the HEI Companies develop viable plans and strategies to achieve an energy future that meets and exceeds the State's public policy goals. Thus, the intent of the foregoing discussion is not to reargue the past. Rather, DBEDT's intent is to provide historical context, which becomes important when evaluating the PSIPs.⁵¹

⁴⁷ See, e.g., Order No. 32053 at 5, 63-64.

⁴⁸ *Id.* at 5, 14-15.

⁴⁹ *Id.* at 68.

⁵⁰ *Id.* at 33.

⁵¹ DBEDT submits that, on April 28, 2014, the Commission took coordinated actions that included, *inter alia*: (1) issuance of the Commission's Inclinations, demanding the HEI Companies to develop a sustainable business model for the future; (2) the requirement for HECO and MECO to develop PSIPs (HELCO had already been required to develop a PSIP); and (3) and the requirement that the HEI Companies develop a DGIP.

Moreover, this historical context should weigh heavily in deciding how to proceed in the near term, i.e., determining the appropriate balance between sending the HEI Companies back to the drawing board yet again and “employ[ing] arduous regulatory scrutiny and oversight of utility expenditures, operations and investments to attempt to achieve the desired performance levels and customer satisfaction.”⁵²

III. COMMENTS

DBEDT submits that the PSIPs raise three primary issues. The first issue is, “What criteria should the Commission use to evaluate the merits of the PSIPs?” In Part III.A below, DBEDT defines the clear, simple, and logical criteria the Commission should use to evaluate the merits of the PSIPs. The second issue is whether the PSIPs pass muster under these criteria. In Parts III.A.1 and III.A.2 below, DBEDT applies the evaluation criteria to the PSIPs to determine whether, and if so, to what extent, the PSIPs are consistent with and advance the State’s energy policies. The third issue recommends a course of action should the Commission find the PSIPs to be inadequate or non-compliant. DBEDT’s recommended actions are identified in Part III.B below.

A. The Commission Should Evaluate the PSIPs Using Clear, Simple, and Logical Criteria That Are Rooted in the State’s Energy Policy and Directives.

DBEDT submits that the Commission should evaluate the PSIPs using clear, simple, and logical criteria. Chief among these criteria is whether the PSIPs are consistent with the State’s clean energy policy and directives, which DBEDT presents in Part I above and discusses throughout. Given the harmony among the State’s energy policy and the specific compliance directives contained in the orders requiring development of the PSIPs, determining whether the PSIPs actually complied with those specific compliance directives is a logical step in evaluating

⁵² Docket No. 2011-0092, Order No. 31288 at 5-6.

the PSIPs. As discussed below, DBEDT applied these evaluation criteria to the PSIPs and concluded that the PSIPs suffer from material deficiencies.

1. The State's Clean Energy Policy and Directives, Not the HEI Companies' Self-Serving Preferences, Must Drive the Desired End State and the Plans for Achieving that End State.

The State's energy policy is rooted in one fundamental principle: a commitment to maximize the deployment of cost effective investments in clean energy production and management for the purpose of promoting Hawaii's energy security and well-being. The State firmly believes that adherence to this principle will result in the most secure foundation for Hawaii's economy and way of life. Further, the State believes that urgently pursuing actions that advance the State's energy policy is a core strategic goal.

Unfortunately, the PSIPs are devoid of any meaningful recognition of this principle or the basis on which the PSIPs were ordered—i.e., the HEI Companies' continuing failures to articulate a sustainable business model and detailed strategic plan that align their interests with the State's public policy goals.⁵³ Rather, the PSIPs appear to be premised on an HEI Companies-centric "end state" that is not sufficiently explained or correlated to the State's energy policy.

In developing their preferred end state, the HEI Companies' first step, "Step A," was purportedly designed to provide high-level guidance for the physical design of the system in 2030.⁵⁴ In this process, the HEI Companies considered five end states: (1) benchmark; (2) least cost; (3) balanced portfolio-DG 2.0; (4) balanced portfolio-DG heavy; and (5) 100% renewable.⁵⁵

⁵³ See, e.g., Inclinations at 1.

⁵⁴ HECO PSIP at 2-4; see also *id.*, Transmittal Letter at 3 (explaining that the HEI Companies "utilizes a clean-slate approach to identify what an optimal generation portfolio would be in 2030"). Given the lack of a sustainable business model for the future, DBEDT questions the HEI Companies' ability to reasonably estimate what the "optimal generation portfolio" would look like in 2030.

⁵⁵ *Id.* at 2-6.

Without providing any detailed comparative analyses, the HEI Companies explain that they selected the balanced portfolio-DG 2.0 as the appropriate end state.⁵⁶ While the HEI Companies do not adequately explain why they did not select the balanced portfolio-DG heavy end state, they contend that balanced portfolio-DG heavy has higher “all-in societal generation and T&D costs than ‘Least cost’ and ‘Balanced portfolio-DG 2.0’.” It also puts upward pressure on the reliability of the system given the high level of renewables.”⁵⁷ Despite their claim that the PSIPs are the product of “rigorous evaluation of complex and interrelated objectives,”⁵⁸ the HEI Companies provide no support for either of the contentions about the DG heavy end state.

Nonetheless, working backward from their preferred end state, the HEI Companies’ “Step B” was purportedly designed to shift the focus from goal setting to developing a “detailed, tactical executable plan” to get to the final vision and 2030.⁵⁹ In Step B, the HEI Companies developed Preferred Plans, which are intended to “transform[] the system from current state to a future vision of the utility in 2030....”⁶⁰ As is apparent from a review of the PSIPs, and as demonstrated herein, the Preferred Plans appear to be general plans that make incremental changes to the traditional “cost of service” business model and otherwise maintain the *status quo*. Consistent with the HEI Companies’ traditional approach, the Preferred Plans seem to be a delayed reaction to disruptive changes in the global marketplace and technological advancements that call for proactive and well-conceived adaptation on the part of the HEI Companies. The Preferred Plans do not reflect a

⁵⁶ *Id.* at 2-9.

⁵⁷ *Id.* at 2-9 to 2-10.

⁵⁸ *Id.*, Transmittal Letter at 3

⁵⁹ *Id.* at 2-4.

⁶⁰ *Id.* at 5-1.

“macro” view that clearly shows how all players and new technologies will work collaboratively in the future toward advancing the State’s energy policy.

More specifically, the HEI Companies failed to provide enough information to validate the Preferred Plans. Not only do the Preferred Plans fail to demonstrate a fair and equitable split in cost and benefits between ratepayers and shareholders, they do not demonstrate that it will even be possible for the Preferred Plan to achieve the HEI Companies’ stated goals regarding interconnection and renewable penetration. The Preferred Plans provide some key dates, but fail to explain in detail how certain milestones will be achieved within those time frames. They also fail to identify the costs of achieving those milestones, or otherwise provide detailed analyses comparing the costs of the Preferred Plans to other alternatives, thereby failing to demonstrate the reasonableness of the Preferred Plans or the bases for their selection.

In sum, the PSIPs are more of a general road map of what the HEI Companies’ prefer their generation, transmission, and distribution systems to look like in 2030. The PSIPs lack strategic focus that is centered on the State’s energy policies. The Preferred Plans are not actionable plans detailing how all of the moving parts work together to create a dynamic utility business model that is characterized by customer choice, high-levels of renewable generation, lower costs, and the deployment of new technologies. In short, the PSIPs fail to provide a “critical path forward” with clear timelines, itemized budgets, allocated resources and contingencies.

In consideration of the State’s overall energy policy, DBEDT cannot support the PSIPs. As discussed below, when viewing the PSIPs from the perspective of the State’s five directives that guide implementation of the overall energy policy, DBEDT reaches the same conclusion.

a. Diversifying Hawaii's Energy Portfolio.

Hawaii is blessed with diverse resources such as solar, wind, hydro, bioenergy, geothermal, and energy efficiency. The State's policies are designed to utilize these abundant, clean and indigenous resources in the most effective and timely manner possible. That said, importing LNG from North America presents a unique opportunity that deserves consideration at this time. To facilitate the transition to a clean energy future, Hawaii supports the limited, transitional use of LNG in electric generation. If a LNG import option is structured appropriately, it could provide a low-cost, relatively clean generating fuel that would complement renewable energy penetration, improve Hawaii's air quality and health, reduce greenhouse gas ("GHG") emissions, and provide a large windfall for Hawaii's economy. Moreover, the infrastructure could be transitioned over time to support Hawaii's clean energy goals in the transportation sector.

Specifically, the State's approach to LNG is premised on five tenets: (1) ensuring substantive savings to users and ratepayers (greater than 30% for electricity generation); (2) ensuring transparency in a regulated structure that aligns with and supports the State's renewable energy goals, and meets all users' needs; (3) aggregating demand through a consortium approach to achieve sufficient economies of scale, buying power, and risk-sharing (with zero commodity price risk being borne by ratepayers); (4) diversifying sources and contract terms/durations to protect against risk; and (5) selecting only proven infrastructure and logistics solutions with experienced and creditworthy partners.

DBEDT is concerned that the HEI Companies' plans regarding LNG do not align with these five tenets. For example, the HEI Companies observation that LNG is "lower in cost" than other petroleum-based fuels is not sufficiently supported given long-term commodity price risk and volatility, not to mention Hawaii's clearly-articulated goal of reducing dependence on

imported oil.⁶¹ Moreover, “lower in cost” does not necessarily translate to a minimum threshold of 30% ratepayer savings.

Importantly, while non-LNG fossil-based generation is reduced over time in the PSIPs, the HEI Companies appear to have ignored the combination of DR and EE as a low-cost resource option. Instead, the HEI Companies seem intent on maintaining thermal generation in perpetuity.⁶² While the HEI Companies’ containerized LNG plan may be consistent with the State’s policy in the short-term,⁶³ DBEDT would strongly oppose any LNG solution that further entrenches the HEI Companies in fossil generation. Unfortunately, long-term reliance on LNG appears to be the backbone of the PSIPs.

Further, the HEI Companies claim that conversion to LNG would take “limited capital investment.”⁶⁴ This claim is belied by the substantial capital investment that would be necessary to develop the infrastructure necessary to meet the HEI Companies’ supply needs after 2017. At a minimum, the “bulk” option envisioned by the HEI Companies needs more detailed justification and related analysis to determine if it aligns with the State’s preferred approach.

DBEDT also has concerns about the HEI Companies’ envisioned role in the fuels business as this would be a vertical “upstream” expansion of the current business model. DBEDT contends that this expansion would be anathema to building a sustainable utility business model as outlined in the Commission’s Inclinations. DBEDT needs to see, and would have expected to have seen by this point, much more detail in the plans regarding the HEI Companies’ approach to LNG to understand how it optimizes achievement of the State’s goals and objectives.

⁶¹ *Id.* at 1-4; *see also id.* at 2-10 (discussing fuel savings in comparison to other liquid fuels).

⁶² *See, e.g., id.* at 5-20.

⁶³ The containerized LNG proposal requires detailed, objective scrutiny on the part of policy-makers and regulators.

⁶⁴ HECO PSIP at 5-21.

To reiterate, Hawaii is committed to ensuring that LNG is used only if it can be deployed at a true cost savings to the ratepayer with the appropriate balancing of risks between stakeholders (commodity pricing risk should not be borne by ratepayers), and with a clear timeline for transitioning it away from the electricity generation to other uses, such as transportation. While DBEDT is not opposed to the use of LNG under these limitations, even if the HEI Companies' proposal was consistent with these limitations, DBEDT still has concerns with the motivations underlying the HEI Companies' long-term reliance on LNG. In particular, for vertically-integrated utilities such as the HEI Companies, renewable generation owned by third parties⁶⁵ amounts to direct competition to the vertically-integrated utilities' centralized generation. Given that traditional cost-of-service regulation compensates the HEI Companies through rates that include a return on equity for the utilities' assets, Preferred Plans that include substantial investments in utility-owned generation assets are clearly designed to serve the HEI Companies' narrow and outdated definition of its best interests. If this is the motivation driving the Preferred Plans, the treatment of LNG in the Preferred Plans cannot be reconciled with the Commission's call to redefine the future role of the HEI Companies in power generation.⁶⁶

b. Building Interconnected, Modernized Grids.

Linking the island grids utilizes the State's diverse renewable resources at a scale that will reduce costs, improve overall system efficiency, and provide reliability benefits, all of which help break the historical reliance on fossil fuel generation. *Consistent* with this policy directive, the Commission has undertaken an investigation to determine whether an inter-island grid tie between

⁶⁵ Third party ownership could take the form of independent power producers that own utility-scale generation or customers who own DG-PV systems.

⁶⁶ Inclinations at 18.

Maui and Oahu is in the public interest.⁶⁷ *Contrary* to this policy directive, the PSIPs do not contemplate a grid tie but rather assume DER fueled by LNG will be the solutions to interconnection and grid modernization.

Specifically, HECO states that a “submarine cable to interconnect remote renewable generators to Oahu makes sense *only* if sufficient renewable resources cannot be sourced on Oahu.”⁶⁸ DBEDT highlights the inherent contradiction of HECO’s assertion that the need for the grid tie connecting Oahu and Maui is eliminated due to sufficient renewable resources available on Oahu, when it is delaying interconnection of DG PV due to supposed grid safety and reliability concerns that would themselves be helped by the grid tie. Moreover, the detailed analysis and comments DBEDT submitted in the inter-island cable investigation demonstrated that the grid tie would provide significant reliability and economic benefits on the order of \$423 million⁶⁹ versus HECO’s flawed, low-ball estimate of \$175 million.⁷⁰ Furthermore, in its submission, DBEDT further commented that the grid tie could also provide environmental benefits (i.e. reduced pollution from less oil being burned by conventional fuel electric generating units, retirement of old, inefficient petroleum-based power plants, lower cost of environmental compliance and carbon pollution); this is an important factor that was seemingly omitted in HECO’s grid tie analysis.

⁶⁷ See *generally* Docket No. 2013-0169. The interrelationship between the inter-island cable investigation and the PSIPs demonstrates the need for the comprehensive review DBEDT asks the Commission to undertake.

⁶⁸ HECO PSIP at 3-9 (emphasis added). It is not clear that the HEI Companies’ assumption regarding the level of renewables that can be constructed on Oahu is accurate. DBEDT’s comments and detailed analysis demonstrated that cable project improves reliability of both the HECO and MECO systems both with and without the HEI Companies’ questionable assumption on the amounts of renewable energy that could be procured on Oahu in the future. See Docket No. 2013-0169, DBEDT’s Initial Public Comments in Response to Commission Order No. 31356, at 23-24 (September 9, 2013).

⁶⁹ *Id.* at 3, 20-22. More aggressive estimates of benefits exceed \$500 million. *Id.* at 28.

⁷⁰ HECO PSIP at 5-58.

As explained in Part III.B below, the Commission should promptly issue its ruling in Docket No. 2013-0169 and begin the procurement process for the Oahu-Maui grid tie. The future business case that the HEI Companies develop should also be consistent with the directive to build integrated, modern island grids.

c. Effectively Balancing Technical, Economic, Environmental, and Cultural Considerations.

While renewable energy resources are generally less expensive than oil-fired generation, there is a common misconception about the “challenges” associated with integrating these resources. Rather than focus on these issues as challenges, DBEDT firmly believes that these issues are opportunities to advance bold new technologies and policies.⁷¹ In seeking out these opportunities, DBEDT takes great care to find the most beneficial long-term solutions that make the best use of land and resources. In particular, DBEDT collaborates with partners in the public and private sectors to focus on the most beneficial mix of projects.

DBEDT expected to see more information and detail regarding the ratepayer and economic impacts of each of its capital budget items, including a bulk LNG terminal, of which there is no discussion, to be able to assess the viability of the Preferred Plans. In addition, the HEI Companies failed to justify the hypothetical level of the fixed demand charge contained in the DG 2.0. The HEI Companies’ failure to adequately support their Preferred Plans renders it difficult to properly evaluate the options in terms of technical, economic, environmental and cultural factors. Much more detail is needed in this regard before DBEDT can conclude that the Preferred Plans are consistent with this policy directive.

⁷¹ DBEDT would have liked to have seen this mindset reflected in the PSIPs. Any future business model the HEI Companies develop must reflect this mindset.

d. Leading the Way on Energy Innovation.

Hawaii is in a unique position to lead the country on energy innovation. Specifically, the combination of Hawaii's independent grids, high-cost energy, and connections to the Asia Pacific region make Hawaii an ideal test bed for new energy solutions. Among Hawaii's high-impact test bed initiatives are a letter of intent with the Republic of Korea Ministry of Knowledge Economy to conduct a smart grid demonstration project; \$37 million in financial support from Japan for a Maui smart grid project to improve the integration of electric vehicles with solar and wind power; and a smart grid inverter project with Silver Springs Network, SolarCity, Fronius, MECO and Oklahoma Gas & Electric to test smart inverter capabilities in situations of high intermittent penetration. All of these projects demonstrate the State's commitment to modernizing Hawaii's electrical system through test bed deployments. As such, DBEDT was encouraged by the HEI Companies' strategic goal to "foster innovation and build internal operating experience through energy storage research and development activities" and ongoing collaborations on energy storage such as those described in HECO's PSIP between HECO, Hawaii Natural Energy Institute, STEM.⁷² DBEDT encourages the HEI Companies to continue their pursuit of innovation and test bed deployments that would demonstrate ongoing commitment to modernizing Hawaii's electrical system.

With that said, the HEI Companies purport to have Energy Storage Systems plans, and represent that energy storage is a "key" enabling technology for higher renewable penetration.⁷³ DBEDT agrees that energy storage is a key enabling technology that should be pursued. However, the HEI Companies' Energy Storage Plan is, at best, a vague list of guiding principles, goals, and

⁷² HECO PSIP at 5-40.

⁷³ HECO PSIP at 1-4, 2-10.

philosophies.⁷⁴ It is a far cry from an actionable plan for using energy storage to maximize the cost-effective integration of renewable energy resources.

Two other examples of how the HEI Companies fall short of demonstrating their clear commitment to energy innovation, and instead resort to “business as usual,” are their treatment of EVs and DR. Continued future adoption of EVs has significant potential as a means to reducing our State’s dependence on foreign petroleum in alignment with the State’s fuel diversity, renewable energy, EE goals, and energy innovation vision. By the HEI Companies’ own admission within the PSIP, “as a new incremental load, EVs are unlikely to drive new, large investments in the grid. Thus, it is likely that the marginal T&D cost to serve EV load is very modest, so energy sales for EVs would help lower the cost of the grid to other, non-EV customers.”⁷⁵ Given the potential benefits to ratepayers, DBEDT questions the HEI Companies’ continued lack of conviction to re-instate its existing EV pilot TOU residential rate schedule.⁷⁶ Furthermore, DBEDT is concerned that the HEI Companies have requested a near six-year extension of the existing, ineffective EV Pilot as evidenced by low participation rates and a general failure to meet its EV program objectives. Perhaps the HEI Companies’ disinterest in incentivizing EV adoption through its EV Pilot program is rooted in its stated position that “EVs are unlikely to drive new, large investments in the grid” and thus less accretive to its earnings. However, this

⁷⁴ *Id.* at 5-27 to 5-35.

⁷⁵ *Id.* at 6-9.

⁷⁶ *See generally* the HEI Companies’ Transmittal 14-07, For Approval to Establish Schedule TOU EV Residential Time-of-Use Service with Electric Vehicle, Schedule EV-R Residential Electric Vehicle Charging Service, and Schedule EV-C Commercial Electric Vehicle Charging Service (July 31, 2014). DBEDT submitted Comments/Protest addressing the HEI Companies’ EV TOU filing on September 15, 2014.

position would be short-sighted and further mimics the existing lack of conviction and execution as noted within the PSIP.⁷⁷

Similarly, the HEI Companies' IDRPP appears to be a step in the right direction, however it still falls significantly short of effectively describing or analyzing its potential effects within the PSIP plans. For example, one of the goals of the PSIP is to "maximize the utilization of renewable energy." In this instance, the goal of the PSIP in coordination with a well-executed IDRPP plan can incent customers to move, for instance, water heating from peak periods to non-peak daytime periods when solar generation is most abundant. Further, owing to the persistent lack of details throughout the PSIP and IDRPP, it was nearly impossible for DBEDT to determine whether the HEI Companies were extracting the optimal benefit from their stated newly conceived DR comprehensive programs and/or realizing the synergies. Disappointingly, and similar to the PSIP, the HEI Companies repeat a pattern of delivering top line summary analysis that falls short of enabling an effective review of the DR proposal itself. As such, whether the existing DR program provides sufficient incentives and options for customers to fully drive value remains to be determined, and again proliferates the waiting game for the Commission and ratepayers.

As the foregoing demonstrates, the HEI Companies could have done much more to demonstrate their commitment to leading the way on energy innovation. By defaulting to incremental changes to the Utility 1.0 model, the PSIPs represent a missed opportunity. More importantly, the HEI Companies' lack of coherent vision and clear implementation plans for a future business model is acting as a drag on the overall economy by limiting or quashing-out the potential for innovation and investment.

⁷⁷ A well-support business model for the future would address this problem.

e. Supporting Market-Led Investments and Pricing Structures That Align with the State's Energy Policy and Economic Goals.

The private sector—from the HEI Companies to the entrepreneurs and investors to private homeowners—must make the investments needed to transition the State away from oil. While our policies are designed to embrace and promote these investments, solutions must also be inclusive and promote equity. Thus, the State has made great strides in developing programs and financing mechanisms that allow market participants, including residential consumers, to take an active role in developing the State's clean energy future.

The recently approved GEMS program, born out of Senate Bill 1087 and signed into law in June 2013, was envisioned to democratize clean energy for all Hawaii consumers by expanding access to PV systems and other clean energy improvements for those who have had difficulty in obtaining financing for such projects. Unlike other programs, GEMS is groundbreaking given its synergistic financing model that combines a traditional bond structure and on-bill financing. It is envisioned that this new financing model will open the door for a whole new financing market in renewables and energy efficiency and fill a gap in the adoption of clean energy and efficiency projects, especially for those who could not previously afford such installations.

Another example of DBEDT's commitment to developing new paradigms in support of the private sector for public benefit, is the High Technology Development Corporation ("HTDC"). The HTDC has evolved its priorities by connecting a growing community of entrepreneurs and innovators whose shared beliefs in working together are helping to develop world-class high technology businesses in Hawaii. This technology sector development should filter through to the energy sector as we develop an approach to providing advanced grid services through DERs.

More examples of the State's commitment to fostering market-based research, development, deployment and innovation are the HI Growth Initiative and the Natural Energy Laboratory of Hawaii Authority ("NELHA"). The HI Growth Initiative is a state equity investment program designed to catalyze the development of an innovation ecosystem that supports high growth entrepreneurial businesses and high wage jobs. NELHA promotes sustainable business development and economic diversification by providing resources and facilities for energy and ocean-related research, development, and commercialization. In January 2014, the Administration released \$28.3 million for critical infrastructure upgrades in support of NELHA's mission.

While not intending to prescribe or suggest involvement in any particular commitment or State program, DBEDT offers this discussion as illustrative examples of how the HEI Companies might utilize these types of programs, or the products and services that come from them, in testing, developing and commercializing solutions for modernizing Hawaii's energy economy and ecosystem. Unfortunately, the PSIPs appear to value HEI-centric considerations over innovative programs and technologies that could provide numerous options for consumers, and then allowing the market to choose. For example, in discussing net energy metering and energy storage, the HEI Companies contend that the net energy metering payment structure does not incentivize customers to provide storage. Rather than addressing this issue from a holistic basis and proposing an innovative solution, the HEI Companies resort to their traditional way of thinking by focusing on the purported need to revise the net energy metering payment structure to be "more in line with the Company's marginal cost of generating energy for the system."⁷⁸ This proposal demonstrates the HEI-centric approach to addressing challenges, without due consideration of the other options and the State's clear preference for expanding customer choice. Providing numerous options for

⁷⁸ *Id.* at 5-35 to 5-36.

consumers, and then allowing the market to choose which of those options works best for their own circumstances, would be an approach more aligned with the State's directives.

2. The HEI Companies' PSIPs Fail to Comply with Many Explicit Compliance Directives, Thereby Resulting in an End State and Preferred Plans that are Not Consistent with the State's Goals.

The Commission aptly recognized that "the most pressing system level reliability, curtailment and operational challenges" for HECO "are related to anticipated additions of large quantities of new utility-scale and distributed solar PV capacity by 2016."⁷⁹ For HELCO and MECO, the Commission stated that "[t]he principal power supply challenge...is how to integrate additional, low-cost utility-scale renewable energy resources, retire old, inefficient fossil generators, and improve generation operational efficiencies in order to reduce energy costs for customers."⁸⁰ The Commission directed the HEI Companies to develop and file PSIPs to address these issues.

In issuing those directives, the Commission provided explicit guidance as to the purpose of each company's PSIP. As to purpose, it logically follows from the identification of primary challenges that the PSIPs must "address how the capacity of the island grid may be expanded in order to accommodate additional variable renewable energy resources [and] other major goals including reduction of energy costs and improvements in generation operational efficiencies."⁸¹

The Commission also described the expected contents of the PSIPs in great detail.⁸² With regard to HECO, the Commission's April 28, 2014 Order No. 32053 identified seven components

⁷⁹ Order No. 32053 at 84.

⁸⁰ *Id.* at 83 (footnote omitted).

⁸¹ *Id.* at 44.

⁸² In addition to articulating the specific requirements discussed below, the Commission also made clear what the PSIPs should not contain. See Order No. 32055 at 94 ("emphasiz[ing] that voluminous backward looking discussions and analyses with outdated and inappropriate methodologies and techniques are not acceptable, nor

that the Commission expected to see in HECO's PSIP.⁸³ In explaining these seven main components, the Commission also described 37 subparts that HECO was expected to include in its PSIP.⁸⁴ Concerning MECO's PSIP, the Commission's April 28, 2014 Order No. 32055 identified six main analyses MECO was to provide, in addition to nine specific subparts.⁸⁵ The Commission's December 20, 2013 Order No. 31758 explained that HELCO's PSIP should include four main components and 24 subparts.⁸⁶

By and through these directed analyses, the PSIPs were to provide "the strategic roadmap" and "action plans" for accomplishing the goals of integrating additional, low-cost utility-scale renewable energy resources, retiring old, inefficient fossil generators, and improving generation operational efficiencies in order to reduce energy costs for customers.⁸⁷ Unfortunately, the seemingly *ad hoc* manner in which the HEI Companies' PSIPs are organized makes it unnecessarily difficult to determine whether the HEI Companies complied with the Commission's

are deflections and excuses that conclude additional studies are required"); *see also* Order No. 31758 (stating, with regard to HELCO, that "[t]he commission is interested in a PSIP submission that contains improvement strategies and action plans, not numerous technical analyses that conclude additional studies are required").

⁸³ Order No. 32053 at 91-103. These seven components are: (1) fossil generation retirement plan; (2) a generation flexibility plan; (3) a must-run generation reduction plan; (4) an environmental compliance plan; (5) a key generator utilization plan; (6) an optimal renewable energy portfolio plan; and (7) a review of generation unit commitment and economic dispatch. These seven components are discussed below in Part III.A.2 subsections a, c, e, h, i, j, and l, respectively.

⁸⁴ *Id.*

⁸⁵ Order No. 32055 at 86-93. These six components are: (1) an optimal renewable energy portfolio plan; (2) a generation fleet adequacy analysis; (3) a review of generation unit commitment and economic dispatch; (4) an analysis of non-transmission alternatives; (5) an analysis of how electrical pumping loads of water and wastewater utilities and irrigation can provide fast-response and dynamic demand response resources; and (6) an analysis of how pumped storage hydro can optimize the economics and operation of the system by providing ancillary services. These six components are discussed below in Part III.A.2 subsections g, k, l, m, n, and o, respectively.

⁸⁶ Order No. 31758 at 112-120. These four components are: (1) a fossil generation retirement plan; (2) a generation flexibility plan; (3) a must-run generation reduction plan; and (4) a review of generation unit commitment and economic dispatch. These four components are discussed below in Part III.A.2 subsections b, d, f, and l, respectively.

⁸⁷ Order No. 32053 at 83-84 (footnote omitted).

directives. In particular, each PSIP contains an “Appendix A” that purports to show where in the PSIPs the required components are included. The utility of those appendices is questionable. The cross references on each Appendix A simply identify the first page where a particular analysis is purported to begin, as well as the heading under which that analysis is allegedly contained. By identifying only one page, and using multiple headings and sub-headings, it is difficult to determine which portions of the PSIPs the HEI Companies intend to address which requirements. Further, substantial portions of the PSIPs appear in sections that are wholly unrelated to the references on Appendix A.⁸⁸ In Part III.B below, DBEDT recommends that the Commission require each HEI Company to correct and refile Appendix A within five days.

Despite the difficulty in navigating PSIPs, DBEDT was able to identify areas where the HEI Companies complied with, partially complied with, or failed to address the Commission’s specific compliance directives for each of the PSIPs. As discussed below, DBEDT cannot conclude that the PSIPs are consistent with the State’s clean energy policies.

a. HECO’s Fossil Generation Retirement Plan.

Order No. 32053 mandated that HECO’s PSIP include a Fossil Generation Retirement Plan that “shall be supported by an analysis of which existing utility fossil fuel generating units (beyond the Honolulu units) can be retired, when it is feasible to retire each such unit, and why it is not feasible to retire each such unit sooner, the effect on system operations of retiring each such unit, and the anticipated ratepayer savings that would result.”⁸⁹ In addition to this compulsory analysis, the Commission explained that, “at a minimum,” HECO’s Fossil Generation Retirement Plan was

⁸⁸ The Commission and interested parties should not be forced to guess which parts of the PSIPs the HEI Companies intend to respond to which directives. Accordingly, in Part III.B, below, DBEDT recommends that the Commission require each HEI Company to file a revised Appendix A within 10 days that cross-references each part of the PSIPs that are intended to respond to each particular directive.

⁸⁹ Order No. 32053 at 92.

to: (1) analyze the potential roles that each fossil generating unit should play in the future; (2) analyze future fuel expenses, O&M expense, and capital expenditures that would be avoided if each existing fossil unit were retired; (3) consider the impact of each retirement, without replacement, on adequacy of power supply and reserve margins under existing capacity planning criteria; (4) analyze how the capacity value of solar, wind, energy storage, and DR resources will be factored into the determination of the adequacy of power supply; (5) analyze the feasibility of using existing sites to locate new, quick-start, fuel-efficient, flexible generation; and (6) discussion of the action plans, costs, and ratepayer impacts of implementing the Fossil Generation Retirement Plan.⁹⁰

According to Appendix A of the HECO PSIP, the Fossil Generation Retirement Plan can be found under the heading “Plan for Retiring Fossil Generation,” which begins on page 5-21 and appears to run through page 5-26. HECO’s Fossil Generation Retirement Plan partially addresses the principal requirement to analyze which existing utility fossil fuel generating units (beyond the Honolulu units) can be retired. On pages 5-21 to 5-22, HECO explains its plans to deactivate and/or retire all steam generating units by 2030.⁹¹ While HECO explains its decisions to deactivate and retire the units at the times specified, it does not necessarily explain why it is not feasible to retire each such unit sooner.⁹² Moreover, the Fossil Generation Retirement Plan explains HECO’s rationale for retiring the steam units in pairs. However, page 5-49 of the HECO PSIP explains that the steam units may not need to be retired in pairs. HECO makes general statements about the

⁹⁰ *Id.* at 92-93.

⁹¹ HECO PSIP at 5-21 to 5-22; *see also id.* at L-5 to L-6. HECO’s steam units are: (1) Honolulu Units 8 and 9; (2) Waiiau Units 3, 4, 5, 6, 7, and 8; and (3) Kahe Units 1, 2, 3, 4, 5, 6. *See id.* at 3-4 to 3-5.

⁹² At most, HECO explains its general rule to retire a unit within two years of deactivation. *Id.* at 5-21. This general description does not provide a basis for the plans to deactivate units.

costs of retiring units as a pair versus retiring single units but does not substantiate those statements with analyses.⁹³ This non-committal identification of potential options does not meet the requirement of providing clear, actionable plans. Nonetheless, DBEDT is pleased that HECO has made progress as compared to its prior planning initiatives.

Noticeably missing from the Fossil Generation Retirement Plan is any discussion of when the HECO's two diesel-fueled units can be retired.⁹⁴ Rather, the discussion in HECO's PSIP that falls under the heading "Plan for Retiring Fossil Generation" is limited to steam units. Elsewhere in the HECO PSIP, HECO states that Waiau 9 and 10 "are not anticipated to be retired" between 2019 and 2030.⁹⁵ It appears that HECO intends to continue to operate the Waiau 9 and 10 units using diesel fuel.⁹⁶ In stark contrast, the HELCO PSIP (discussed below) provides an Appendix that is devoted entirely to analyzing the costs and benefits of replacing HELCO's diesel generators.⁹⁷ DBEDT would have expected to see a similar analysis in HECO's PSIP.

Finally, the Fossil Generation Retirement Plan does not include a detailed discussion, with analytical support, of anticipated ratepayer savings that would result from the retirements.

The manner in which the HECO PSIP is organized makes it difficult to determine whether HECO complied with the six subcomponents of the Fossil Generation Retirement Plan that HECO was required to analyze, consider, or discuss. However, HECO appears to address some of the minimal requirements. For example, the Fossil Generation Retirement Plan was to analyze the

⁹³ *Id.*, Appendix K at K-8.

⁹⁴ The two diesel-fueled, combustion turbine units are Waiau 9 and 10.

⁹⁵ HECO PSIP at 5-48; *see also id.* at 5-8, Table 5-2.

⁹⁶ *Id.*, Appendix L at L-9.

⁹⁷ *See generally* HELCO PSIP, Appendix O.

feasibility of using existing sites to locate new, quick-start, fuel-efficient, flexible generation.⁹⁸ While Appendix A indicates that the Fossil Generation Retirement Plan can be found under the heading “Plan for Retiring Fossil Generation,” which begins on page 5-21, that discussion does not address the potential uses of existing sites.⁹⁹ However, HECO does provide the required analysis elsewhere in its PSIP. Even then, HECO characterizes that discussion as “only present[ing] what may be possible at each location....”¹⁰⁰ While exact certainty cannot be expected, HECO’s discussion of options is not an actionable plan. Moreover, there is no evaluation of “the costs or relative merits of the options presented.”¹⁰¹ Thus, HECO’s analysis is a helpful discussion of options, but it otherwise fails to go into detail as to which options are feasible as required.

Similarly, the analysis of how the capacity value of solar, wind, energy storage, and DR resources are factored into the determination of the adequacy of power supply and reserve margins is not contained in the section that HECO identifies as the Fossil Generation Retirement Plan. Rather, that “analysis” appears to be limited to the summary table and conclusory discussion on pages 4-7 to 4-8, 5-10 to 5-11, and N-9 to N-10. In this regard, DBEDT has serious concerns with respect to the HEI Companies’ use of a “loss of load probability” metric to determine a 10% capacity value for wind on the HECO and HELCO systems, a 3% capacity value for wind on the MECO system, and 0% capacity factor for solar PV on all three systems.¹⁰² At a minimum, the value of solar stands in stark contrast to the recommendations of the RSWG Technical Review

⁹⁸ Order No. 32053 at 92.

⁹⁹ HECO PSIP at 5-44 to 5-56.

¹⁰⁰ *Id.* at 5-45.

¹⁰¹ *Id.*

¹⁰² *Id.* at 4-7 to 4-8.

Committee (“TRC”), which stated that capacity values are “not zero.”¹⁰³ Without supporting analysis, the HEI Companies’ assumptions appear to be designed to unduly penalize distributed renewables.

In sum, HECO’s Fossil Generation Retirement Plan partially complies with the specific requirements set forth in Order No. 32053. Based on that partial compliance, DBEDT cannot conclude that the Fossil Generation Retirement Plan presents clear, defensible roadmaps or action plans for retiring HECO’s fossil units. Accordingly, to the extent the Preferred Plan is premised on the analyses underlying HECO’s Fossil Generation Retirement Plan, DBEDT cannot conclude that the Preferred Plan is in the public interest.

b. HELCO’s Fossil Generation Retirement Plan.

As explained in Order No. 31758, HELCO’s Fossil Generation Retirement Plan was to analyze which existing fossil fuel plants (beyond HELCO’s Shipman units) can be retired, when it is feasible to retire each such plant, the effect on system operations of retiring each such plant, and the anticipated ratepayer savings that would result. In addition, HELCO’s Fossil Generation Retirement Plan was to include, at a minimum, the following four components: (1) consideration of the impact each retirement would have on adequacy of power supply and reserve margins under existing capacity planning criteria; (2) an analysis of how the capacity value of hydropower, solar, wind, energy storage, and DR resources will be factored into the determination of the adequacy of power supply; (3) an analysis of future fuel expenses, operation and maintenance expenses, and capital expenditures that would be avoided if each existing fossil generating unit were to be retired; and (4) a detailed plan to remove from service, and from customer rates, an amount of excess steam generation capacity—in addition to Shipman Units 3 and 4—equal to at least the net

¹⁰³ See, e.g., Order No. 32053 at 12.

demonstrated capacity of the Hu Honua generating plant in order to ensure that ratepayers receive some of the benefits that Hu Honua is designed to provide after the unit is placed into commercial operation.¹⁰⁴

Appendix A of the HELCO PSIP indicates that HELCO's Fossil Generation Retirement Plan begins on page 5-16 and falls under the heading "Plan for Retiring Fossil Generation."¹⁰⁵ Much like HECO's Fossil Generation Retirement Plan, HELCO plans to retire all of its steam units.¹⁰⁶ DBEDT is encouraged by this aspect of the PSIP. Moreover, as discussed above in relation to HECO's failure to adequately address the feasibility of retiring Waiau 9 and 10, Appendix O of HELCO's PSIP complies with the directive to analyze the costs and benefits of replacing diesel generators.¹⁰⁷

Similar to HECO's PSIP, the HELCO's Fossil Generation Retirement Plan does not analyze how the capacity value of solar, wind, energy storage, and DR resources are factored into the determination of the adequacy of power supply and reserve margins. To the extent that "analysis" exists, it appears to be limited to the summary table and conclusory discussion on pages 4-7 to 4-8, 5-11 to 5-12, and N-9 to N-10. DBEDT notes, but will not repeat, its concerns with the HEI Companies' conclusions about the capacity value of renewables.

On balance, DBEDT concludes that HELCO's Fossil Generation Retirement Plan partially complies with the Commission's directives. As compared to HECO's Fossil Generation Retirement Plan, HELCO's plans for retiring fossil units appear to be more thorough and tangible.

¹⁰⁴ Order No. 31758 at 113-114.

¹⁰⁵ HELCO PSIP, Appendix A at A-2.

¹⁰⁶ *See, e.g., id.* at 5-16 to 5-17. HELCO has five steam units that are fueled by No. 6 fuel oil. These units are located at the Shipman, Hill, and Puna generating stations. *Id.* at 3-4. Whereas HECO plans to retire its steam units by 2030, HELCO plans to retire its steam units by 2022.

¹⁰⁷ *See generally id.*, Appendix O.

However, DBEDT cannot conclude that HELCO's Fossil Generation Retirement Plan contributes to a Preferred Plan that is consistent with and advances the State's policy objectives.

c. HECO's Generation Flexibility Plan.

Order No. 32053 required HECO's PSIP to include a Generation Flexibility Plan that, at a minimum: (1) analyzes whether HECO's existing generation mix has sufficient quick-start, flexible, fuel efficient, dispatchable capacity to accommodate substantial quantities of renewable generation without curtailments; (2) analyzes methods to increase cycling flexibility and ramp rate response; (3) analyzes methods to decrease start-up times of base-load generation; (4) analyzes optimal deployment of new, fuel efficient, quick start, flexible generation versus modifying existing generation; and (5) identifies the action plans, studies, costs, and ratepayer impacts of implementing these methods.¹⁰⁸ According to Appendix A of the HECO PSIP, the Generation Flexibility Plan is discussed under two headings, "Utilization of Renewable Energy," which begins on page 5-25 and appears to run through page 5-26,¹⁰⁹ and "Increasing Operational Flexibility of Existing Steam Generators," which begins on page 5-12 and appears to run through page 5-16.

The discussion under Utilization of Renewable Energy on pages 5-25 to 5-26 is devoid of any substantive analysis that would satisfy the minimum requirements for the Generation Flexibility Plan. Rather, those two pages are limited to two conclusory paragraphs and two charts summarizing the projections of renewable energy on Oahu under the Preferred Plan.

In contrast, the heading "Increasing Operational Flexibility of Existing Steam Generators" appears, at least facially, to address the minimum requirements for the Generation Flexibility Plan. However, HECO fails to provide much of the support for the conclusions expressed on pages 5-

¹⁰⁸ Order No. 32053 at 93-94.

¹⁰⁹ HECO PSIP, Appendix A at A-2.

13 to 5-15 regarding minimum loads, ramp rates, or cycling abilities. In addition, HECO discusses but does not provide details regarding certain studies, including the preliminary testing for “hot start-ups” of Kahe 1, 2, 3, and 4 or Waiau 7 and 8, the June 2013 cycling test for Kahe 3, the “circulation study” that is currently being conducted for Kahe 1.¹¹⁰ Finally, the Generation Flexibility Plan does not clearly identify the action plans, costs, and ratepayer impacts of implementing any particular methods for increasing cycling flexibility and ramp rate response and decreasing start-up times of base-load generation.

DBEDT concludes that HECO’s Generation Flexibility Plan appears to partially comply with the Commission’s compliance directives. With the appropriate supporting analyses and studies to substantiate HECO’s conclusions, the Generation Flexibility Plan could prove to be a step in the right direction. However, given that the Generation Flexibility Plan is dependent on the questionable assumptions in the Preferred Plan, including long-term reliance on LNG, DBEDT is not able to conclude that the Generation Flexibility Plan results in a roadmap or clear plan that is consistent with and advances the State’s energy policy.

d. HELCO’s Generation Flexibility Plan.

Order No. 31758 directed HELCO to develop a Generation Flexibility Plan that, at a minimum: (1) analyzes whether HELCO’s existing generation mix has sufficient quick-start, flexible, fuel efficient dispatchable capacity to accommodate greater quantities of low cost as available renewable energy resources; (2) analyzes methods by which to increase cycling flexibility, and decrease start-up times, of HELCO’s and Hamakua Energy’ Partners’ base load generating units; (3) analyzes the optimal deployment of new, fuel-efficient, quick-start, flexible generation utilizing lowest cost fuels on the HELCO power supply system; and (4) discusses

¹¹⁰ *Id.* at 5-13 to 5-14.

strategies, action plans, and costs for enhancing the generation flexibility and fuel-efficiency of the generation mix of the HELCO power supply system.¹¹¹

Appendix A of the HELCO PSIP indicates that its Generation Flexibility Plan is contained under the heading “Plan for Increasing Generation Flexibility,” which begins on page 5-13 and runs through page 5-15. After reviewing HELCO’s Generation Flexibility Plan, DBEDT’s principal concern is that HELCO fails to present a discussion of enhancing the generation flexibility and fuel-efficiency of the generation mix of the HELCO power supply system (including a discussion of the costs of these enhancements) in terms of a strategy or action plans that are consistent with the State’s energy policies. Rather, HELCO’s Generation Flexibility Plan appears to be a conclusion-driven analysis designed to support the Preferred Plan. Given the fundamental flaws of the Preferred Plan, which DBEDT details in these Comments and in its Comments addressing the HEI Companies’ DGIP, DBEDT is unable to conclude that HELCO’s Generation Flexibility Plan is consistent with or advances the State’s energy policies.

e. HECO’s Must-Run Generation Reduction Plan.

Order No. 32053 required HECO’s PSIP to include a Must-Run Generation Reduction Plan that, at a minimum: (1) analyzes the costs of HECO’s current must-run designation policies, including the costs of providing ancillary services and savings associated with reducing minimum load; (2) analyzes methods for using renewable generations to provide ancillary services, including savings of implementing these methods; (3) analyzes how to DR programs and energy storage can reduce the need for on-line, must-run units to provide ancillary services; (4) analyzes how to maintain and enhance system reliability; and (5) identifies the action plans, strategies, costs, benefits, and timelines to implement methods to reduce operation of must-run units.

¹¹¹ Order No. 31758 at 114-115.

According to Appendix A of the HECO PSIP, the Must-Run Generation Reduction Plan is encompassed within the discussion of the Generation Flexibility Plan that is contained under the heading “Increasing Operational Flexibility of Existing Steam Generators.”¹¹² As discussed above, that discussion partially addresses the specific requirements applicable to the Generation Flexibility Plan. However, it fails to provide any analyses that would satisfy the minimum requirements for the Must-Run Generation Reduction Plan.

Based on the Commission’s clear directive, DBEDT would have expected to see a must-run reduction plan that, at a minimum, contained analysis similar to that contained in MECO’s Generation Fleet Adequacy Analysis (discussed below). Moreover, building on the work of the RSWG, DBEDT would have expected HECO’s Must-Run Generation Reduction Plan to contain detailed analyses of governor, frequency, and inertia response relating to wind and solar generation. Also, DBEDT would have expected HECO to present analyses discussing methods and costs relating to how solid state devices can provide automatic generation control, dynamic reactive power, and voltage control when they are not generating real power. Unfortunately, DBEDT is compelled to conclude that the requisite Must-Run Generation Reduction Plan is completely absent from HECO’s PSIP. Based on this critical omission, DBEDT includes in Part III.B. below a request that the Commission establish a rebuttable presumption that none of HECO’s must-run designations are valid.

f. HELCO’s Must-Run Generation Reduction Plan.

Order No. 31758 required HELCO’s PSIP to include a Must-Run Generation Reduction Plan that, at a minimum: (1) analyzes the costs of HELCO’s current must-run designation policies, including the costs of providing ancillary services and savings associated with reducing minimum

¹¹² HECO PSIP, Appendix A at A-2.

load; (2) analyzes methods by which non-dispatchable renewable energy generators may be utilized to supply ancillary services in lieu of utilizing must-run generation to supply these services; (3) analyzes how to utilize DR programs and energy storage technologies to reduce the need for on-line, must-run fossil generation and to provide operating reserves and other ancillary services; and (4) discusses the strategies, action plans, and costs of implementing methods to reduce or eliminate must-run designation and operation of generating units on HELCO's power supply system.¹¹³

According to Appendix A of the HELCO PSIP, HELCO's Must-Run Generation Reduction Plan is included on page 5-13 under the heading "Plan for Increasing Generation Flexibility."¹¹⁴ Similar to DBEDT's criticism of HECO's Must-Run Generation Reduction Plan, HELCO's Plan for Increasing Generation Flexibility fails to provide any analyses that would satisfy the minimum requirements set forth on pages 115 to 116 of Order No. 31758. Based on this critical omission, DBEDT includes in Part III.B. below a request that the Commission establish a rebuttable presumption that none of HELCO's must-run designations are valid.

g. MECO's Generation Fleet Adequacy Analysis.

Order No. 32055 required MECO's PSIP to include a Generation Fleet Adequacy Analysis that included requirements similar to the requirements of the aforementioned Generation Flexibility Plans and Must-Run Generation Reduction Plans that HECO and HELCO were required to submit. At a minimum, MECO's Generation Fleet Adequacy Analysis was to: (1) evaluate whether MECO's existing generation mix has sufficient quick-start, flexible, fuel efficient, dispatchable capacity to accommodate integration of existing and substantial additional

¹¹³ Order No. 31758 at 115-116.

¹¹⁴ HELCO PSIP, Appendix A at A-2.

variable renewable energy resources without significant curtailment; and (2) include reviews of MECO's must-run designations, units operated on fixed schedules, and current retirement plans for existing units.¹¹⁵

In Appendix A, MECO contends that this analysis is presented on page 5-16 of its PSIP under the heading "Roles of Generation Resources," which appears to run through page 5-26. For the most part, this discussion appears to comply with the Commission's directives.¹¹⁶ In particular, DBEDT notes that, unlike HECO and HELCO, MECO complied with the requirement to review its must-run designations.¹¹⁷ At pages 5-21 to 5-23 of its PSIP, MECO identifies its must-run units and provides an action plan for reducing must-run generation. DBEDT believes this discussion represents real progress. For example, the modifications of the DTCC1 and DTCC2 units, either through fuel switching or lower minimum loads, should add flexibility and render the units better suited to accommodate variable generation. In any event, regardless of the merits of this plan, HECO and HELCO should have, but did not, provide similar plans in their respective PSIPs.

h. HECO's Environmental Compliance Plan.

Order No. 32053 required HECO's PSIP to include an Environmental Compliance Plan that, at a minimum: (1) analyzes fuel expenses, O&M expense, and capital costs of switching from low-sulfur fuel oil ("LSFO") to ultra-low sulfur diesel ("ULSD"), and resulting reductions in unit and system emissions; (2) analyzes fuel expenses, O&M expense, and capital costs of switching from LSFO to natural gas, and resulting reductions in unit and system emissions; (3) analyzes the

¹¹⁵ Order No. 32055 at 87-88.

¹¹⁶ MECO does not appear to address the directive to review units operated on fixed schedules.

¹¹⁷ MECO explicitly represents that its "Preferred Plan for the island of Maui reduces 'must run' generation...." MECO PSIP at 5-1. HECO and HELCO do not make comparable claims in explaining the Preferred Plans for Oahu or Hawaii.

existing fossil units that should be candidates for fuel switching versus replacement with new generators; and (4) discusses strategies and action plans to modify the generation base and delivery infrastructure, including costs and benefits.¹¹⁸ As explained below, HECO's Environmental Compliance Plan is inadequate.

Appendix A of HECO's PSIP represents that HECO's Environmental Compliance Plan begins on page 5-60, and presumably runs through page 5-62. If Appendix A is accurate, it appears that HECO ignored the requirement to analyze the fuel expenses, O&M expense, and capital costs related to switching from LSFO to natural gas. HECO's "analyses" of fuel expenses, O&M expense, and capital costs related to switching from LSFO to ULSD are limited to the following sentence. "Fuel blending is a less costly alternative to fuel switching to 100% diesel."¹¹⁹ HECO's PSIP is unacceptable in this regard.

Although not identified on Appendix A, pages F-3 to F-5 of the HECO PSIP contain fuel supply and price forecasts for petroleum-based diesel fuels,¹²⁰ biodiesel, and LNG. On page F-5, HECO presents Table F-2, which summarizes HECO's fuel price forecasts from 2014 to 2022. Other than general descriptions of the data used to determine the forecasts for petroleum-based diesel fuels and biodiesel,¹²¹ HECO's PSIP is devoid of any detailed analysis or explanations that support the reasonableness of the forecasts. With regard to LNG, HECO claims that its pricing

¹¹⁸ Order No. 32053 at 96-97.

¹¹⁹ HECO PSIP at 5-60.

¹²⁰ Petroleum-based diesel fuels are diesel oil number 2, LSFO, and ULSD.

¹²¹ HECO PSIP, Appendix F at F-4. According to HECO, it used Energy Information Administration ("EIA") data to derive the forecasts for petroleum-based diesel fuels. In particular, HECO based on the relationship between historical crude oil commodity prices and historical fuel purchase prices. In the absence of EIA forecast data for biodiesel, HECO states that it "used the Food and Agricultural Policy Research Institute at Iowa State University" to create its forecast. *Id.*

analyses are described in Appendix I.¹²² However, what limited analysis is contained in Appendix I relates to delivering gas to a bulk LNG terminal after 2022.¹²³ There does not appear to be any information supporting HECO's projection of LNG prices from 2017 through 2021. As discussed in Part III.A.1 *supra*, long-term reliance on LNG, especially when it has not been proven to be cost effective, is inconsistent with the State's energy policy and the specific directive to use LNG as a transitional fuel only if it can be deployed at a true cost savings. Thus, even assuming HECO's PSIP provided accurate and detailed analyses of the impact of switching from LSFO to LNG, that analysis would not necessarily contribute to an action plan that advances the State's interests. In short, HECO's PSIP does not appear to contain any discernable cost-benefit comparisons of various fuel switching options.

HECO's Environmental Compliance Plan does not respond to the requirement to analyze HECO's existing fossil units and determine which units are candidates for fuel switching as opposed to replacement with new generators. However, HECO discusses units that are suitable candidates for fuel switching elsewhere in its PSIP.¹²⁴ Unfortunately, DBEDT cannot conclude that the disjointed discussion in the PSIP constitutes a clear strategy and action plan to modify the generation base delivery infrastructure to be consistent with the State's clean energy policies.

Reducing GHG emissions in the most technically-feasible and cost-effective manner is a key objective of Hawaii's energy policies, and it is ensconced in the foundational body of laws and regulations related to renewable energy and clean air. Hawaii's Renewable Portfolio Standard ("RPS") and Energy Efficiency Portfolio Standard ("EEPS") are already making a significant

¹²² *Id.*

¹²³ *Id.*, Appendix I at I-1 to I-4.

¹²⁴ *See, e.g., id.* at 5-19 to 5-21.

impact on reducing GHG emissions by avoiding fossil-based generation, and this provides significant environmental, health and economic benefits. Hawaii's recently enacted GHG rules in HAR 11-60.1 give clear credit to these effective "outside the fence-line" environmental compliance strategies. Similarly, the proposed Federal Clean Power Plan under Section 111(d) of the Clean Air Act utilizes renewable energy generation and energy efficiency as two of the four building blocks for compliance.

DBEDT would expect to see an emissions reduction and economic impact analyses of increased renewable energy generation, energy efficiency, and demand response as they are conceived in the HEI Companies' plans. The lack of GHG impact analysis could unfortunately lead to suboptimal planning decisions if the environmental costs and benefits of various generating options and compliance mechanisms are not properly accounted for and measured.

As a result of the foregoing, DBEDT must conclude that this aspect of the plan fails to comply with the both the State's articulated energy policy directives and the Commission's specific requirements as contained in Order No. 32053. Specifically, the lack of analysis of the environmental and economic impact of various power supply decisions fails to achieve a balance as required in the State's third directive: balancing technical, economic, environmental, and cultural factors.

i. HECO's Key Generator Utilization Plan.

Order No. 32053 at pages at 97-99 required HECO to, at a minimum, analyze whether to retire or extend the life of the AES coal plant, the Kalaeloa Energy Partners dual-train combined cycle plant, the CT-1 generating plant, and Kahe Units 5 and 6. Appendix A of HECO's PSIP indicates that the Key Generator Utilization Plan begins on page 5-16. The discussion of this plan appears to run through page 5-21.

In addition to the concerns discussed above regarding the PSIPs' long-term and unsubstantiated reliance on LNG, DBEDT's principal concern with the Key Generator Utilization Plan pertains to the AES generating plant by 2022. "AES has represented to Hawaiian Electric that it is currently under financial distress, primarily because there is no financial reserve at the project (historical profits from AES have been paid as dividends to its parent company) and energy payments made to AES under the [Power Purchase Agreement ("PPA")] pricing formula may not fully cover their cost of coal under conditions of high annual capacity factors."¹²⁵ To address this situation, the HEI Companies claim it is in the customers "financial interest to keep AES operating on the system without interruption under the terms of the existing PPA" and is subsequently "negotiating in good faith with AES to explore the possibility of an amendment to the PPA."¹²⁶

DBEDT is concerned that this existing situation adversely impacts ratepayers in two ways. First, the existing PPA agreement, poor management, or the HEI Companies' facilitation resulted in AES failing to set aside financial reserves for the project. In turn, as AES faces "financial distress," there is no buffer for ratepayers to mitigate against these losses and potential insolvency of AES and the resulting cost associated with either bailing-out AES or finding another more expensive generating source (as AES is presently the "lowest cost energy" provider on Oahu). Secondly, the lack of financial reserves also creates a funding void for planned AES plants conversion to a 50%/50% coal/biomass plant, again adversely impacting ratepayers in the form of assumption of conversion cost.

Further, while DBEDT understands the HEI Companies' desire to maintain "inexpensive" (not accounting for externalities) baseload generating capacity, thereby explaining its willingness

¹²⁵ *Id.* at 5-17.

¹²⁶ *Id.* at 5-17.

to help AES shift to biomass, the technical and economic viability of this approach needs more scrutiny. Unfortunately, there is neither supporting data nor a sufficient explanation of this shift provided – it is just assumed to occur.

j. HECO's Optimal Renewable Energy Portfolio Plan.

Order No. 32053 required HECO to, at a minimum: (1) analyze the appropriate mix of firm and variable renewable generators; (2) analyze the appropriate mix of solar PV generation versus other, higher-capacity-factor resources; (3) identify siting considerations, grid interconnection costs, the benefits of geographically dispersed resources, and minimizing community impacts; (4) identify the costs of integrating different levels and mixes of renewable generation, including reserve requirements, ancillary services requirements, facilities upgrades, etc.; and (5) identify the cost and ratepayer impact of fully attaining and exceeding the State's Renewable Portfolio Standard ("RPS"). As is demonstrated below, HECO's Optimal Renewable Energy Portfolio Plan stands in stark contrast to the Key Generator Utilization Plan discussed in the preceding subsection.

Appendix A of the HECO PSIP represents that the "Optimal Renewable Energy Portfolio Plan" is under the heading "Hawaiian Electric: Unprecedented Levels of Renewable Energy," which begins on page 5-1 and spans page 5-5.¹²⁷ Without any analytical support, pages 5-1 and 5-2 simply identify HECO's projections of renewable generation under the Preferred Plan. Page 5-3 identifies the respective contributions of renewable energy resources to meet the RPS, but provides no "plan" demonstrating why, much less *that*, the mix of renewable energy resources is optimal. Pages 5-4 and 5-5 repeat the prior, generalized discussion of how the HEI Companies developed the Preferred Plan. While these pages allude to a "collaborative, analytical process,"

¹²⁷ Page A-2 of the HECO PSIP actually states that the "Optimal Renewable Energy Portfolio Plan" begins on page 5-11. DBEDT believes this reference is an error as the referenced heading is found at page 5-1.

“sensitivity analyses,” and a “stage-gated, multi-team, analytical, and innovative process,” no detail is provided.¹²⁸

In short, HECO appears to have ignored the Commission’s express directives to provide an Optimal Renewable Energy Portfolio Plan that: (1) identifies key technical, economic, and geographic location parameters that delineate the optimal, least-cost diverse portfolio of renewable energy resources; (2) analyzes the appropriate mix of variable and firm renewable energy resources; (3) analyzes the appropriate mix of solar PV resources versus other renewable energy resources with higher capacity factors; (4) analyzes on- and off-island resources to “harness world-class renewable energy regimes but balanced against grid interconnection costs, capture meteorological diversity benefits and diversify project locations to minimize community impacts;” (5) analyzes reserve margins, ancillary services and generation unit upgrades or replacements that are necessary to integrated different levels, mixes, and locations of renewable energy technologies; and (6) analyzes cost and ratepayer impacts resulting from full attainment of RPS and compares full attainment to various levels of exceeding the RPS.¹²⁹

k. MECO’s Optimal Renewable Energy Portfolio Plan.

Order No. 32055 directed MECO to develop an Optimal Renewable Energy Portfolio Plan to identify and describe how MECO will develop an optimal, least-cost, diverse portfolio of renewable energy resources to meet and exceed a 40% level of renewable energy. The Commission explained that MECO’s Optimal Renewable Energy Portfolio Plan is not to assume

¹²⁸ Given HECO’s claim that “analytics are the centerpiece of the effort” (HECO PSIP at 5-5), DBEDT was surprised by the lack of analytics provided in support of the Preferred Plan.

¹²⁹ Order No. 32053 at 99-101. Again, these are the minimum requirements that should have been included in the Optimal Renewable Energy Portfolio Plan.

fixed schedules,¹³⁰ but instead is to use current utility “best practices,” including security constrained unit commitment and economic dispatch to respond in real-time to changing conditions in load, wind, and solar. Further, the Optimal Renewable Energy Portfolio Plan is to take full advantage of the technical flexibility offered by each resource, respond to the actual real-time conditions, optimize the utilization of DR and storage resources, and consider the most economic use of new, flexible generation. The Commission explained that MECO’s Optimal Renewable Energy Portfolio Plan is to include, at a minimum, these five components: (1) a detailed plan to increase renewable energy utilization beyond current approximately 30% in 2013; (2) an analysis of the appropriate mix of variable and firm renewable energy resources; (3) an analysis of the appropriate mix of solar PV resources versus other higher capacity factor renewable energy resources; (4) discussion of costs and technical challenges relating to reserve margins, ancillary services and generation unit upgrades or replacements required to integrate different levels, mixes and locations of renewable energy technologies; and (5) an analysis of how an interisland transmission cable connecting the Maui island power system to Oahu would affect the economics and operation of the Maui power system.¹³¹

According to Appendix A, MECO’s Optimal Renewable Energy Portfolio Plan begins on page 5-8 under the heading “Generation and Energy Mix,” which runs through page 5-16. Unfortunately, this discussion fails to comply with the Commission’s directives. This discussion omits any analysis of how an interisland cable connecting Maui and Oahu would affect the

¹³⁰ As discussed above, MECO’s Generation Fleet Adequacy Analysis was also to demonstrate that MECO’s optimization does not assume fixed schedules. MECO fails to provide this demonstration in either the Generation Fleet Adequacy Analysis or the Optimal Renewable Energy Portfolio Plan.

¹³¹ Order No. 32055 at 88-90.

economics and operation of Maui's power system.¹³² As DBEDT discusses in more detail above, this omission is unacceptable in light of the State's clear energy directives and DBEDT's analysis demonstrating the cost-effectiveness of the Oahu-Maui grid tie.

Where MECO's Generation and Energy Mix section addresses the required components, that discussion is limited to narrative summaries and charts and tables that lack any analytical support. For example, pages 5-12 and 5-13 contain two figures showing the projected renewable resource mix for Maui. Page 5-14 and 5-15 contains three figures showing a decrease in fuel consumption as the mix of renewable generation resources changes over time. Each of these figures lacks context and analytical support.

To the extent MECO's Optimal Renewable Energy Portfolio Plan is a major component of MECO's Preferred Plan, DBEDT cannot conclude that MECO's Preferred Plan is consistent with the State's clean energy goals.

I. Generation Commitment and Economic Dispatch Reviews.

Each HEI Company was ordered to conduct a "Generation Commitment and Economic Dispatch Review." While the three orders directing the HEI Companies to develop PSIPs identified different components for each Generation Commitment and Economic Dispatch Review, the three orders also identify components of these reviews that are applicable to more than one of the HEI Companies. Each of the HEI Companies' PSIPs purport to present this review in Appendix N, and the three versions of Appendix N appear to be identical.¹³³ Given the way the

¹³² Elsewhere in its PSIP, MECO discusses an inter-island grid tie. *See, e.g.*, MECO PSIP at 3-13 to 3-14. Ultimately, MECO concludes that a grid tie connecting Oahu and Maui is not cost effective. *Id.* at 7-3. As discussed herein, this unsupported conclusion is contrary to DBEDT's detailed analysis and the State's clean energy directives.

¹³³ *See* HECO PSIP, Appendix A at A-2; MECO PSIP, Appendix A at A-2; HELCO PSIP, Appendix A at A-2.

HEI Companies addressed this requirement, this subsection begins by first discussing a threshold matter relating to the Generation Commitment and Economic Dispatch Review. Next, DBEDT addresses three requirements that are common to all three HEI Companies.¹³⁴ Then, this subsection addresses the six requirements that apply to both HECO and HELCO.¹³⁵ As all requirements applicable to HECO and MECO are subsumed in the discussion of the common requirements, the last part of this subsection identifies and discusses the three requirements that are unique to HELCO.¹³⁶

As a threshold matter, DBEDT submits that the Generation Commitment and Economic Dispatch Reviews provided a valuable opportunity for the HEI Companies present a proposal for shifting the utility business model away from vertical integration and toward an independent power supply integrator/operator model. While this new model could take many different forms, a proposal that is currently before the New York Public Service Commission recognizes the value

¹³⁴ Those requirements common to each of the HEI Companies are: (1) a demonstration that current unit commitment and economic dispatch processes will ensure that fuel costs will be minimized in the future; (2) a demonstration that current policies for selecting ancillary services providers will continue to minimize costs in the future; and (3) an identification of ways to improve transparency regarding its unit commitment and economic dispatch processes. *See* Order No. 31758 at 116-120; Order No. 32053 at 101-103; Order No. 32053 at 90-91.

¹³⁵ Those requirements are: (1) a demonstration that current unit commitment and economic dispatch processes do not afford preferential treatment to HEI Companies' units; (2) a description of the methodologies for forecasting supply from variable renewable generation, as well as processes for incorporating those forecasts in its unit commitment and economic dispatch processes; (3) a description of processes for ensuring that the economic dispatch formula accurately reflects actual technical and operating characteristics, including fuel costs; (4) a description of how energy storage and DR are incorporated in unit commitment and economic dispatch processes; (5) an identification of whether current unit commitment and economic dispatch policies and operational practices favor specific generation technologies or resources or PPA pricing structures; and (6) an identification of potential economic, regulatory, or contractual constraints that would preclude optimal unit commitment and economic dispatch. *See* Order No. 31758 at 118-120; Order No. 32053 at 102-103.

¹³⁶ Those requirements are: (1) a demonstration of how HELCO's current unit commitment and economic dispatch policies and operational practices minimize the curtailment of renewable energy; (2) a demonstration that HELCO's energy management system ("EMS") computer software employs appropriate computational methods, contains accurate models of HELCO's system, and is sufficiently robust to dispatch a generation portfolio comprised of flexible fossil resources and dynamic renewable energy resources; and (3) an identification of the amount of annual generation output from 2009 to 2013 (in MWh and as a percent of total) that is produced by seven specified resource types. Order No. 31758 at 117-119.

of incumbent utilities by proposing that the utilities serve as the distribution system operator. By developing a similar proposal, the HEI Companies could have demonstrated that the State's goals and public policy objectives can be met through a transformational process that includes a continuing, important, dynamic, and profitable role for the HEI Companies. DBEDT acknowledges that the HEI Companies were not directed to identify any particular utility business model. Further, DBEDT recognizes that the HEI Companies were not necessarily directed to propose a new utility business model through their respective reviews of generation commitment and economic dispatch processes. However, as a component of the State's and the Commission's efforts to transform the utility industry in pursuit of the State's clean energy policies, DBEDT submits that this particular component of the PSIPs could have served as a mechanism for the HEI Companies to demonstrate their commitment to Hawaii's energy future by establishing their role as a transformational player. In short, rather than using the Generation Commitment and Economic Dispatch Reviews (or the PSIPs more broadly) as a means of achieving transformational change, DBEDT is somewhat discouraged that the HEI Companies apparently viewed the Generation Commitment and Economic Dispatch Reviews simply as an opportunity to propose incremental changes to the current structure.

With regard to the requirements common to HECO, MECO, and HELCO, DBEDT is encouraged by the HEI Companies' willingness to make improvements recommended by Blue Planet that are intended to create additional visibility and transparency.¹³⁷ Beyond that, DBEDT is not convinced that the Generation Commitment and Economic Dispatch Reviews demonstrate that: (1) current unit commitment and economic dispatch processes will ensure that fuel costs will

¹³⁷ See, e.g., HECO PSIP, Appendix N at N-10; see also *id.* at N-7 (discussing recommended enhancements to HECO's Renewable Watch website).

be minimized in the future; or (2) current policies for selecting ancillary services providers will continue to minimize costs in the future. DBEDT's primary concern is based on the fact that unit commitment and economic dispatch processes are dependent on inputs. Given that the HEI Companies' Preferred Plans does not appear to be consistent with the State's energy policies, DBEDT cannot conclude that inputs to the unit commitment and economic dispatch processes that stem from the Preferred Plans will result in the commitment or dispatch of the optimal resources.

In addition, DBEDT questions whether the HEI Companies adequately demonstrated that current policies for selecting ancillary services providers will continue to minimize costs in the future. The HEI Companies appear to rely on a summary of the processes for identifying system security constraints and the combinations of resources that can be used to address those constraints.¹³⁸ Then, the HEI Companies state that they will need to "continually evaluate the economics of using existing resources to meet ancillary service and system security requirements versus meeting those needs with alternative resources including energy storage and demand response."¹³⁹ This discussion does not directly address the Commission's specific compliance directives.

Concerning the components of the Generation Commitment and Economic Dispatch Review that apply to both to HECO and HELCO, DBEDT notes the following concerns and issues. First, DBEDT does not necessarily agree with the statement that the HEI Companies' unit commitment and dispatch "does not differentiate between dispatchable IPPs and utility-owned assets."¹⁴⁰ As one example, to the extent HECO and HELCO have failed to justify their must-run

¹³⁸ *Id.*, Appendix N at N-2.

¹³⁹ *Id.*

¹⁴⁰ *Id.*, Appendix N at N-4.

designations, any unit commit and dispatch process that affords priority to must-run units could unduly favor utility-owned assets.¹⁴¹ Similarly, while HECO and HELCO described how energy storage and DR are incorporated in unit commitment and economic dispatch processes,¹⁴² DBEDT is concerned that the assumptions about energy storage and DR contained in the Preferred Plans may not be consistent with the State's energy policies. Thus, while HECO's and HELCO's description may not present problems in the abstract, the practical result may be unit commitment and economic dispatch processes that fail to maximize the appropriate levels of energy storage and DR.

Second, HECO and HELCO described the methodologies for forecasting supply from variable renewable generation, as well as processes for incorporating those forecasts in its unit commitment and economic dispatch processes.¹⁴³ However, given the lack of supporting analysis, DBEDT was unable to conclude that the HECO's and HELCO's analyses are based on the marginal production cost of all resources rather than contract prices or estimates.¹⁴⁴

Third, given its doubts about the accuracy of certain technical and operating characteristics, i.e., transmission and distribution line loading, DBEDT was not able to conclude that the economic dispatch formula accurately reflects the systems' technical and operating characteristics. Ultimately, DBEDT submits that this conclusion can only be made as part of a comprehensive review, which includes review of the technical analyses presented in the DGIP.

¹⁴¹ As discussed immediately above, the failure to justify must-run designations is likely to result in relatively higher fuel costs than is warranted.

¹⁴² HECO PSIP, Appendix N at N-5 to N-6.

¹⁴³ *Id.*, Appendix N at N-5.

¹⁴⁴ DBEDT believes that HECO's and HELCO's analyses are, in fact, based on the marginal production cost. However, DBEDT was not able to substantiate its belief based on the filing as presented.

Fourth, HECO's and HELCO's unit commitment and dispatch processes clearly favor specific generation technologies or resources or PPA pricing structures.¹⁴⁵ The issue, however, is more properly focused on whether disparate treatment is warranted. Resolution of that issue must be reached through a comprehensive review. The attached Utility Planning Map details the contours of that comprehensive review.

Finally, DBEDT notes the following with regard to its review of the HELCO-specific requirements. Most noticeably, HELCO appears to have ignored the requirement to identify the amount of annual generation output from 2009 to 2013 (in MWh and as a percent of total) that is produced by as-available generation, contractual must-take generation, minimum output from must-run generators, fixed schedule generation, regulation down reserves, generation dispatched to meet load, or other resources. Second, DBEDT is concerned that HELCO merely states, rather than demonstrates, that its unit commitment and economic dispatch policies and operational practices minimize the curtailment of renewable energy. Finally, DBEDT is concerned that the five sentences HELCO devotes to its EMS¹⁴⁶ do not adequately demonstrate that HELCO's EMS computer software employs appropriate computational methods, contains accurate models of HELCO's system, and is sufficiently robust to dispatch a generation portfolio comprised of flexible fossil resources and dynamic renewable energy resources.

Based on the foregoing discussion, DBEDT concludes that the HEI Companies' Commitment and Economic Dispatch Reviews are partially compliant with the Commission's directives. However, DBEDT cannot conclude that the Generation Commitment and Economic Dispatch Reviews contribute to strategies or clear action plans that are consistent with the State's

¹⁴⁵ HECO PSIP, Appendix N at N-4.

¹⁴⁶ *Id.*, Appendix N at N-3.

policies. Rather, DBEDT is generally concerned that the reference to the need to maintain “reliability” may be overused and unjustified in order to support unit commitment and dispatch processes that favor the HEI Companies. This concern is best addressed as part of a comprehensive review.

m. MECO’s Analysis of Non-Transmission Alternatives.

In describing MECO’s PSIP requirements, Order No. 32055 required MECO to analyze how non-transmission alternatives (“NTAs”) such as energy storage systems, customer demand response, aggregated PV capacity with advanced inverter functionality, and new quick-starting, flexible conventional distributed generation sets could be utilized to avoid construction of new transmission lines such as the proposed South Maui transmission line (i.e., the Maalaea-Kamalii project), the planned Waiinu-Kanaha transmission upgrade, and future transmission capital investments.¹⁴⁷

MECO addresses these issues in Appendix O of its PSIP.¹⁴⁸ Appendix O contains two transmission studies, a study of NTAs related to the Maalaea-Kamalii project and another study of NTAs related to the Waiinu-Kanaha transmission upgrade.¹⁴⁹ As a general matter, DBEDT commends MECO for the thorough nature of the two studies. However, DBEDT has several concerns.

¹⁴⁷ Order No. 32055 at 92.

¹⁴⁸ MECO PSIP, Appendix A at A-2.

¹⁴⁹ *Id.*, Appendix O at O-2 to O-92 (discussing the Maalaea-Kamalii project) and O-93 to O-232 (discussing the Waiinu-Kanaha upgrade project).

With regard to the Maalaea-Kamalii project, DBEDT would like to see specific proposals.¹⁵⁰ Moreover, DBEDT would like to see specific proposals presented in a manner that ties in with an overall strategy or action plan to meet the State's clean energy policies. DBEDT is concerned with MECO's conclusion to proceed with the Waiinu-Kanaha transmission upgrade.¹⁵¹ MECO acknowledges that a battery energy storage system and/or DG could void the need for the Waiinu-Kanaha transmission upgrade, yet it contends these resource options are not viable because there are no known locations on the 23 kV network for locating these resources.¹⁵² This contention cannot be reconciled with MECO's recognition that "customer-side energy storage might be aggregated to achieve the same operational attributes as utility scale energy storage."¹⁵³ Without sufficient support demonstrating that there are no possible storage options on the 23 kV network, DBEDT cannot conclude that the assumptions regarding the Waiinu-Kanaha transmission upgrade are reasonable.

n. MECO's Analysis of Electrical Pumping Loads as Fast-Response and Dynamic DR Resources.

Order No. 32055 required MECO to analyze how it will use the substantial electrical pumping loads on Maui installed by water and wastewater utilities and by agriculture for irrigation wells and pumps to provide fast-response, dynamic DR resources to the MECO power system.¹⁵⁴ Appendix A of MECO's PSIP does not specifically identify this requirement, and MECO's PSIP appears to omit discussion of this requirement. At most, MECO's PSIP contains a two-sentence

¹⁵⁰ For example, MECO states that technically viable proposals "will need to be economically evaluated." *Id.*, Appendix O at O-18.

¹⁵¹ *Id.*, Appendix O at O-102.

¹⁵² *Id.*

¹⁵³ *Id.* at 5-38.

¹⁵⁴ Order No. 32055 at 92-93.

description of the Commercial & Industrial Pumping Program that is contained in the HEI Companies' IDRPP. This material omission is unacceptable.

o. MECO's Analysis of Pumped Storage Hydro Providing Ancillary Services.

Order No. 32055 required MECO to analyze how it could utilize pumped storage hydro resources to optimize the economics and operation of the MECO power system, including providing off-line reserves and other ancillary services, as well as provide bulk energy storage for high penetration of variable renewable energy resources.¹⁵⁵ Appendix A of MECO's PSIP does not specifically identify this requirement, but several appendices appear to address this requirement.¹⁵⁶

In Appendix B, MECO explains that "[a] modern pumped-storage facility can provide a number of ancillary services, such as frequency regulation, voltage support (dynamic reactive power), spinning and non-spinning reserve, load following and black start as well as energy services such as peak shaving and energy arbitrage."¹⁵⁷ In Appendix J, MECO asserts that pumped storage hydroelectric energy storage technology is "mature," "proven," and "well understood."¹⁵⁸ Unfortunately, MECO concludes that pumped storage hydro is not currently cost-effective and, therefore, was excluded from the Preferred Plan.¹⁵⁹ Given that the Preferred Plan relies heavily on long-term use of LNG, it is not clear that conclusions flowing from that Preferred Plan are

¹⁵⁵ *Id.* at 93.

¹⁵⁶ MECO also includes conclusory statements and tables regarding pumped storage in the body of its PSIP. *See, e.g.,* MECO PSIP at 7-2.

¹⁵⁷ *Id.*, Appendix B at B-31 to B-32.

¹⁵⁸ *Id.*, Appendix J at J-2, J-5, J-13.

¹⁵⁹ *Id.* at 7-2.

consistent with the State's clean energy policies and directives. Thus, DBEDT cannot conclude that MECO is correct to assert that pumped storage hydro is not cost-effective.

B. What "Next Steps" are Necessary to Avoid Further Unnecessary Delay in Pursuing the State's Public Policy Goals?

The deficiencies DBEDT identifies in the foregoing Comments raise fundamental questions, such as "Where should the Commission go from here?" and "How many opportunities should the HEI Companies be afforded to demonstrate that they understand the urgent need to address the rapidly changing business environment in which they operate in order to advance the State's public policy objectives?" The PSIPs (and the related DGIP) certainly have promising components. On balance, however, DBEDT is disappointed with the HEI Companies' general approach to the PSIPs, not to mention the HEI Companies' historical approach that led the Commission to require development of the PSIPs. Further, the HEI Companies' continuing failure to identify a future business model flies in the face of the Commission's Inclinations and is unacceptable.

While accountability is necessary, the Commission must not allow these deficiencies to delay pursuit and achievement of the State's clean energy policies. Consequently, DBEDT recommends that the Commission promptly take the actions identified below.

- Whether in this docket or in other related proceedings such as the DER docket, the Commission should require the HEI Companies to develop, file, and support their future business case. In doing so, it need not be overly prescriptive but must clearly require the HEI Companies to demonstrate the desired end-state objective, decision framework, assumptions, and timeline for actions the HEI Companies will take to achieve a specific penetration of indigenous renewable resources at lower costs to ratepayers.

- The Commission should issue its ruling in Docket No. 2013-0169 and begin the procurement process for the Oahu-Maui grid tie.

- The Commission should establish a rebuttable presumption that none of HECO's or HELCO's must-run designations are valid in order to avoid undue delay that may be caused by HECO's and HELCO's failures to comply with the requirements to provide a Must-Run Generation Reduction Plan. To overcome the presumption, HECO and HELCO must present clear and convincing evidence demonstrating the propriety of must-run designations on a unit-by-unit basis.¹⁶⁰ Unless and until these showings are made, HECO and HELCO should not be allowed to recover a return on or of any must-run unit.

- The Commission should establish the appropriate capacity values and resource estimates of solar, wind, energy storage, and DR resources.

- The Commission should establish a rebuttable presumption, as set forth in DBEDT's concurrently filed Comments addressing the DGIP, wherein DG systems of 10kW or less are immediately approved under certain circumstances.

In addition to these actions, DBEDT also recommends that the Commission require the HEI Companies to, within 10 days:

- Correct and refile Appendix A of each PSIP to provide accurate cross references that identify with specificity the location in each PSIP where the required analyses, discussions, explanations, etc. are contained.

¹⁶⁰ In Order No. 32053, the Commission indicated that an issue to be addressed in the instant proceeding is whether the Commission should institute a formal review and approval process regarding the designation of the HEI Companies' must-run units. Order No. 32053 at 70. DBEDT's proposal to establish a rebuttable presumption is offered in response to that statement.

- Provide detailed comparative analysis of the five “end state options” considered in Step A and explain why the Balanced Portfolio DG 2.0 was selected.

- Explain whether anything was compromised by “quickly” evaluating the five Step A “end state options” at a high-level?¹⁶¹ For example, the HEI Companies should be required to identify, quantify, and explain the impact of their decision not to “consider most existing configurations.”¹⁶²

- Quantify and explain the magnitude of the differential in “all-in societal generation and T&D costs” between the balanced portfolio-DG heavy and the balanced portfolio-DG 2.0.¹⁶³

- Provide a detailed qualitative and quantitative explanation of how the HEI Companies’ LNG plans align with or deviate from the State’s five LNG tenets, namely: (1) ensuring substantive savings to users and ratepayers (greater than 30% for electricity generation); (2) ensuring transparency in a regulated structure that aligns with and supports the State’s renewable energy goals, and meets all users’ needs; (3) aggregating demand through a consortium approach to achieve sufficient economies of scale, buying power, and risk-sharing (with zero commodity price risk being borne by ratepayers); (4) diversifying sources and contract terms/durations to protect against risk; and (5) selecting only proven infrastructure and logistics solutions with experienced and creditworthy partners. The HEI Companies should be required to provide the rationale and justification for any deviation to the above mentioned tenets. The HEI Companies should also be required to provide a quantification of the short-term and long-term costs of the LNG proposal in the Preferred Plans. The HEI Companies must also provide a qualitative and quantitative

¹⁶¹ See, e.g., HECO PSIP at 2-7.

¹⁶² *Id.*

¹⁶³ See, e.g., *id.* at 2-9 to 2-10.

description of how they plan to protect users from commodity price risk and volatility. Further, the HEI Companies must also provide a detail plan of how they intend to transition LNG away from the electricity generation to other uses, such as transportation.

- Provide all data and supporting analysis showing the breakdown, justification, and rationale for the chosen capital expenditures contained in the Preferred Plans, and also explain the rate impacts associated with these facilities on the HEI Companies' anticipated revenue requirements.

- Identify all other methods that were considered for determining the capacity value of renewables, in addition to the "loss of load probability" method. The HEI Companies should be required to explain why alternative methods were not adopted. If no alternatives were considered, the HEI Companies should be required to explain why not. Further, the HEI Companies should be required to address the RSWG TRC recommendations which stated that, in contrast to the HEI Companies' assertions, the HECO, MECO, and HELCO capacity values for PV should not be zero.

- Identify all measures considered to address the assertion that the balanced portfolio-DG heavy "puts pressure on the reliability of the system given the high level of variable renewables."¹⁶⁴ If any identified measures were explored, the HEI Companies should be required to explain and provide the result of the analysis. If no measures were considered, or any measure was considered unsuitable, then the HEI Companies should be required to explain why.

Finally, DBEDT recommends that the Commission should require, within 30 days:

- HECO to explain why it is not feasible to retire each fossil unit sooner than specified on pages 5-21 to 5-22 of the HECO PSIP.

¹⁶⁴ See, e.g., *id.*

- HECO to identify the anticipated ratepayer savings that would result from the retirements identified in its Fossil Generation Retirement Plan.

- HECO to provide an appendix, in a form comparable to Appendix O of the HELCO PSIP, that addresses the feasibility of retiring Waiau 9 and 10.

- HECO to provide a compliant Optimal Renewable Energy Portfolio Plan.

- MECO to provide a compliant Optimal Renewable Energy Portfolio Plan.

- HECO to provide an Environmental Compliance Plan that, at a minimum, responds to the issues identified pages 96-97 of Order No. 32053.

- HELCO to identify the amount of annual generation output from 2009 to 2013 (in MWh and as a percent of total) that is produced by as-available generation, contractual must-take generation, minimum output from must-run generators, fixed schedule generation, regulation down reserves, generation dispatched to meet load, or other resources.

Ultimately, DBEDT envisions a Commission decision, or a series of decisions, that are based on a prompt and comprehensive review¹⁶⁵ of all of the interrelated programs, initiatives, filings, and actions that are detailed in DBEDT's Comments and identified on the attached Utility Planning Map. This comprehensive review will ensure to the maximum degree possible that all actions taken are in harmony and strategically focused on meeting the State's energy policy and directives.

¹⁶⁵ DBEDT recommends a comprehensive review based on the interrelationship of multiple initiatives that, collectively, advance the State's clean energy policy. *See, e.g.*, Order No. 32052 ("The PSIPs will address many of the commission's Principal Issues such as environmental compliance, fuel switching, generation fleet modernization, and utilization of renewable energy projects, energy storage and demand response to provide ancillary services."); *see also* Order No. 32053 (explaining that the DGIPs are necessary to mitigation "potential constraints that exist due to high penetration of solar PV system..."); Order No. 32054 at 118-119 ("Demand response programs are an important part of the overall planning and operation of the generation and distribution functions of the electric utility.").

IV. CONCLUSION

Traditionally, the HEI Companies' approach has been to react slowly to change. It is easy to view this reaction as indifference, passive opposition, or active obstruction to change. Regardless of the motivation for this reaction, however, the PSIPs presented the HEI Companies with the unique opportunity to take a leadership role by clearly articulating a future business case that will result in the optimal alignment of customer interests, the HEI Companies' interests, and the State's energy policies.

In analyzing the PSIPs, DBEDT was able to determine whether the PSIPs were consistent with the State's energy policies and directive and whether the PSIPs comply with the specific compliance directives. While DBEDT views the PSIPs as a step in the right direction, particularly when compared to the HEI Companies' IRPs, DBEDT was not able to conclude that the PSIPs represent a supportable and optimal mechanism for achieving the State's clean energy goals and directives. At the micro level, DBEDT's inability to reach this conclusion was due to the HEI Companies' failure to provide supporting data and analyses. At the macro level, DBEDT's inability to reach this conclusion was based on the fact that certain aspects of the PSIPs were not shown to be consistent with, or are contrary to, the State's clean energy policy.

More fundamentally, however, DBEDT is concerned that, in the absence of the direction provided by a clear business case for the future, the HEI Companies have failed to demonstrate that the PSIPs contain the strategic focus needed to advance the State's energy policies. Rather, the PSIPs appear to be designed to elevate the HEI Companies' interests above the public interest. Accordingly, DBEDT recommends that the Commission take the actions specified in Part III.B *supra* to strike an appropriate balance between requiring accountability and avoiding further delay in achieving the State's clean energy policy.

WHEREFORE, the Hawaii Department of Business, Economic Development, and Tourism respectfully requests the Commission consider the foregoing Comments in ruling on the Hawaii Electric Companies' Power Supply Improvement Plans.

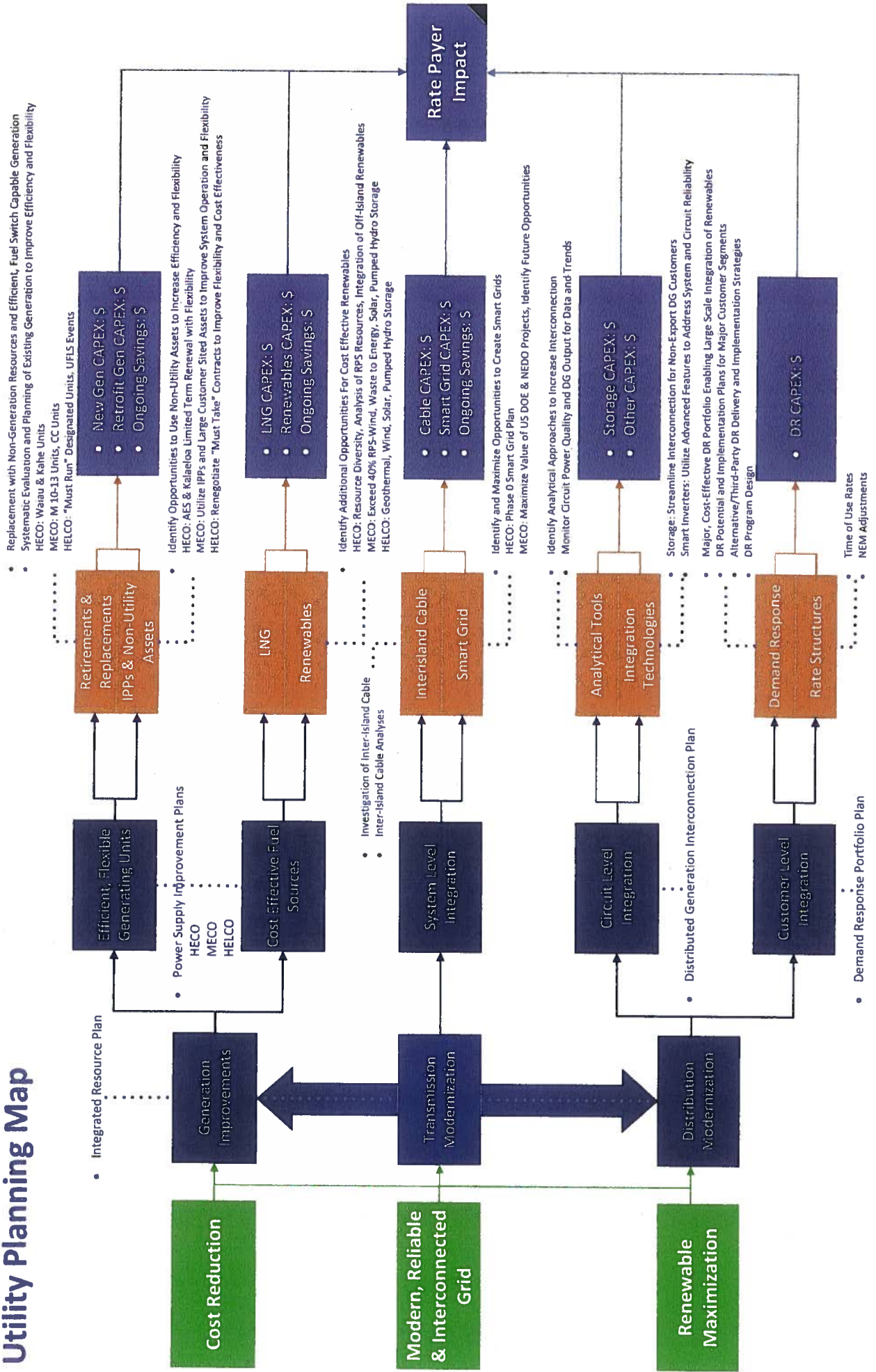
Respectfully submitted,

A handwritten signature in black ink, appearing to read 'G. Kinkley', written over a horizontal line.

Gregg J. Kinkley
Deputy Attorney General
Commerce and Economic Development Division
425 Queen Street, 3rd FL, Honolulu, HI 96813
(808) 586-1198 telephone
(808) 586-1205 facsimile

APPENDIX 1: Utility Planning Map

Utility Planning Map



CERTIFICATE OF SERVICE

I hereby certify that I have this date served a copy of the foregoing Comments, together with this Certificate of Service, by making personal delivery on the Commission, the Consumer Advocate, and the HEI Companies, and by causing a copy hereof to be electronically mailed, to each such other party:

JEFFREY T. ONO
EXECUTIVE DIRECTOR
DEPARTMENT OF COMMERCE AND
CONSUMER AFFAIRS
DIVISION OF CONSUMER ADVOCACY
PO Box 541
Honolulu, Hawaii 96809

DEAN MATSUURA
DIRECTOR, REGULATORY AFFAIRS
HAWAIIAN ELECTRIC COMPANY, INC.
PO Box 2750
Honolulu, Hawaii 96840-0001

KENT D. MORIHARA
KRIS N. NAKAGAWA
LAUREN M. IMADA
MORIHARA LAU & FONG, LLP
841 Bishop Street, Suite 400
Honolulu, Hawaii 96813

ROBERT CARSON GODBEY, ESQ.
DANIEL W.S. LAWRENCE, ESQ.
DEPARTMENT OF THE CORPORATION COUNSEL
CITY & COUNTY OF HONOLULU
530 S. King Street, Room 110
Honolulu, Hawaii 96813
Counsel for CITY & COUNTY OF HONOLULU

HENRY Q. CURTIS
VICE PRESIDENT FOR CONSUMER ISSUES
LIFE OF THE LAND
76 N. King Street, Suite 203
Honolulu, Hawaii 96817

WARREN S. BOLLMEIER, II
PRESIDENT
HAWAII RENEWABLE ENERGY ALLIANCE
46-040 Konane Place, #3816
Kaneohe, Hawaii 96744

ISAAC H. MORIWAKE, ESQ.
EARTHJUSTICE
850 Richards Street, Suite 400
Honolulu, Hawaii 96813-4501
Counsel for HAWAII SOLAR ENERGY ASSOCIATION

DOUGLAS A. CODIGA, ESQ.
SCHLACK ITO
Topa Financial Center
745 Fort Street, Suite 1500
Honolulu, Hawaii 96813
Counsel for BLUE PLANET FOUNDATION

SANDRA-ANN Y.H. WONG, ESQ.
1050 Bishop Street, Suite 514
Honolulu, Hawaii 96813
Counsel for TAWHIRI POWER LLC

LINCOLN S.T. ASHIDA, ESQ.
WILLIAM V. BRILHANTE, JR., ESQ.
MICHAEL J. UDOVIC, ESQ.
DEPARTMENT OF THE CORPORATION COUNSEL
COUNTY OF HAWAII
101 Aupuni Street, Suite 325
Hilo, Hawaii 96720
Counsel for COUNTY OF HAWAII

RILEY SAITO
73-1294 Awakea Street
Kailua-Kona, Hawaii 96740
For SOLAR ENERGY INDUSTRIES ASSOCIATION

ERIK KVAM
CHIEF EXECUTIVE OFFICER
ZERO EMISSIONS LEASING LLC
2800 Woodlawn Drive, Suite 131
Honolulu, Hawaii 96822

KEVIN T. FOX
KEYES & FOX, LLP
436 14th Street, Suite 1305
Oakland, California 94612
For the INTERSTATE RENEWABLE ENERGY COUNCIL

MONA W. CLARK, ESQ.
OFFICE OF THE COUNTY ATTORNEY
COUNTY OF KAUAI
4444 Rice Street, Suite 220
Lihue, Hawaii 96766-1300
Counsel for COUNTY OF KAUAI

MICHAEL J. HOPPER, ESQ.
DEPUTY CORPORATION COUNSEL
DEPARTMENT OF THE CORPORATION COUNSEL
COUNTY OF MAUI
200 S. High Street
Wailuku, Hawaii 96793
Counsel for COUNTY OF MAUI

CURTIS SEYMOUR
SENIOR MANAGER, GOVERNMENT AFFAIRS
SUN EDISON LLC
600 Clipper Drive
Belmont, California 94002

BRADLEY ALBERT
PRESIDENT
HAWAII PV COALITION
PO Box 81501
Haiku, Hawaii 96708

HILTON H. UNEMORI
ECM, INC.
130 N. Market Street
Wailuku, Hawaii 96793-1716
For SOUTH MAUI RENEWABLE RESOURCES, LLC

DEAN T. YAMAMOTO, ESQ.

DUKE T. OISHI, ESQ.

YAMAMOTO & SETTLE

1099 Alakea Street, Suite 210

Honolulu, Hawaii 96813

Counsel for CASTLE & COOKE HOMES HAWAII, INC., CASTLE & COOKE
RESORTS, LLC AND LANAI SUSTAINABILITY RESEARCH, LLC

HUGH D. BAKER, JR.

HDBAKER & COMPANY HAWAII, LLC

78-7000 Kewalo Street

Kailua-Kona, Hawaii 96740

PETE COOPER

REGIONAL DIRECTOR, HAWAII

SOLARCITY CORPORATION

599 Kahelu Street

Mililani, Hawaii 96789

STANLEY ALLEN GRAY

SENIOR DEVELOPER

Pier 1, Bay 3

San Francisco, California 94111

For MOLOKAI RENEWABLES, LLC

ALISON SILVERSTEIN

19213 Luedtke Lane

Pflugerville, Texas 78660

BRENDAN KIRBY

12011 SW Pineapple Court

Palm City, Florida 34990

ERIK KVAM

PRESIDENT

RENEWABLE ENERGY ACTION COALITION OF HAWAII, INC.

1110 University Avenue, Suite 402

Honolulu, Hawaii 96822

DOUGLAS A. CODIGA, ESQ.

MATTHEW M. MATSUNAGA, ESQ.

SCHLACK ITO

Topa Financial Center

745 Fort Street, Suite 1500

Honolulu, Hawaii 96813

Counsel for NEXTERA ENERGY HAWAII, LLC

MARK J. BENNETT, ESQ.
DUANE R. FISHER, ESQ.
STARN O'TOOLE MARCUS & FISHER
733 Bishop Street, Suite 1900
Honolulu, Hawaii 96813
Counsel for NEXTERA ENERGY HAWAII, LLC

LESLIE COLE-BROOKS
EXECUTIVE DIRECTOR
HAWAII SOLAR ENERGY ASSOCIATION
PO Box 3700
Honolulu, Hawaii 96837

THOMAS J. TRAVIS
VICE PRESIDENT
PUNA PONO ALLIANCE
RR2 Box 3317
Pahoa, Hawaii 96778

TIM LINDL, ESQ.
KEYES, FOX & WIEDMAN LLP
436 14th Street, Suite 1305
Oakland, California 94612
Counsel for THE ALLIANCE FOR SOLAR CHOICE

YVONNE Y. IZU, ESQ.
LAUREN M. IMADA, ESQ.
Davies Pacific Center
841 Bishop Street, Suite 400
Honolulu, Hawaii 96813
Counsel for THE GAS COMPANY, LLC DBA HAWAII GAS

DEAN T. YAMAMOTO, ESQ.
CARLITO P. CALIBOSO, ESQ.
TYLER P. MCNISH, ESQ.
YAMAMOTO CALIBOSO, LLLC
1099 Alakea Street, Suite 2100
Honolulu, Hawaii 96813
Counsel for AES HAWAII, INC.

RICHARD WALLSGROVE
PROGRAM DIRECTOR
BLUE PLANET FOUNDATION
55 Merchant Street, 17th Floor
Honolulu, Hawaii 96813

GERALD A. SUMIDA, ESQ.
TIM LUI-KWAN, ESQ.
ARSIMA A. MULLER, ESQ.
CARLSMITH BALL LLP
ASB Tower, Suite 2100
1001 Bishop Street
Honolulu, Hawaii 96813
Counsel for ULUPONO INITIATIVE LLC

COLIN A. YOST, ESQ.
HAWAII PV COALITION
Pauahi Tower, Suite 2020
1003 Bishop Street
Honolulu, Hawaii 96813

SCOTT GLENN
CHAIR, HAWAII CHAPTER
SIERRA CLUB
PO Box 2577
Honolulu, Hawaii 96813


DEAN T. YAMAMOTO, ESQ.
CARLITO P. CALIBOSO, ESQ.
TYLER P. MCNISH, ESQ.
Yamamoto Caliboso LLLC
1099 Alakea Street, Suite 2100
Honolulu, Hawaii 96813
Counsel for PANIOLO POWER COMPANY, LLC
Counsel for EURUS ENERGY AMERICA CORPORATION

SANDRA-ANN Y.H. WONG, ESQ.
1050 Bishop Street, Suite 514
Honolulu, Hawaii 96813
Counsel for SUNPOWER CORPORATION

MOLLY A. STEBBINS, ESQ.
WILLIAM V. BRILHANTE, JR., ESQ.
COUNTY OF HAWAII
101 Aupuni Street, Suite 325
Hilo, Hawaii 96720
Counsel for COUNTY OF HAWAII

FIRST WIND HOLDINGS, LLC
810 Richards Street, Suite 650
Honolulu, Hawaii 96813

DATED: Honolulu, Hawaii, October 6, 2014.



GREGG J. KINKLEY