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BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF HAWAII

In the Matter of	)	
	)	
PUBLIC UTILITIES COMMISSION	)	DOCKET NO. 2018-0165
	)	
Instituting a Proceeding to Investigate Integrated Grid Planning.	)	

DIVISION OF CONSUMER ADVOCACY'S COMMENTS ON THE FIRST REVIEW POINT

Pursuant to the Hawaii Public Utilities Commission's ("Commission") Order No. 37604, Establishing a Procedural Schedule For The First Review Point, filed on February 4, 2021 ("Order 37604"), the Division of Consumer Advocacy ("Consumer Advocate") provides its comments on Hawaiian Electric Companies'[1] Updated Workplan that was filed on January 19, 2021 ("Updated Workplan" or "First Review Point").

[1] The Hawaiian Electric Companies are comprised of Hawaiian Electric Company, Inc., Hawaii Electric Light Company, Inc., and Maui Electric Company, Ltd. and will collectively be referred to as the "Hawaiian Electric Companies" or "Companies".

I. BRIEF PROCEDURAL BACKGROUND.

On July 12, 2018, the Commission filed Order No. 35569, Instituting an Proceeding to Investigate Integrated Grid Planning ("Order 35569"), which opened in the instant proceeding to facilitate the next cycle of long-term energy planning and the development of resulting plans.

On March 14, 2019, the Commission filed Order No. 36218, Accepting the IGP Workplan and Providing Guidance ("Order 36218"). In Order 36218, the Commission accepted the workplan that was submitted on December 14, 2018, pursuant to Order 35569.

Since the opening of the docket, various working groups have been created and met to discuss various aspects of the Integrated Grid Planning ("IGP") process.

On November 5, 2020, the Commission filed Order No. 37419, Providing Guidance ("Order 37419"), wherein the Commission, among other things, required the Hawaiian Electric Companies to develop an updated version of the IGP workplan to incorporate the guidance offered in Order 37419 to make the IGP transparent, improve stakeholder engagement, and to be more reflective of an industry-leading process.

On January 19, 2021, the Companies filed their Updated Workplan, wherein, among other things, the Companies sought Commission feedback on their Updated Workplan.

In the Commission's Order 37604, the Commission responded to the Companies' request for feedback by establishing procedural steps that included the opportunity for comments on the Updated Workplan to be filed on February 25, 2021, and reply comments from the Hawaiian Electric Companies on March 4, 2021.

II. DISCUSSION.

In Order 37604, the Commission set forth a modified procedural schedule in order to allow the Companies to incorporate feedback and comments filed by the parties,[2] which should assist the Commission in its consideration of the Hawaiian Electric Companies' Updated Workplan. As noted by the Commission, thirty days "may not be sufficient time for meaningful review" and the volume of information that has been recently provided is not insignificant.

The Commission set forth eight general questions to help identify possible areas of feedback from the Parties but made clear that the "list of questions is not exclusive, and the Commission encourages the Parties to be more expansive in their comments and address any aspect of the First Review Point."[3] The Consumer Advocate offers the following feedback and comments, including responses to some of the questions posed in Order 37604.

A. THE CONSUMER ADVOCATE GENERALLY SUPPORTS THE PROPOSAL TO USE LIMITED FORECASTS FOR THIS IGP CYCLE TO FACILITATE THE TIMELY PRODUCTION OF A PLAN.

On page 4 of the First Review Point, the Companies acknowledge the Commission's guidance that the forecast should be a series of feedback loops and that, through iteration, provide information on needs and solutions. The Companies also state

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2 Other than the Companies, the Parties in this proceeding are the Consumer Advocate and the intervenors, that are comprised of Life of the Land, Energy Island, County of Hawaii, Hawaii PV Coalition, Hawaii Solar Association, Progression Hawaii Offshore Wind, LLC, Ulupono Initiative, LLC, and Blue Planet Foundation.

3 Order No. 37604, at 6.

their concern that an iterative forecast is at odds with a market-based approach. The Consumer Advocate believes that this concern has merit if there is an intent to return to the expectation that the result of the planning process will be determinative. That is, the Consumer Advocate believes that a market-based approach can still be pursued[4] as long as the Commission does not require the Companies to rigidly adhere to any resulting plan. The Consumer Advocate strongly encourages the Commission to continue adopting the philosophy that any resulting plan is meant to represent a strategy or general plan and that, depending on facts (e.g., system needs, market prices, etc.) available at the time that any resource decision needs to be made, the adopted IGP plan would only represent a guide. The Consumer Advocate notes that the Companies' discussion on pages 7 and 8 of the First Review Point is consistent with this approach. This approach would mitigate the concern that an iterative process is inconsistent with a market approach and would only be to the benefit of certain stakeholders. That being said, the Consumer Advocate recognizes that the determination of forecasts represents an early step and that, if requests to continually re-perform new forecasts and next steps must wait until the base forecast has been set, the ability to progress through all of the planning steps would be impaired. Further, the Consumer Advocate believes that, based on the understanding that the Technical Advisory Panel supports the notion of a base forecast with bookends,[5] limiting the number of forecasts is acceptable. Assuming that there is

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4 As will be discussed later, the Consumer Advocate has concerns with a market-based approach that does not take advantage of possible information, such as pricing, and steps that could facilitate procurement results that best meet system and customer needs.

5 The Companies have provided copies of the Technical Advisory Panel ("TAP") Review as part of its Exhibit A. The Consumer Advocate notes that, in the August 24, 2020 TAP report, the recommendation is to conduct bookend analysis instead of "against a wide range of load forecasts."

general acceptance of limiting the number of forecasts, however, there should be reasonable efforts to ensure that the bookends are established to represent likely “highs” and “lows” that are likely to occur within the forecast horizon. The Consumer Advocate offers that there is growing complexity with what might best represent “highs” and “lows” given that the IGP involves planning across expanding areas of operations and services as opposed to, say, just generation and load. Due to that growing complexity, this is where the Consumer Advocate believes that feedback and early iteration may be appropriate to establish the bookends. The Consumer Advocate contends that it is also important for the Commission to acknowledge and reinforce that planning is a continuous process and that, even after one round of forecasts has been completed and the resulting plan has been produced, work should continue to gather updated data and information to inform the next forecast and round of planning. Thus, in response to the first question on whether the baseline set of forecasts and assumptions represent a reasonable starting point, the Consumer Advocate believes that it could be a reasonable starting point. To be sure, the Consumer Advocate believes that other factors could be considered – such as the comments that will be offered later regarding the inclusion of the electrification of transportation – and that those other factors could affect the resulting forecast but, consistent with the notion that the resulting plan is not meant to be prescriptive, the resulting plan would still be informative and facilitate future resource procurement evaluations. Progress should not be impeded by the pursuit of perfection.

Again, the Consumer Advocate also believes that it is important to consider the need to have regularly scheduled planning cycles and produced reports. The

Consumer Advocate stressed this point in earlier planning dockets.[6] In the interval between the last action plan developed as part of the old IRP framework and the modified IRP framework, the lack of an updated plan made it challenging to adequately evaluate resource procurement applications. Similarly, the data and outcomes from the 2016 Power Supply Improvement Plans are stale; yet, they are the most recent and comprehensive reference available for current resource procurement analyses. The Consumer Advocate is concerned that, in the absence of a plan that has more recent data, inputs, assumptions and analyses, it will be challenging to conduct informed and relevant analyses to assist in the evaluation of future resource procurement alternatives.

Further regarding the model and forecasts, the Consumer Advocate notes the various open houses and working group meetings and believes that the Hawaiian Electric Companies have made reasonable efforts to inform and solicit feedback from stakeholders. While recognizing that attempting to educate and train all stakeholders should not be an objective, the Consumer Advocate believes that it may be reasonable to consider means by which the discussion of the necessary modeling processes, inputs, and assumptions might be transformed to make future discussions more relatable and understandable to facilitate more robust discussions in the future from all stakeholders. Otherwise, in the absence of that type of transformation, the current situation will likely continue, where there are: 1) a small group of stakeholders that may be able to offer detailed comments and inputs; 2) another group of stakeholders that may be able to offer limited comments and inputs and concerns with the opacity of the process; and 3) another

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[6] See, e.g., Division of Consumer Advocacy's Final Statement of Position, filed on December 21, 2009, in Docket No. 2009-0108, at 8; Division of Consumer Advocacy's Comments, filed on January 15, 2016, in Docket No. 2014-0183, at 17.

group of stakeholders that do not or are reluctant to engage in the discussion because of the perceived complexity of the process. The Consumer Advocate appreciates that the Hawaiian Electric Companies have taken steps to make the process more transparent and accessible, such as making notes and data sets available on the Companies' website, but believes that additional work in this area is still possible and desirable. To that end, the Consumer Advocate cannot speak for all of the stakeholders but believes that Hawaiian Electric Companies' efforts to sufficiently incorporate stakeholder feedback has been acceptable.

B. THE COMPANIES' ASSUMPTIONS RELATED TO THE ELECTRIFICATION OF TRANSPORTATION SHOULD BE MODIFIED.

As discussed above, the Consumer Advocate believes that Hawaiian Electric's base forecast could be a reasonable starting point, but the Consumer Advocate offers the following comments regarding the treatment of electrification of transportation related assumptions in its forecast. First, the Consumer Advocate has concerns around using a single light-duty EV forecast.[7] This is important as it is driving anticipated load impacts from EVs as well as the cost-effectiveness of EV programs. For background, EVs

[7] EV saturation (as a percentage of light-duty vehicles ("LDV") on the road) was based on a Bass diffusion model combined with a geospatial customer-level agent-based model developed by Integral Analytics; when combined with an LDV forecast based on population and jobs, yielded the number of light-duty EVs. See Docket No. 2016-0168, Electrification of Transportation Strategic Roadmap, filed on March 29, 2018, Appendix E; Docket No. 2018-0165 2020 Integrated Grid Planning Inputs and Assumptions, Draft September 2020 provided in Hawaiian Electric Companies Updated Workplan ("IGP Inputs and Assumptions") filed on January 19, 2021, at 25.

The Consumer Advocate previously raised the need to conduct sensitivity analyses rather than relying on a single forecast. See CA Comments on Hawaiian Electric Companies' Electrification of Transportation Strategic Roadmap in Docket No. 2018-0135 ("CA EoT Roadmap Comments"), filed on July 16, 2018, at 6-8.

constituted 1.7% of passenger vehicles on Oahu, and 1.3% statewide as of 2020.[8] Hawaiian Electric estimates that, on Oahu, EVs will comprise 8.39% of LDVs by 2030, 16.43% by 2035, 29.48% by 2040, and 51.55% by 2045. As a point of contrast for illustration, this a significantly lower than the U.S. Energy Information Administration's ("EIA") Annual Energy Outlook ("AEO") projection of 1.5% by 2030, 2.9% by 2035, 4.3% by 2040, and 5.5% by 2045.[9] Though the AEO forecast likely represents a lower-bound, noting that Oahu has also already surpassed AEO's 2030 estimate, the range between AEO's and Hawaiian Electric's reference forecast highlights the vast uncertainty. In Hawaiian Electric's low case, EVs are forecasted to reach roughly 5% in 2030, 9% in 2035, 20% by 2040, and 38% by 2045.[10] As a more conservative approach, the Consumer Advocate recommends that Hawaiian Electric's low case also be included as a sensitivity within the IGP planning process. The Consumer Advocate reiterates the importance of considering alternative pathways to illustrate a range of outcomes[11] and allow for appropriate program assessment, resource and infrastructure planning, and grid impacts. As it relates to Integral Analytic's EV saturation model, the Consumer Advocate continues to seek detailed model inputs and assumptions (as well as the excel models if it can be provided), to better understand the projected EV saturation percentages.[12]

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8 DBEDT. Economic Data Warehouse. http://dbedt.hawaii.gov/economic/datawarehouse/

9 Based on car and light truck mileage from 100 Mile Electric Vehicle, 200 Mile Electric Vehicle, 300 Mile Electric Vehicle, Plug-in 10 Gasoline Hybrid, Plug-in 40 Gasoline Hybrid. See Annual Energy Outlook 2021. Released February 3, 2021. Table 46. Transportation Fleet Car and Truck Vehicle Miles Traveled by Type and Technology. https://www.eia.gov/outlooks/aeo/tables_ref.php.

10 EV saturation percentages were eye-balled from the figure on slide 29. See IGP Inputs and Assumptions, Technical Advisory Panel Meeting Slides from August 14, 2020, at 29.

11 CA Comments on EoT Roadmap, at 7-8.

12 See CA EoT Roadmap Comments, at 6.

Next, the Consumer Advocate recommends that Hawaiian Electric develop alternative scenarios for their vehicle miles travelled ("VMT") forecast that is used as an input to determine kWh per vehicle and the overall sales impact from EVs. Their VMT forecast applies a growth rate to historical VMT,[13] but recent research has shown that EVs are driven far less than gasoline-powered vehicles.[14] Using hourly data from dedicated household EV charging meters, combined with address-level EV registrations in California, EVs were found to increase overall household load by 2.9 kWh per day, compared to 7.2 and 8 kWh per day based on residential charging data reported by the utilities.[15] As the authors point out, this difference could have adverse implications for investment decisions on distribution infrastructure. When translating their estimates into electric VMT, they find EVs travel under half that of gasoline-powered cars – at about 5,300 miles per year.[16] As such, the Consumer Advocate recommends, similar to above, that there should be sensitivity analyses around VMT and the resulting kWh per vehicle and MWh sales.

In regard to the Commission's question about using unmanaged charging load profiles in the baseline electricity forecast, with outcomes from managed charging scenarios then modifying the forecast based on specific program provisions, the

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13 IGP Inputs and Assumptions, at 26.

14 Burlig, F., Bushnell, J., Rapson, D., & Wolfram, C. (2021). Low Energy: Estimating Electric Vehicle Electricity Use. NBER Working Paper Series. https://www.nber.org/system/files/working_papers/w28451/w28451.pdf

15 See California Energy Commission. (2019). Joint IOU Electric Vehicle Load Research Report. Technical report.

16 It should be noted that their estimate suggests that 75% of EV charging occurs at home in contrast to the 85-90% estimated by the California Air Resources Board. See California Air Resources Board. (2020). Low Carbon Fuel Standard Quarterly Summary of Data. Technical report.

Consumer Advocate believes this is an appropriate approach to treat EV charging.[17] By definition/convention, baseline forecasts are intended to reflect the most likely outcome based on the status quo or current conditions. Alternative scenarios then test the impact of different assumptions or shocks. For instance, the State's RPS would likely be included in a baseline forecast as this policy on the books must be met. If the State were to layer on proposed policies (e.g., a carbon tax), this would be considered as an alternative scenario. Based on the Consumer Advocate's high-level understanding that unmanaged charging reflects historical usage patterns as opposed to managed charging that accounts for shifting usage in response to TOU pricing programs, the managed charging scenario represents an additional layer/point of sensitivity. That is, managed charging results in an altered charging load profile (from the status quo of unmanaged charging). An alternative scenario might test what happens to the electricity sales forecast when managed charging occurs, relative to a baseline forecast. In summary, the Consumer Advocate views managed charging as an alternative scenario where customers adjust their load in response to various programs as opposed to treating current behavior and conditions as the most likely outcome.

[17] Question #4 in Order No. 37604, at 4.

C. THE TREATMENT OF ENERGY EFFICIENCY IN THE FORECAST AND MODEL CAN BE IMPROVED.

Regarding Hawaiian Electric Companies' comments on energy efficiency and how the Companies incorporated the AEP Hawaii Statewide Market Potential Study results in its forecasts, the Consumer Advocate notes that the intended approach is an improvement over past efforts. Given the potential role that energy efficiency can (and should) play in Hawaii's energy future, it is important that the planning process recognizes the greater role that energy efficiency can play and the ability to forecast that potential will require that greater information and coordination between the Hawaiian Electric Companies and Hawaii Energy. To that end, the Companies' discussion of modeling input needs that can be used highlights areas where improved coordination and communication between Hawaii Energy and Hawaiian Electric could better support the deployment of energy efficiency in Hawaii. This discussion is generally consistent with recommendations that the Consumer Advocate has offered in Docket No. 2007-0323, where it has been suggested that more details associated with each commercially available energy efficiency measure should be provided. This information, such as developable potential, cost, and hourly load shape, would enhance the exploration of energy efficiency deployment beyond the annual plan submitted by Hawaii Energy.

The Consumer Advocate anticipates that to obtain the necessary information to enhance the ability to expand the role that energy efficiency could play in the modeling process will require more time that might delay the production of IGP's first plan. As it relates to the yet to be determined tariffs for DER and EVs in the forecast, the Consumer Advocate recognizes the current roles they are playing and anticipated to represent in the future. Given the potential range of outcomes for those tariffs is still

uncertain, however, waiting for the development of the tariffs does not seem reasonable and attempting to include estimated outcomes may lead to a base forecast that may not be as useful to the reliance on tariffs outcomes that are not certain. Assuming that the Commission agrees with the expectation that the IGP planning process is cyclical, the opportunity to include the expected results from tariffs that are to be developed for DER, EVs, and future energy efficiency impacts (once the potential is better modeled) will present itself in each future cycle iteration.

D. FUTURE PROCUREMENT PROCESSES SHOULD BE CONDUCTED TO BEST FIT NEEDS.

On page 29 of the Updated Workplan, the Hawaiian Electric Companies offer a discussion of stakeholder feedback within the competitive procurement working group and includes a suggestion that the Consumer Advocate has been offering for some time with the notion that, if adopted, it could: 1) accelerate the procurement process; 2) accelerate the interconnection process; 3) reduce the overall cost of renewable; 4) reduce the risk for developers and possibly make the decision to invest in Hawaii renewable energy projects more appealing; and 5) mitigate community concerns that might undermine a renewable energy project. That suggestion involves: 1) the pre-selection of possible sites to obtain early community feedback and support, if possible; 2) develop – and possibly construct – interconnection facilities to avoid delays that may occur earlier and to reduce the costs and risks that developers would otherwise need to take; and 3) then seek market response to meet system needs. The use of this process can be successful as Kauai Island Utility Cooperative has used certain aspects of this process and it has led to a number of successful renewable energy projects.

Furthermore, the Lanai RFP has adopted certain aspects of this and is expected to result in a quicker and less risky process, as noted in the First Review Point.

The Companies' discussion on page 10 does seem to suggest that the procurement process may rely on finding solutions through procurement first – and possibly before considering pricing and programs as possible solutions. The Consumer Advocate believes that the Hawaiian Electric Companies should confirm or elaborate on their planned approaches to future procurement processes. Subsequently, more feedback could be provided. The Consumer Advocate has concerns with the possibility of a "procurement first" approach. Such an approach would not be consistent with the suggested approach for utility scale projects. In addition, the Consumer Advocate is concerned is that, depending on the system need, relying only on a procurement first approach may not meet the system need on a timely basis.[18] The Consumer Advocate believes that the Companies should seek likely pricing and performance information, such as through a request for information ("RFI"), to help inform procurement processes. The RFI would provide an opportunity to obtain possible pricing information for a range of possible solutions, such as renewable energy projects, energy services through aggregators, energy services through energy efficiency or demand response programs, or combinations of the options. When there are definite or urgent system needs, the optimal procurement process should be employed to timely and cost-effectively meet that system need and not an approach that may not fully meet that need and require additional requests for proposals that may not meet the system need on a timely basis.

[18] An example of the market failing to meet a system need is the recent and continuing energy issue in Texas, where the market solution did not adequately address reliability issues.

The Consumer Advocate anticipates that it will continue to participate in the stakeholder working groups and appreciates the opportunity to offer these comments.

DATED: Honolulu, Hawaii, February 25, 2021.

Respectfully submitted,

By /s/ Dean Nishina
DEAN NISHINA
Executive Director

DIVISION OF CONSUMER ADVOCACY

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing **DIVISION OF CONSUMER ADVOCACY'S COMMENTS ON THE FIRST REVIEW POINT** was duly served upon the following parties electronically to the e-mail addresses below pursuant to HAR § 16-601-21(d), as modified by Order No. 37043 Setting Forth Public Utilities Commission Emergency Filing And Service Procedures Related To COVID-19, filed on March 13, 2020.).

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DATED: Honolulu, Hawaii, February 25, 2021.

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