

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of the Application of )  
 )  
The Public Utilities Commission ) Docket No. 2018-0165  
 )  
Instituting a Proceeding to Investigate )  
Grid Planning )  
\_\_\_\_\_ )

LIFE OF THE LAND'S

COMMENTS RE IGP FIRST REVIEW POINT

and

CERTIFICATE OF SERVICE

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Aloha Commissioners and Staff,

The Public Utilities Commission (“Commission”) required the utility planning processes to engage with the community with Integrated Resource Planning (“IRP”) proceedings from 1990–2014, the Commission issued its Inclinations on the Future of Hawaii’s Electric Utilities (“Inclinations”) in April 2014, followed by the Hawaiian Electric Companies (“HECO”) Power Supply Improvement Plans (“PSIPs”) from 2014-2017, and now the new Integrated Grid (“IGP”) Planning process since 2017.

Life of the Land is Hawai`i’s own energy, environmental and community action group advocating for the people and `aina in its 52<sup>nd</sup> year. Our mission is to preserve and protect the life of the land through sound energy and land use policies and to promote open government through research, education, advocacy and, when necessary, litigation. Life of the Land was founded in February 1970, has been involved in Commission proceedings since 1971 and participated in the IRP, PSIP, and IDG planning processes. Life of the Land asserts that the climate crisis must be dealt with quickly, in a data-driven, scientific way, mindful of equity, justice, and geographic diversity.

Transmission and Distribution issues are of critical importance. Life of the Land was a party or participant in HECO’s proposed Wa`ahila Ridge 138-kV Transmission Line (BLNR OA-2801, 1996-2002), and Commission dockets on HECO’s East Oahu Transmission Project, HECO/MECO’s Big Wind – Undersea Cable, and MECO’s Switchyard and Synchronous Condenser Project. Life of the Land also served on the Commission’s Reliability Standards Working Group, HECO’s IGP Stakeholder’s Council (“SC”) and HECO’s IGP Working Groups (“WGs”) including the Resilience Working Group.

### The IGP Concept

HECO filed their IGP Report "Planning Hawai'i's Grid for Future Generations" ("Plan") on March 1, 2018. The document became part of the record in this proceeding when it was filed on July 13, 2018. "The Hawaiian Electric Companies now propose to leap ahead to an innovative-systems approach to energy planning. This fully integrated planning process intends to yield the most cost-effective renewable energy pathways that are rooted in customer and stakeholder input." Plan at 1. "We made a significant change over traditional energy planning practices through streamlining traditionally disparate and serial tasks related to planning and procurement into a unified process." Plan at 2. "Additionally, given the current rate of technological advancement, long-term analyses and projections more than 10 years out have a high degree of uncertainty. HNEI suggested supporting longer-term analysis by using Hawaii's 2030 intermediate goals as a reference point toward 2045." Plan at 10

### Docket Opens

The Commission issued Order No. 35569 ("Order No. 35569") to open docket no. 2018-0165 on July 12, 2018 Instituting a Proceeding to Investigate Integrated Grid Planning ("IGP") for the Hawaiian Electric Companies.

"The IGP Report broadly proposes a way to connect critical grid-planning processes and priorities in innovative ways that could respond to the State's needs and reduce costs to customers. The success of this new planning process depends on the details of implementation, which will come into sharper focus as the process proceeds." Order No. 35569 at 2

"The commission intended the PSIP process to be an interim measure to address the shortcomings of the IRP process and resulting plans. The commission explained that the power

supply systems of each utility are becoming more complex and challenging as greater quantities of diverse renewable energy resources are integrated with older, relatively inflexible base load generation resources.” Order No. 35569 at 9-10

“On March 1, 2018, the HECO Companies filed their IGP Report with the commission. The IGP Report proposes an ambitious leap forward from traditional system planning. The HECO Companies propose to merge three separate planning processes generation, transmission, and distribution while simultaneously integrating solution procurement into this merged process, with the goal of identifying gross system needs, coordinating solutions, and developing an optimized, cost-effective portfolio of assets. Integrating the planning processes should allow variety of distributed and grid-scale resources to provide power generation and ancillary services, potentially resulting in significant customer savings.” Order No. 35569 at 12-13

“The HECO Companies propose to conduct an IGP cycle every two years. with the first cycle beginning in 2019, resulting in the first plan by the end of 2020.” Order No. 35569 at 15-16

The proceeding kicked off with a bang. The initial regulatory proceeding included 13 parties: HECO, MECO, HELCO, Consumer Advocate, and nine intervenors: Blue Planet Foundation, County of Hawaii, Energy Island, Hawaii PV Coalition, Hawaii Solar Energy Association, Life of the Land, Progression Hawaii Offshore Wind, LLC, Renewable Energy Action Coalition of Hawaii, and Ulupono Initiative LLC.

Life of the Land looked optimistically at the possibilities. Finally, a proceeding that would look holistically at the entire utility operation and find reasonably optimal solutions.

Similar to the launch of the telecom revolution 25 years ago, the energy revolution (crashing prices of solar and storage, digitalization), regulatory transformation (PBR), and the

new normal (covid-19 pandemic, and the climate crisis) have made analysis of the traditional long-term extremely problematic. Instead, the long-term must be shrunk to 15 years, coinciding with the long-range goal of true 100% renewable net zero greenhouse gas emissions by 2035, and the development of interim five-year plans.

The HECO Companies created numerous working groups and a stakeholder`s council. The Working Groups proceeded at a relentless pace. Sometimes weeks would go by with no meeting and then two or three groups would meet on the same day often at the same time. Whether this was intentional or showed a high level of incompetence is unknown. The discussions were high-level, not high in the sense of who attended, but rather, in the sense of looking at the picture from a distance, of presenting overviews lacking meaningful and relevant detail.

#### First Guidance Document

By March 2019 it was clear the planning process was broken. The Commission put it politely. The Commission issued Order No. 36218 regarding the first guidance document (“GD-1”), on March 14, 2019.

“The strength of the Workplan lies in the robust stakeholder engagement model. The Stakeholder Council, the Technical Advisory Panel, and each Working Group has clear objectives, responsibilities, membership, and schedules.” GD-1 at 4

“Given the large number of groups and individuals involved in the IGP process, including the Stakeholder Council, Technical Advisory Panel, each Working Group, and the Parties, the commission expects the Companies to continue to develop and adapt their information sharing

methods so that everyone may meaningfully contribute to the IGP process, and benefit from others' contributions.” GD-1 at 5

### Second Guidance Document

Over a year after the proceeding began, the Commission needed to be more forceful in its guidance. The Commission issued Order No. 36725, the second guidance document (“GD-2”), on November 4, 2019.

“The commission is aware that many of the Working Groups have had primarily high-level discussions to date and have only begun introducing sufficient content and details for stakeholders to analyze and evaluate.” GD-2 at 5

“Although there have been twenty-seven (as of October 23, 2019) Working Group meetings to date, opportunities for meaningful stakeholder feedback have been limited.” GD-2 at 7

“The commission expects stakeholder feedback to become more detailed as the Working Groups delve deeper into their respective tasks. To better enable all stakeholders to provide useful and timely feedback to the Companies, the commission suggests the following process improvements -- the commission suggests the following process improvements some of which are already occurring in some Working Groups: (1) prior to each meeting, the Companies should provide meeting slides and agendas that focus on soliciting substantive feedback on their proposals for each process step; (2) each meeting should have clearly identified objectives and outcomes, and should provide dedicated time for stakeholder feedback on targeted questions; (3) stakeholders should have the opportunity to provide immediate feedback {e.g., by completing evaluation forms) on the process and enable rapid course correction; and (4) to facilitate more

targeted feedback from stakeholders during working group meetings, the Companies should implement way to view the Companies' planning assumptions and other Working Group deliverables similar to the FTP site the Companies used during the PSIP process. By adopting the above process recommendations, the Companies can promote more meaningful stakeholder feedback. This will also allow the Companies to make better use of Working Group meeting time and stakeholder resources.” GD-2 at 8-9

“For the IGP process to work, the Working Groups must have the opportunity serve their designated functions, even if this requires more time than originally envisioned. It is critical that the Companies take the time to meaningfully respond to and incorporate stakeholder feedback.” GD-2 at 10

“The Companies state that stakeholder input `is effectively equivalent to continuous independent evaluation [,]` and that `any incremental independent evaluation is redundant.‘ Considering the observed limitations of stakeholder engagement to-date, the commission is not convinced that the current process will provide review sufficiently meaningful to obviate independent evaluation.” GD-2 at 11

#### HECO`s Technical Advisory Panel

HECO filed a letter with the Commission on May 27, 2020 detailing the failure of their Technical Advisory Panel (“TAP”) and their proposal to restructure the entity. This failure, nearly two-years into the proceeding, was remarkable. HECO created their TAP, assigned people to the TAP, and chose the Director of the Hawaii Natural Energy Institute (“HNEI”) to head the TAP. HECO wrote the meeting agendas, wrote the meeting minutes, and made most of the presentation at the meetings. Yet even HECO realized that something went wrong!

“The proposal intends to address limitations and improve the efficacy of the TAP to assist the Companies in meeting their goals. a. TAP Member Engagement: A number of the participants are either only intermittently involved or may not have the ideal expertise to address the Companies’ issues, such as large-scale distributed energy penetration on an island grid. b. Working Group Review: Current working group presentations at the TAP meetings, while useful, have not led to substantive TAP guidance and review. Furthermore, waiting for formal review point filings will not lead to optimal TAP input. c. TAP Meeting Preparation: The current TAP presentations seem to be structured to have the TAP more in a listening mode rather than as an advisor -that is, there seems to be insufficient time for a dynamic interchange of questions and ideas. d. Stakeholder Council-TAP Engagement: Despite the guidance of the Commission to better engage the Stakeholder Council, there has been limited substantive interaction between the Stakeholder Council and the TAP. Proposed Changes for Improving TAP Effectiveness. TAP Member Engagement: Reform TAP membership with new members that will be more involved and relevant to the Companies’ challenges and needs. Clearly state expectations ahead of time, including calendar of meetings (in-person), expected feedback, funding requirements, and expected hours per month.” HECO’s Update to IGP Schedule, Workplan, and Interdependencies with Other Dockets at 11, filed May 27, 2020.

### Third Guidance Document

Over 28 months into the proceeding, the Commission had to once again remind the utility that there are other stakeholders. The Commission issued Order No. 37419, the third guidance document (“GD-3”), on November 5, 2020.



“The work in IGP touches upon nearly every element of Hawaiian Electric's business. For IGP to become truly integrated, Hawaiian Electric staff who work on IGP must communicate and coordinate with every other part of Hawaiian Electric's business, in timely and transparent manner.” GD-3 at 5

“On August 18, 2020, Hawaiian Electric held its most recent Stakeholder Council meeting. At that meeting, Hawaiian Electric and certain stakeholders presented proposal to reorganize the Stakeholder Council, with the goal of allowing stakeholders to steer the IGP process, and provide substantive, detailed feedback to Hawaiian Electric before it makes final decisions. The Commission has repeatedly emphasized the importance of stakeholder input in the planning process. This means not just presenting findings to stakeholders, but proactively seeking stakeholder feedback, giving stakeholders the time and resources necessary to providing meaningful feedback, and incorporating stakeholder feedback into IGP deliverables.” GD-3 at 10

“The Stakeholder Council, the Technical Advisory Panel, and the IGP Working Groups include broad range of stakeholders who can provide valuable insights and expertise. The Commission continues to believe that Hawaiian Electric will benefit by giving these stakeholders meaningful opportunities to develop and improve the IGP process and the plans. The Commission expects that the proposed Stakeholder Council reorganization will advance these goals. Therefore, the Commission encourages Hawaiian Electric to pursue the Stakeholder Council reorganization.” GD-3 at 10-11

## IGP Updated Workplan

HECO issued its IGP Updated Workplan (“UW”) on January 19, 2021.

Life of the Land asserts, "What we have here is a failure to communicate." Integration means "an act or instance of combining into an integral whole." The Updated Workplan is piecemeal with sections that point to other documents, and those documents point further down the rabbit hole.

Due to HECO’s UW documents page numbering system, the page references in this filing are the pdf page numbers.

“The intent of the IGP was to engage with stakeholders early in the planning process so that their input and feedback could be utilized during the planning process, rather than only giving stakeholders an opportunity to provide feedback after the planning process was complete.” UW at 2

“The Companies remain committed to engaging customers and stakeholders across our various communities of interest. The Companies have been doing this consistently since the 2016 PSIP and are a recognized industry leader in this regard.” [emphasis added] UW at 15

“To be clear, the Companies are not suggesting that stakeholder feedback is not critical to the IGP process. Rather, the Companies believe that the significant effort put into stakeholder engagement over the past couple of years has significantly improved its work products.” UW at 16

“It is time for the Companies move forward with the current IGP cycle and to utilize the working group deliverables and gain operational experience. The Companies will then be able to apply any lessons learned and update their methodologies, if needed, in time for the next IGP cycle.” [emphasis added] UW at 17.

“As the Companies’ December 2018 IGP Workplan described, seven working groups would be assembled in 2019 to address key areas of development that would shape the inputs, assumptions, and methods to integrate resource, transmission, distribution planning to produce a stakeholder driven long-term resource plan that meets the needs of customers and state policy objectives. The seven working groups each had a clear set of objectives and deliverables as outlined in the Workplan and working groups.” UW at 22

“The IGP stakeholder engagement plan has been a significant undertaking for the Companies as well as stakeholders with a proactive engagement approach to attain; • Constructive and long-term working relationships with stakeholders, • Stronger communication and transparency between parties, regulators, and the utility, • Building of common ground on key issues and common vocabulary, • More efficient and streamlined regulatory proceedings related to grid planning • Stakeholder feedback to incorporate into the development of planning inputs, assumptions, methodologies, and processes, and • Transparency, predictability, and buy-in from different interested parties.” UW at 22

“The Companies will continue to proactively seek stakeholder feedback, giving stakeholders time and resources to provide meaningful feedback, and incorporating feedback into deliverables as appropriate. This will occur through periodic public engagement as noted on the revised IGP process timeline and two focused venues: the SC and a new Stakeholder Technical Working Group.” UW at 35

“Two of the most prominent themes from the public meetings and panelists included a discussion related to community impacts and land use (i.e., agricultural lands) in the development of renewable projects. The Companies intend to discuss these very important issues with the SC to find solutions to address these customer suggestions, comments, and concerns.

This is an important issue that, if solved in the right way, would yield significant benefits not only to the IGP process and but also in attaining the RPS goals.” UW at 36

### Public Meetings

Hawaiian Electric launched a public engagement program in March 2020 consisting of online discussions and four in-person meetings with kiosks and panel discussions.

### First Review Point

The Commission issued Order No. 37604 on February 4, 2021 establishing that the Consumer Advocate's and Interveners' First Review Point comments are due on February 25, 2021. HECO's Reply Comments are due on March 4, 2021.

The Commission ask the Consumer Advocate and Interveners to answer the eight questions as a part of their comments, noting 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.

1. Is the baseline set of forecasts and assumptions proposed a reasonable starting point for IGP long-term planning? If so, why? If not, why not? If more information is necessary to answer this question, please explain.

Planning can be done in two completely different ways. One way is examining a structure today and asking what is the least-financial-cost to making an incremental improvement? The other way was suggested by the Gas Company's Gail Gilman in a regulatory meeting more than

a decade ago. Let`s all shut our eyes for a minute. What do you envision Hawai`i will look like when our goal is complete? Now, how do we get there?

HECO approached it from the first perspective. They rely on two computer programs (RESOLVE<sup>1</sup> and PLEXOS<sup>2</sup>) that are focused entirely on cost and that determine the least-cost way forward.<sup>3</sup> Historically, that has meant long regulatory fights over proposed projects.

Forecasting has increased in complexity but is just as needed as ever. But first, a serious examination of the utility system`s baseline is required. Adding to any structure should occur after the soundness of the structure has been determined. Hurricane Maria in Puerto Rico, California wildfires, Winter Storm Uri in Texas, and Hurricane Lane and Rain Bombs in Hawai`i, are pre-cursors of the climate crisis future. The climate crisis, the energy revolution (crashing prices of solar and storage, digitalization), regulatory transformation (“Performance Based Regulation” or “PBR”), and the new normal (covid-19 pandemic) have increased the complexity of the forecasting endeavor.

HECO asserted in the IGP Resilience Working Group that HECO would model different adverse extreme weather events. HECO contracted with Jupiter Analysis and Pike Engineering. None of the studies are available.

Take the issue of electrification. We asked HECO how many megawatt-hours of electricity is needed to convert all fossil fuel powered vehicles. They didn`t know.

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<sup>1</sup> "RESOLVE is a mixed-integer linear optimization model that is explicitly tailored to the study of electricity systems with high renewable and clean energy policy goals. The optimization performed in RESOLVE balances the fixed costs of new investments with variable costs of system operations, identifying a least-cost portfolio of resources to meet planning needs across a long-term horizon." UW at 47

<sup>2</sup> "PLEXOS is a production simulation model that analyzes the chronological, hour-by-hour operation of a utility's generation system. PLEXOS dispatches (mathematically allocates) the forecasted hourly net megawatt (MW) load among the dispatchable generating units in operation. Unit commitment (starting and stopping of units) and dispatch levels of generation are generally based on fuel cost and unit efficiency." UW at 58

<sup>3</sup> "Hawaiian Electric proposes to use the RESOLVE model to produce a reference optimized resource plan that is then verified in PLEXOS through an hourly production simulation to capture total system costs as part of the Grid Needs Assessment." UW at 47

	Oahu	Hawai`i	Maui County
Electricity sold kWh	6,563,104,000	1,049,542,000	1,127,338,000
RPS	25.2	34.7	40.8
Fossil Fuel (kwh)	4,909,201,792	685,350,926	667,384,096
Vehicle Miles of Travel (VMT)	6,926,800,000	2,039,400,000	1,655,800,000
VMT (kwh) Mile = 0.31 kwh	2,147,308,000	632,214,000	513,298,000
Fossil Fuel Electricity + VMT (kwh)	7,056,509,792	1,317,564,926	1,180,682,096
Fossil Fuel Electricity + VMT (MWh)	7,056,510	1,317,565	1,180,682
Acres (400 MWh/acre)	17,641	3,294	2,952
Square Miles (650 acres/sq mi)	27.1	5.1	4.5
Area (square miles)	597	4,028	1,128
RE land needed % of County	4.5	0.1	0.4

Once the totals are known, then people can rely on their personal values, beliefs, attitudes, and examine energy needs in combination with other needs – water, food, broadband, jobs, etc., -- to determine what is reasonable and what isn't.

Instead, the utility adopts a bunch of stated and unstated assumptions and attempts to corral outcomes into pre-conceived buckets.

2. Does the draft inputs and assumptions sufficiently incorporate stakeholder feedback, or transparently explain why it did not, consistent with Commission guidance?

The draft inputs and assumptions incorporate HECO's vision and gives lip service to stakeholder input. For over a year HECO downloaded high-level information onto meeting attendees as the attendees gradually stopped attending. The same information appeared several times. Perhaps HECO is more open to input now. But not stating who said what means the writer (HECO) can pick and choose what comments to describe and it is difficult to dispute. This is not to say that some of the information wasn't useful. But it has a sailing analogy: 99% calm and 1% terror, or in the case of IGP, 99% of "why am I here?" and 1% of fascination.

“The Companies remain committed to engaging customers and stakeholders across our various communities of interest. The Companies have been doing this consistently since the 2016 PSIP and are a recognized industry leader in this regard. As such, a significant aspect of the IGP process aligns with the Commission desire for the Companies to incorporate stakeholder feedback into the planning process.” [emphasis added] UW at 11

“Stakeholder input to each of the working group deliverables is captured in the notes posted to each working group’s web page, and the deliverable documents include notations describing how the Companies have incorporated and addressed stakeholder input, as described in the Commission’s guidance. Indeed, the hope was that the planning process would become more streamlined because stakeholders had an opportunity to provide input and feedback while work products were being developed, rather than using the more traditional approach of both stakeholders and the Commission reviewing forecasts and plans after they were submitted, which often requires going back to rework the deliverables (e.g., multiple PSIP iterations).” [emphasis added] UW at 11

Order 37419 recommends providing the SC with an opportunity to review all of the IGP work products to date ... The Companies respectfully maintain that this is unnecessary and redundant and will cause unwarranted delays in the IGP process. The technically oriented SC members have already provided input and feedback during their working group participation on the development and final review of the work products or have had the opportunity to review the publicly accessible documents. Furthermore, the SC is changing its orientation toward more strategic issues, not technical aspects.” [emphasis added] UW at 12.

SC is advisory only. It can’t make decisions. No, the SC is not changing its focus. HECO is changing the focus of the SC, at least in theory. HECO always focused on the 20,000-foot

view at the SC. Alleging that the SC will now become strategic rather than technical is likely a misnomer.

“To be clear, the Companies are not suggesting that stakeholder feedback is not critical to the IGP process. Rather, the Companies believe that the significant effort put into stakeholder engagement over the past couple of years has significantly improved its work products.” *UW at 12*

“Hawaiian Electric staff is continually working to incorporate input from IGP stakeholders into the deliverables. For example: • The FAWG provided feedback that a warming trend in forecasted temperatures should be included as a measure of climate change as part of the forecast for the underlying load layer.” *UW at 12*

“It is time for the Companies move forward with the current IGP cycle and to utilize the working group deliverables and gain operational experience. The Companies will then be able to apply any lessons learned and update their methodologies, if needed, in time for the next IGP cycle.” [emphasis added] *UW at 13*

“The seven working groups each had a clear set of objectives and deliverables as outlined in the Workplan and working groups. Those objectives and deliverables were reaffirmed at the November 7, 2019 SC meeting.” [emphasis added] *UW at 22*

BUT the Nov 7, 2019 minutes had only one citation for deliverables. “The SEOWG will meet one to two times a month leading up to its last meeting in March 2020 at which time it will review all its deliverables.”

The minutes also stated, “STAKEHOLDER COUNCIL OBJECTIVES, ROLES AND RESPONSIBILITIES & STAKEHOLDER ENGAGEMENT Slides included in Presentation



Materials from November 7, 2019. The agenda for this IGP SC meeting was built around the discussion that took place during the previous IGP SC meeting held on August 23, 2019.”<sup>4</sup>

The August 23, 2019 notes did not use the word “deliberables” but did use the word objectives twice. “Soft Launch ... The goal is to issue a draft RFP on September 3, 2019, with the objective of gathering stakeholder feedback to shape what is needed for the final RFP. [] There is a desire to know what the other working groups are discussing and what information they may need from the Stakeholder Council. Members also requested that stakeholders be informed in advance what the meeting objective is and what types of feedback is needed.”

“The Stakeholder Council is an advisory group, not a decision-making body. Ultimately, the utility will decide what is presented to regulators, but stakeholders will help develop and provide input that affects the steps along the way.” HECO Minutes for the November 7, 2019 SC meeting.<sup>5</sup>

3. Please explain if the Commission should approve, reject, or modify the IGP inputs and assumptions presented.

Life of the Land is unclear how the plan will be used, that is, what its purpose is. The IGP plan appears to contain some but not all the different things moving forward. If something is in the IGP Plan is there a presumption that it is needed? The Commission is correct in opening a proceeding to speed up the interconnection process. Delaying the IGP may slow things down, it may allow for greater transparency and revised inputs, or it may have no impact on anything. If

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[https://www.hawaiianelectric.com/documents/clean\\_energy\\_hawaii/integrated\\_grid\\_planning/stakeholder\\_engagement/stakeholder\\_council/20191107\\_sc\\_meeting\\_summary\\_notes.pdf](https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/stakeholder_engagement/stakeholder_council/20191107_sc_meeting_summary_notes.pdf)

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[https://www.hawaiianelectric.com/documents/clean\\_energy\\_hawaii/integrated\\_grid\\_planning/stakeholder\\_engagement/stakeholder\\_council/20191107\\_sc\\_meeting\\_summary\\_notes.pdf](https://www.hawaiianelectric.com/documents/clean_energy_hawaii/integrated_grid_planning/stakeholder_engagement/stakeholder_council/20191107_sc_meeting_summary_notes.pdf)

the desire is to limited long, drawn-out, contested case proceedings, then IGP isn't helping.

HECO must engage in a meaningful, two-way communication, that results with something that most or all sides can live with.

4. Hawaiian Electric explains that the unmanaged electric vehicle charging assumption is incorporated into the baseline forecast and the outcomes from managed charging will then modify this forecast based on specific program provisions. Is this a reasonable way for Hawaiian Electric to treat electric vehicle charging? (FRP at 5-6)

“The inputs for the EoT forecast, including electric vehicle counts and vehicle miles traveled, have been shared with the FAWG and are available on the FAWG web page. Further details on the EoT forecast were provided in response to PUC-HECO-IR-1, filed July 2, 2020, in the IGP docket.” UW at 10

The FAWG web page simply lists documents and urls.<sup>6</sup>

HECO filed “Response to Commission's Information Requests” on July 2, 2020. “The light duty electric vehicle forecast was based on an adoption model developed by Integral Analytics, Inc. as described in Appendix E of the EoT Roadmaps to arrive at EV saturations of total light duty vehicles (“LDV”) by year for each island, see the “EV Saturation” tab in the Excel file “PUC-HECO-IR-1 Att 8 Electric Vehicles.xlsx” HECO Response to PUC-HECO-IR-1 at 21 of 23

PUC-HECO-IR-1 does not present the data but rather points to several other documents. The footnote url isn't copyable. Fixing the spelling of the footnote gets to the document with an

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<sup>6</sup> <https://www.hawaiianelectric.com/clean-energy-hawaii/integrated-grid-planning/stakeholder-engagement/working-groups/forecast-assumptions-documents>

Appendix E.<sup>7</sup> "The development of the electric vehicle forecast was based on combining macro-level Bass Diffusion models with geospatial customer-level, agent-based models."

A far, far, far simpler way is to state the total miles driven in Hawai`i in 2019 by category (DBEDT Data Book), determine the equivalent kWh if the entire fleet were eV, and then in any given year, state the percent of the total fleet that has been converted and its associated kWh. Knowing that, one can also determine the amount of charging units needed.

If Hawai`i converted all fossil fuel systems to renewable energy, how much land would be needed? The answer is of critical importance. This analysis examines all electricity and all ground transportation. It excludes gas provided by gas companies and gas utilities, marine transportation, and aviation. Although there are many types of renewable energy – solar, hydro, wave, onshore and offshore wind, etc., and there is centralized and distributed options, this analysis assumes commercial-scale solar. Picking the right base year is tricky. Data is available from 2020 but the pandemic distorted the data. Using 2019 data excludes geothermal on the Big Island. Commercial-scale solar projects vary by the amount of land they occupy per MWh of anticipated production. Life of the Land picked five recent solar projects at random and found that a reasonable estimate is 400 MWh/acre. Ulupono Initiative used the electric vehicle (eV) conversion rate of 0.31 kWh/mile in their recent Performance-Based Regulation (PBR) filings. The raw data is found in the Raw Data: Hawaii Data Book 2019, Table 17.10 -- Electric Utilities,

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[https://www.hawaiianelectric.com/documents/clean\\_energy\\_hawaii/electrification\\_of\\_transportation/201803\\_eot\\_ro\\_admap.pdf](https://www.hawaiianelectric.com/documents/clean_energy_hawaii/electrification_of_transportation/201803_eot_ro_admap.pdf)

By Island: 2019,<sup>8</sup> Table 18.17 -- Motor Vehicle Fuel Consumption and Vehicle Miles,<sup>9</sup> and HECO Renewable Portfolio Standard ("RPS") Compliance -- Historical Data.<sup>10</sup>

	Oahu	Hawai'i	Maui County
Electricity sold kWh	6,563,104,000	1,049,542,000	1,127,338,000
RPS	25.2	34.7	40.8
Fossil Fuel (kwh)	4,909,201,792	685,350,926	667,384,096
Vehicle Miles of Travel (VMT)	6,926,800,000	2,039,400,000	1,655,800,000
VMT (kwh) Mile = 0.31 kwh	2,147,308,000	632,214,000	513,298,000
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Square Miles (650 acres/sq mi)	27.1	5.1	4.5
Area (square miles)	597	4,028	1,128
RE land needed % of County	4.5	0.1	0.4

For sizing purposes only, and certainly not as a suggestion, a 5-mile by 6-mile block would provide the space needed on O`ahu. Six miles is Dole Plantation to Weed Circle in Haleiwa.

5. Hawaiian Electric proposes not to include energy efficiency, distributed energy resources, or electrification of transportation tariffs, and programs from ongoing Commission dockets in this first IGP cycle. Please explain if it is appropriate for Hawaiian Electric to wait until the next IGP cycle to include these tariffs and programs. If not, please propose a remedy. Please be as specific as possible. (FRP at 9)

<sup>8</sup> <https://files.hawaii.gov/dbedt/economic/databook/db2019/section17.pdf>

<sup>9</sup> <https://files.hawaii.gov/dbedt/economic/databook/2019-individual/18/181719.pdf>

<sup>10</sup>

[https://www.hawaiianelectric.com/documents/about\\_us/key\\_performance\\_metrics/historical/historical\\_03\\_RPS.xlsx](https://www.hawaiianelectric.com/documents/about_us/key_performance_metrics/historical/historical_03_RPS.xlsx)

“IGP integrated solution sourcing provides a holistic approach to evaluating the potential to meet incremental resource, transmission, and distribution requirements through a range of services and resources. It specifically includes services from customer energy resources. The IGP process outlines the sourcing of resources for system needs, which generally involves identification and acquisition of services through three general methods: pricing, programs, and procurements (the 3Ps) described in Table A below:

Mechanism	Mechanism
Pricing	Signaling value and costs through pricing in customer rates. Customers enroll in pricing options rate schedule.
Programs	Enabling customer participation through either energy-efficiency or utility administered programs. In programs, the customer either purchases an energy efficiency measure in exchange for a rebate or incentive, or enrolls in a utility program and receives an incentive payment, typically in the form of a bill credit.
Procurement	Obtaining energy, capacity, and ancillary services through a competitive procurement process.

“The IGP planning process starts with the current state, reflecting existing and approved tariffs and programs as well as existing resources (and contracted resource development) in the forecast. This provides the reference to model the incremental resource and grid services needed. Once incremental resource and grid services needs have been identified, the Companies will initiate sourcing of solutions that meet these needs.

“There is a discontinuous dimension to this sourcing, because the regulatory process for determining new tariffs and programs (including Hawaii Energy’s energy efficiency programs) is conducted in separate dockets on different timelines that do not align with this initial IGP schedule. The Companies recognize the inherent value of prioritizing customer demand side resources in the development of the resulting solution portfolio. However, due to the timing mismatch it is necessary to incorporate the pending results of the current dockets regarding

tariffs and programs for DER, EE, and EoT into the next IGP cycle. It is not appropriate or practical to incorporate a range of hypothetical tariffs and programs into this IGP cycle for the purpose of identifying incremental needs. There is sufficient long-term market opportunity for the value of new tariffs and programs described in the Commission's guidance to consider in the next IGP cycle, especially as customers electrify their means of transportation.

“In the meantime, as discussed in this workplan, the Companies will continue to support current Commission tariff and program efforts through analytical modeling outside the current IGP planning process. This separate analytical support will help inform the potential value and shape of these tariffs and programs. The Companies are committed to supporting any discussion regarding how to maximize the value of customer resources and energy efficiency for all customers.” UW at 13

A holistic approach examines the complete picture. If an energy efficiency, distributed energy resources, or electrification of transportation tariffs, or programs could solve a need, and instead HECO holds off on that solution, and instead picks a more costly capital improvement project that is financed by ratepayers through the Major Projects Interim Recovery (“MPIR”) mechanism, that isn't a holistic solution. Since HECO must fix this weakness in the current IGP cycle, HECO may also have coinciding time to truly listen to stakeholder input.

6. The IGP Workplan proposed to consider programs concurrent with the request for information ("RFI") step within the competitive procurement process. The First Review Point includes a proposed updated sourcing process that appears to indicate that Hawaiian Electric will source solutions solely through procurement first. Then Hawaiian Electric would consider near term needs not met through procurement in a follow-on procurement and/or program or tariff. Is

it appropriate for Hawaiian Electric to source solutions via procurements before considering pricing and programs? Should Hawaiian Electric compare solutions sourced through pricing, programs, and procurements simultaneously? (FRP at 10, 30)

Energy efficiency, demand response, interruptible loads, peak pricing, and other pricing mechanisms and programs can cut the need for costly infrastructure. The HECO idea that these should not interfere with HECO's desire for ratepayer-financed capital improvement projects in the next decade lacks credibility.

“Going forward, based on discussions and feedback from the CPWG, procurements will benefit from more detailed interconnection information as well as the Companies selecting sites and technology in advance of procurement will help streamline the procurement process. This more centralized approach to interconnection where the Companies provides insight into interconnection requirements and cost would be more efficient than requiring developers to develop the interconnection information. Additionally, selecting sites and technology in advance and working with stakeholders such as the Commission, Consumer Advocate, the Hawaii State Energy Office, landowners, and others to complete community outreach for locations prior to running RFPs or selecting developers will significantly aid in the interconnection process. [] Of course, such steps will require time prior to the procurement to identify sites, interconnection requirements and complete community outreach, but the Companies (and many stakeholders who have reached out to the Companies) believe that such efforts will speed the overall process in the end.” UW at 33

Life of the Land asserts, to speed the process of adding new renewable energy resources to the grid requires two things: (a) fast interconnection analysis that obviously isn't occurring due to the need for the Commission to open docket no. 2021-0024, and (b) consulting with

communities and intervenors about acceptable sites. Life of the Land proposed discussing under confidentiality shield, sites proposed by developers. HECO said no. HECO will discuss site analysis with state agencies and landowners but not those who would challenge a site. This obviously only increases delays.

“As demonstrated through recent competitive procurement for renewable generation, competitive procurements are the best mechanism to acquire resources at the lowest cost on the market.” UW at 14

HECO should make it clear that all bids outside the competitive procurement process are slow-tracked or ignored.

“These follow-on procurements are intended to be streamlined, which is why the Companies will evaluate creating `Form` RFPs for these types of procurements that could be pre-approved by the Commission, as discussed in the CPWG with stakeholders and in revisions to the Competitive Bidding Framework (`CBF`).” UW at 14 “The revised CBF document will be submitted to the Commission in early 2021.” UW at 33

It should be amazing that HECO wants pre-approval of application forms that have not been seen by stakeholders. The Draft CBF probably exists somewhere in the ether, but it should not be the role of reviewers to search for the document. What is amazing is the amount of time it takes from HECO`s approving an RFP applicant to HECO`s filing an application with the Commission.

“In the CPWG update in Section 2, the Companies describe a number of considerations to streamline the overall competitive procurement and interconnection process, and are currently testing these concepts through various ongoing procurements, which include: Specifying certain viable technologies.” UW at 14



Life of the Land hopes that specifying viable technologies does not imply refusing to consider proven technology not on the viable technologies list, such as hydroelectric opportunities on O`ahu. Hydroelectric is a perfect example. A North Shore hydroelectric facility solves multiple issues: ramping, capacity, flooding, and ocean pollution. Examining the technology from purely a HECO financial perspective is a non-holistic approach. Looking at the issue holistically, rather than silo-thinking or examining the project through a microscope, can result in multiple revenue streams from multiple agencies making the project a better fix than other solutions. This is again, looking at where we want to go, and how to get there, not, how does HECO incrementally increase its revenue stream.

“The purpose of the SEOWG is to identify Grid Needs and review and make recommendations regarding the transparent evaluation and optimization method used to fairly assess proposed solutions from the solution sourcing procurement process. The SEOWG is taking the T&D Needs and developing process for the system level solution sourcing steps. The SEOWG has engaged with 13 different organizations and 29 different individuals during the stakeholder engagement process.” UW at 33

An analysis of the transmission and distribution grid, especially considering HECO`s Resilience Working Group and the new-non-normal climate crisis, seems to be a critical need. HECO seems more interested in silo analysis from 20,000-feet. A holistic analysis is needed. This reminds us of a Waikiki parade from more than a decade ago where police on foot, on bikes and motorcycles, in police cars, on horses, and in helicopters were insufficient, so manhole covers were pre-sealed, yet large substations outside of Waikiki were left totally vulnerable. Silo thinking is dangerous and costly. A full discussion of future T&D needs based on likely future renewable energy sites and new environmental realities is critical.

“The SEOWG stakeholders and participants provided an abundance of feedback on the topics described.” UW at 34

7. Would retrospective evaluation of IGP deliverables by the newly formed Stakeholder Technical Working Group provide benefits commensurate with the additional time spent? (FRP at 7)

“The Companies will work with the SC and TAP and seek their feedback as the Companies progress through the grid needs assessment analysis produced by RESOLVE and PLEXOS.” UW at 11

By the time RESOLVE and PLEXOS are underway, it is too late to point out that neither program addressed environmental concerns such as the climate crisis.

“At this time, the Companies have substantially developed a `reference case` scenario that can be used to inform immediate-term procurements and other ongoing proceedings. The Companies previewed this reference case at the October 2, 2020, SEOWG meeting, and have provided a substantially similar version to the DER Parties’ version for use in Docket No. 2019-0323 to assist in designing new programs, use in Docket No. 2020-0152 to design commercial EV rates, and proposed for use in the upcoming CBRE RFPs. The Companies believe that these updated resource plans should be used to scope and inform any forthcoming competitive procurements, including any contemplated Phase 3 procurement for renewable resources.” UW at 11

It is nice to know that in reviewing this document we must trapse through a bunch of other documents. If IGP is indeed to total forecasting, planning, requesting, and procuring solutions, then the document should contain all relevant material.

The approach used is to project costs and technologies 30-years outward, and then to make predictions of which portfolio of technologies has the lowest FINANCIAL cost instead of determining what projects would be acceptable to the community, which technologies are excluded because HECO does not want to consider them, and what sites are available and therefore what the limits are to deploying any given technology.

“[M]any components and aspects of the December 2016 PSIP action plan have changed as the action plan was executed over the past four years.” UW at 11

Right, things changed radically in five years but HECO is planning six times further into the future.

“Additionally, the Companies will use this `reference case` as a baseline scenario, in addition to the other scenarios and sensitivities that the SEOWG and SC developed consensus around in the past year.

The Companies stress that sensitivities and discussion related to modeling analysis in this step of the process do not become a protracted discussion of technology choices. Rather this step is intended to identify the needs and services required to achieve 100 percent RPS, among other policy goals. The solution sourcing will allow the Companies and stakeholders to identify which resources and technologies best meet those needs.” UW at 11-12

“The Companies have provided the latest IGP reference case RESOLVE models to the DER Parties under non-disclosure agreement to assist the Parties in designing and proposing new long-term DER programs.” UW at 19

By contrast, SC and Working Group members do not have access to the models that produce the solutions.

8. Is this response from the Technical Advisory Panel sufficient to provide independent review? If not, what additional independent review would be appropriate? (FRP at 200-207)

The initial Technical Advisory Panel (TAP) consisted of people chosen by HECO. The agendas and notes were written by HECO. Most of the presentations were by HECO. The TAP members were independent because HECO said so. No members of the public were permitted to be wallpaper, listening to the proceedings. Feedback followed the Chatham House Rule. No record of what individual TAP members said was made part of the record. There is no record of interconnecting relationships between and among TAP members and HECO.

“In the winter of 2019/2020, Hawaiian Electric Company (HECO) and the Hawaii Natural Energy Institute (HNEI) began a process to reform the TAP, including changes to both the TAP membership and TAP directive. This effort culminated in a revised work plan submitted May 27, 2020 to the HPUC by HECO. This document specified a more expanded role for the TAP with the guidance that "through its November [2019] IGP Commission Guidance, the Commission noted that, "[f]or the stakeholder process outlined in the Workplan to effectively serve as a replacement for independent evaluation, the Technical Advisory Panel would have to take an active role in analyzing, evaluating, and providing public feedback on Working Group activities and Review Point filings.” UW at 201

TAP failed and was reorganized by HECO in the winter of 2019/2020, including changes to both the TAP membership and TAP directive. The new TAP provided comments that were almost entirely correlated with HECO's positions.

It reminds us of an incident that occurred more than a decade ago, where HECO wanted to change their position on an issue but instead suggested the revision to the Consumer Advocate. The Consumer Advocate then made the recommendation. HECO then agreed with the

Consumer Advocate, noting that HECO was mindful of the need to listen to “independent” input and use that third-party input to change their position. Another example is from the Honolulu City Council. HECO held up a report written by a HECO contractor and asserted it was proof that HECO`s position was correct.

The Commission may sit on TAP and have access to TAP members and feel confident with their output. But there is certainly no way that anyone not connected to TAP or HECO could have any clue about TAP reliability, credibility, or relevance.

“TAP members comments and feedback are intended to address technical aspects of the IGP, including assumptions, methodologies, and modeling tools. While these comments and feedback may impact policy decisions, the TAP review is not intended to support specific policy views or mediate conflicting stances from stakeholder input. Finally, while this report presents observations and recommendations from the TAP, it does not necessarily constitute an acceptance of the IGP methods or results, nor does it validate the accuracy of the results presented.” UW at 200-201

“Jupiter Intelligence’s high-resolution climate analytics provide asset-level resolution for short- and long-term flooding and wind risk to assess physical risks over a 30-year time horizon to help the Companies address the resiliency of its generation, transmission, and distribution infrastructure. In its first phase, the Jupiter climate risk data will help the Companies prioritize geographic locations and assets that are most at risk. Subsequently, it will provide detailed area analyses of all assets.” UW at 208

The Jupiter Intelligence analysis would be critical for stakeholders in assessing the viability of HECO`s current operations and future IGP plans. Unfortunately, we don`t have access.

CERTIFICATE OF SERVICE

The foregoing LIFE OF THE LAND'S NOTICE OF FILING OF LETTER, was electronically filed with the Commission. The copies were emailed to the parties listed below.

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