

TESTIMONY AND EXHIBITS

OF

MELISSA WHITED

**ON BEHALF OF
THE DIVISION OF CONSUMER ADVOCACY**

SUBJECT: PERFORMANCE INCENTIVE MECHANISMS

TABLE OF CONTENTS

I.	INTRODUCTION / SUMMARY	1
II.	SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS	4
III.	OVERVIEW OF PROPOSED PERFORMANCE INCENTIVE MECHANISMS	6
IV.	THE CONVENTIONAL PIMS DO NOT DIRECTLY ADDRESS THE COMMISSION’S OBJECTIVES OR CUSTOMER CONCERNS REGARDING HIGH RATES	12
V.	CONVENTIONAL PIMS WARRANT CONSIDERATION OF STRONGER COST CONTROL INCENTIVES	16
VI.	STRONGER INCENTIVES ARE NOT NEEDED FOR RELIABILITY, CUSTOMER SERVICE, AND DER INTERCONNECTION	20
VII.	CONCERNS WITH PIM TARGETS	32
VIII.	CONTEMPORANEOUS RATEMAKING MECHANISM.....	39
IV.	OVERALL CONCLUSIONS AND RECOMMENDATIONS	53

1 transmission and distribution system reliability, market power, electricity market
2 prices, stranded costs, efficiency, renewable energy, environmental quality, and
3 nuclear power.

4
5 Q. PLEASE STATE YOUR PROFESSIONAL EXPERIENCE AND EDUCATIONAL
6 BACKGROUND.

7 A. My experience is summarized in my resume, which is attached as
8 Exhibit CA-600. I have more than seven years of experience in economic
9 research and consulting. At Synapse, I have worked extensively on issues
10 related to utility regulatory models, performance incentive mechanisms, and
11 policies to address distributed energy resources.

12 Recently, I authored a report for the Western Interstate Energy Board
13 titled "Utility Performance Incentive Mechanisms: A Handbook for Regulators,"
14 and I have presented on performance incentive mechanisms to the National
15 Association of Regulatory Utility Commissioners, National Governor's
16 Association Learning Lab on New Utility Business Models, Midwest Governors'
17 Association, and the Minnesota e21 Initiative working group.

18 I hold a Master of Arts in Agricultural and Applied Economics and a
19 Master of Science in Environment and Resources, both from the University of
20 Wisconsin-Madison. Prior to rejoining Synapse, I published in the *Journal of*
21 *Regional Analysis and Policy* regarding the economic impacts of water
22 transfers, analyzed state water efficiency policies while at the Wisconsin Public

1 Service Commission, and conducted econometric analyses of energy efficiency
2 cost-effectiveness. I also testified before the Wisconsin Senate Committee on
3 Clean Energy regarding the economic impacts of clean transportation options
4 and presented to the Wisconsin Public Service Commission regarding the
5 state's electricity demand response programs and potential.

6

7 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

8 A. The purpose of my testimony is to evaluate Hawaiian Electric Light
9 Company, Inc.'s ("HELCO" or "the Company") proposed performance incentive
10 mechanisms ("PIMs") in this docket. These proposed PIMs address reliability,
11 customer satisfaction and service, and distributed energy resource ("DER")
12 interconnection communication.

13 In addition, my testimony will also provide comments on the Company's
14 contemporaneous ratemaking ("CR") proposal. I understand that the Company
15 is only seeking comments on the CR proposal in this docket and that the
16 Company may ask for formal approval of the proposed CR plan in a future
17 proceeding.

18

19 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

20 A. My testimony is organized in five sections. First, I address the Company's
21 proposed PIMs. These proposed PIMs include conventional PIMs for reliability
22 and customer service (as introduced in HELCO T-25), as well as an energy

1 policy PIM regarding DER interconnections (as introduced in HELCO T-26).
2 Second, I address my concerns regarding how the proposed PIMs do not
3 address the Commission's concerns about high rates. Third, I address my
4 concerns regarding cost controls that are not incorporated in the proposed PIMs.
5 Fourth, I detail my concerns that the proposed conventional PIMs are not
6 currently needed to address reliability, service quality, and interconnection
7 concerns. I then provide comments on HELCO's witness Mr. Gale's CR
8 proposal detailed in HELCO T-26.

9
10 **II. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS.**

11 Q. PLEASE SUMMARIZE YOUR OVERARCHING CONCLUSIONS.

12 A. The Company is proposing to implement several performance incentive
13 mechanisms and has put forth its proposed CR process for resource
14 procurement.

15
16 Q. PLEASE SUMMARIZE YOUR SPECIFIC CONCLUSIONS REGARDING THE
17 COMPANY'S PROPOSALS.

18 A. My conclusions are as follows:

- 19 • The proposed conventional PIMs do little to address the key objectives of
20 reducing costs and accelerating the clean energy transformation.

- 1 • Without additional cost containment incentives, the proposed PIMs risk
2 encouraging over-investment in the utility’s system. Such PIMs would be
3 more appropriate for implementation in a full performance based ratemaking
4 (“PBR”) framework. Alternatively, PIMs could be introduced that reward the
5 Company for reducing costs (such as through non-wires alternatives).
- 6 • The proposed PIMs address areas of performance that are already the focus
7 of current utility investments and improvements. Additional incentives in
8 these areas do not appear necessary at this time.
- 9 • The PIM targets, as currently defined, will likely result in financial rewards for
10 investments that the Company has already undertaken and that customers
11 are already paying for.
- 12 • The utility’s proposed CR process would reduce customer protections and
13 potentially dissuade IPPs from participating in the IRP process.
14 Any changes to the resource procurement and approval process should first
15 consider modifications to the existing processes. This should be done in a
16 separate proceeding to provide adequate input opportunity from
17 stakeholders.

1 Q. PLEASE SUMMARIZE YOUR RECOMMENDATIONS.

2 A. I offer the following recommendations:

3 1) The Commission should reject the Company's PIMs as proposed.

4 2) The Commission should open a separate proceeding to investigate
5 movement to a comprehensive PBR framework.

6 3) If PIMs are to be considered in the current regulatory framework, the
7 Commission should require that the PIMs contain explicit cost
8 containment incentives (such as basing reward levels on net benefits to
9 customers) and are explicitly accelerating HELCO's clean energy
10 transformation.

11 4) The Commission should open a separate proceeding to investigate
12 modifications to the resource procurement and approval process.

13

14 **III. OVERVIEW OF PROPOSED PERFORMANCE INCENTIVE MECHANISMS.**

15 Q. WHY IS THE COMPANY PROPOSING PERFORMANCE INCENTIVE
16 MECHANISMS (PIMS) IN THIS PROCEEDING?

17 A. On November 19, 2015, the Commission filed Order No. 33342, Granting Hawaii
18 Electric Light Company, Inc.'s Motion to Extend Date to File Rate Case and for
19 Approval of Test Period Waiver and Dissent of Randall Y. Iwase, Commission
20 Chair ("Order No. 33342"), wherein the Commission directed the Company to
21 "propose for the Commission's consideration a set of economic incentive and
22 cost recovery mechanisms, as appropriate, consistent with the provisions of

1 Act 37 of 2013 Hawaii Session Laws in order to further encourage reductions in
2 its electric rates and accelerate its clean energy transformation.¹ (emphasis
3 added) The Company explains that “the primary purpose” of proposing PIMs in
4 this proceeding is to respond to the Commission’s ordering paragraph 3c of
5 Order No. 33342.²

6 Q. WHAT TYPES OF PIMS IS THE COMPANY PROPOSING?

7 A. The Company is proposing PIMs that cover three different categories:

- 8 1. Reliability (SAIDI and SAIFI)
- 9 2. Customer Satisfaction and Service (Transaction Satisfaction and Service
10 Level)
- 11 3. DER Interconnection Communication

12

13 Q. PLEASE DESCRIBE THE COMPANY’S PROPOSED RELIABILITY PIMS.

14 A. The Company’s proposed reliability PIMs are based on two industry standard
15 reliability metrics: System Average Interruption Duration Index (“SAIDI”) and
16 System Average Interruption Frequency Index (“SAIFI”). SAIDI is the duration
17 of outages experienced by HELCO customers over a specific time-period,
18 generally over a year.³ SAIFI is the frequency of interruptions experienced by

1 Order No. 33342, at 14.

2 Response to CA-IR-406(b).

3 Mathematically, SAIDI is the sum of outage durations divided by the total number of customers served.

1 HELCO customers over a specific time-period.⁴ The Company normalizes its
2 SAIDI and SAIFI values to remove the impacts of storms and other atypical
3 events.⁵ In this docket, the Company proposes to implement SAIDI and SAIFI
4 PIMs based on 2010-2016 data using the Institute of Electrical and Electronics
5 Engineers (“IEEE”) standard 1366 methodology.⁶

6
7 Q. PLEASE DESCRIBE THE COMPANY’S PROPOSED PIMS FOR CUSTOMER
8 SATISFACTION AND CUSTOMER SERVICE.

9 A. HELCO is proposing two PIMs related to customer satisfaction and service:

10 1. A “transaction satisfaction” PIM that measures customer satisfaction
11 based on recent interactions (transactions) that customers have had with
12 the Company concerning requests to change their service, trouble
13 reports (e.g., power outages), and/or inquiries about their bills.⁷

14 2. A “service level” PIM that measures the percentage of calls answered
15 within 30 seconds by the Customer Service Department.

⁴ Mathematically, SAIFI is the sum of outage incidents divided by the total number of customers served.

⁵ HELCO currently normalizes its reliability data based on a methodology filed in PUC Docket No. 6432, *Methodology for Determining Reliability Indices for HECO Utilities* dated December 1990.

⁶ Response to CA-IR-410(d) and (e).

⁷ Response to CA-IR-407.

1 Q. PLEASE DESCRIBE THE COMPANY'S PROPOSED PIM FOR DER
2 INTERCONNECTION COMMUNICATION.

3 A. The Company's proposed DER PIM is focused on improving communication
4 with customers throughout the interconnection process. The specific metrics
5 can be summarized from HELCO-2603 as follows:

- 6 1) Within 2 business days of application receipt: Acknowledgement
7 notification sent to DER customer that the interconnection application is
8 being reviewed for completeness. Provision of a contact number or email
9 address for inquiries.
- 10 2) Within 10 business days of application receipt: Notification to DER
11 customer that the interconnection application (A) is complete and
12 identifying any issues or (B) is not complete and identifying missing
13 information.
- 14 3) Each 150 days while application is pending: Notification of the status of
15 the application for a DER customer whose interconnection application
16 has been pre-approved and is pending for at least 150 days.
- 17 4) At least 2 business days: Advance notification to a DER customer when
18 a witness verification test will be performed.
- 19 5) Within 3 business days: An initial response (not necessarily resolution)
20 to each DER customer inquiry for customers whose interconnection
21 application has been received and acknowledged.

1 Q. WHAT TARGETS, DEADBANDS, AND PENALTIES/REWARDS ARE THE
2 COMPANY PROPOSING?

3 A. The Company is proposing PIMs with symmetrical penalties/rewards, as well as
4 deadbands and a cap on the maximum reward or penalty. The proposal is
5 based on those put forward by the Company in Docket 2013-0141, but updated
6 with the most recent data.⁸ These values are shown in the table below, as
7 provided by the Company in response to CA-IR-410:

8 *Table 1. HELCO Proposed PIMs*

PIM	Units	Low End of Deadband [1]	Target [2]	Standard Deviation []	High End of Deadband [3]	Maximum Penalty/Reward (millions) [4]
DER Cust. Communication	Days	93%	95%		97%	\$0.21
SAIDI	Minutes	113.79	137.05	23.26	160.31	\$0.49
SAIFI	Occurrences	1.15	1.43	0.27	1.7	\$0.49
Transaction Satisfaction	% survey scores					\$0.21
10 Yr Average Target		88.1	89.4	1.4	90.8	
Service Level	% calls answered	77.5	80.0	2.5	82.5	\$0.21
Total Max. Penalty/Reward						\$1.61

⁸ The DER Communication PIM is new since the Company's original proposal in Docket No. 2013-0141.

1 Q. PLEASE EXPLAIN HOW THE PIM REWARDS AND PENALTIES WOULD BE
2 CALCULATED.

3 A. If HELCO's performance were to fall within the deadband range, then there
4 would be no penalty or incentive. Outside the range, the penalty or incentive is
5 based on the difference between the reported metric and target divided by
6 variance to arrive at a percentage adjustment. The percentage adjustment is
7 multiplied by the maximum penalty or reward to determine the specific penalty
8 or incentive amount.

9 For example, if HELCO reported a T&D SAIDI of 190 minutes, the
10 calculation of the penalty is detailed as follows. The HELCO reported
11 T&D SAIDI of 190 minutes is more than the benchmark of 137.05 minutes
12 by 52.95. 52.95 exceeds the standard deviation of 23.26 by 2.27; therefore,
13 HELCO would be assessed a penalty. The penalty would be $2.27/23.26$ times
14 \$490,000 or \$47,820.

15

16 Q. WHAT IS YOUR OVERALL ASSESSMENT OF THE COMPANY'S
17 PROPOSED PIMS?

18 A. I have four primary concerns regarding the Company's proposed PIMs:

19 1) First, the conventional PIMs of reliability and customer
20 satisfaction/customer service do not directly address the two objectives
21 outlined by the Commission for PIMs of reducing costs and accelerating

- 1 the clean energy transformation, nor do they address customers'
2 concerns regarding high electricity rates.
- 3 2) Second, without additional cost control incentives there is a risk of utility
4 over-investment or gold-plating in distribution related expenditures in the
5 name of service quality improvements.
- 6 3) Third, the evidence does not indicate that stronger incentives are needed
7 for reliability, customer service, and DER interconnection communication
8 at this time. The Company has been investing in all of these areas, and
9 the benefits of even higher levels of investment may not outweigh the
10 costs. I conclude that the proposed PIMs appear to be a solution in
11 search of a problem.
- 12 4) Fourth, I have concerns with how several of the PIMs' targets are set.
13 I discuss each of these concerns in the sections below.

14

15 **IV. THE CONVENTIONAL PIMS DO NOT DIRECTLY ADDRESS THE**
16 **COMMISSION'S OBJECTIVES OR CUSTOMER CONCERNS REGARDING**
17 **HIGH RATES.**

18 Q. WHAT ARE THE COMMISSION'S STATED OBJECTIVES FOR PIMS?

19 A. As noted above, in Order No. 33342, the Commission directed HELCO to
20 propose PIMs with the objectives of:

- 21 1) Encouraging reductions in electric rates, and
22 2) Accelerating the Company's clean energy transformation.

1 While it is important that the Company maintain reliability, assist customers with
2 various transactions, and promptly answers customer phone calls, none of
3 these conventional PIMs directly encourage the Company to reduce costs or
4 transition away from fossil fuels. Thus, despite the Company's contention that
5 the primary purpose of its proposed PIMs is to respond to the Commission's
6 directive in Order No. 33342, the proposed conventional PIMs fail to meet the
7 Commission's objectives.

8

9 Q. DO THE PROPOSED PIMS ADDRESS THE MOST IMPORTANT ISSUES TO
10 CUSTOMERS?

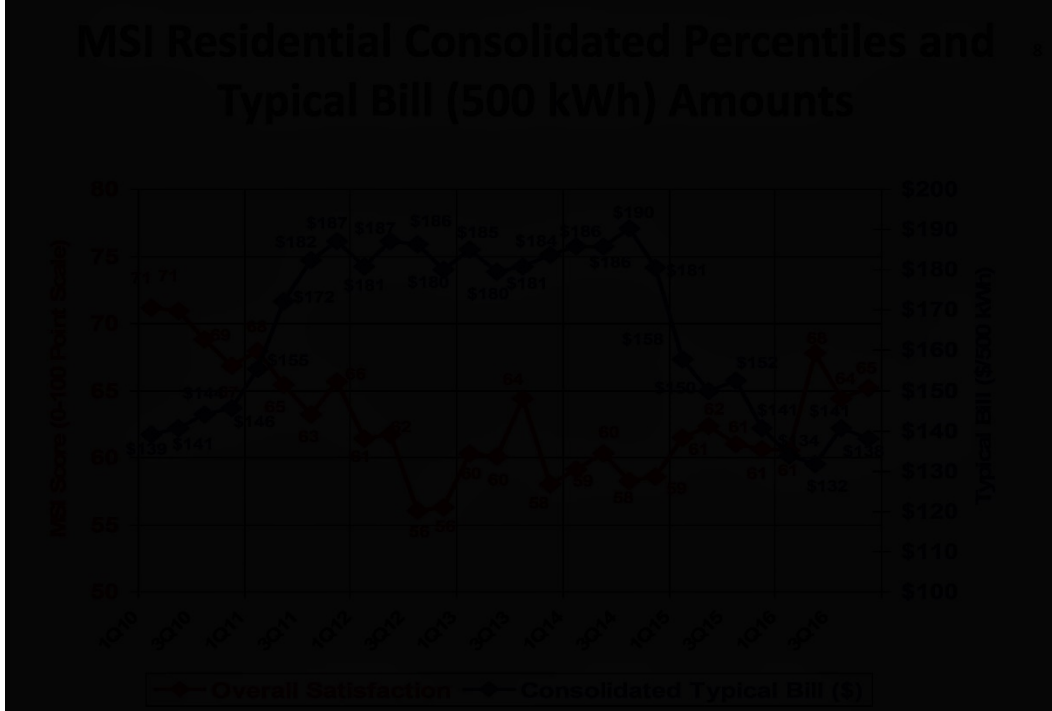
11 A. No. The Company's conventional PIMs do not address a primary contributor to
12 customer dissatisfaction: high electricity rates. [REDACTED]

13 [REDACTED]

14 [REDACTED]

15 [REDACTED]

1
2



3
4
5
6
7
8

For HELCO in particular, the results of customer surveys⁹ show that the high cost of electricity [REDACTED] for customer dissatisfaction. Over the last seven quarters, the high cost of electricity was cited [REDACTED] than poor customer service, outages, or difficulties hooking up solar PV as the reason why customers were dissatisfied.¹⁰

⁹ Confidential Response to CA-IR-56, Attachment 1, page 40.

¹⁰ Confidential Response to CA-IR-56, Attachment 1, page 40. [REDACTED]

1 [REDACTED] below shows how frequently each of these reasons were cited by
2 customers as the reason(s) for their dissatisfaction.

3 [REDACTED]



4

5

6 Q. WHAT DO YOU CONCLUDE FROM THESE SURVEY RESULTS?

7 A. The survey data suggest that while reliability and customer service are important
8 to customers, customers are [REDACTED] concerned about the high cost
9 of electricity. Given these results, it is clear that, consistent with the
10 Commission's directives in Order No. 33342, the Company should be required
11 to target cost containment. Furthermore, absent sufficient justification, it does
12 not appear appropriate to encourage additional investments in reliability and
13 customer service until cost control incentives are also strengthened. I address
14 cost control incentives below.

1 **V. CONVENTIONAL PIMS WARRANT CONSIDERATION OF STRONGER**
2 **COST CONTROL INCENTIVES.**

3 Q. WHY ARE PERFORMANCE INCENTIVE MECHANISMS IMPLEMENTED?

4 A. Conventional performance incentive mechanisms, such as those related to
5 reliability and customer service, have historically been implemented in
6 conjunction with performance-based regulation (PBR) to ensure that service
7 quality does not deteriorate due to utility efforts to control costs.¹¹ In addition,
8 jurisdictions are increasingly considering PIMs to achieve state energy policy
9 goals, such as clean energy investments and integration of distributed energy
10 resources. While the Commission has expressed its interest in PIMs to
11 accelerate the Company's clean energy transition and reduce rates, to date the
12 Commission has declined to implement a comprehensive PBR framework.

13

14 Q. IS IT APPROPRIATE TO IMPLEMENT CONVENTIONAL PIMS WITHOUT A
15 COMPREHENSIVE PBR FRAMEWORK?

16 A. Yes, it can be appropriate to implement conventional PIMs without a
17 comprehensive PBR framework. However, the Company's proposal represents
18 an unacceptable proposal. Without adequate cost control incentives, PIMs may
19 encourage utilities to over-invest in certain areas in order to ensure that they
20 meet the targets. Thus, the Company's proposal could result in the Company

¹¹ This is also noted by the Company in HELCO-2503, page 12.

1 earning incentives even though customer rates and bills may be unreasonably
2 increasing.

3

4 Q. DOES THE COMPANY CURRENTLY FACE COST CONTAINMENT
5 INCENTIVES THAT WOULD BALANCE THE PROPOSED PIMS?

6 A. The Company's current decoupling and revenue adjustment mechanism
7 ("RAM") do contain some incentives to control costs, and these incentives were
8 recently strengthened by the Commission's Order No. 32735, Modifying
9 Decoupling Mechanisms and Establishing Briefing Schedule, filed on
10 March 31, 2015, in Docket No. 2013-0141. However, these cost containment
11 incentives are not as extensive as those imposed by many PBR frameworks.

12

13 Q. IN WHAT WAYS DOES THE COMPANY'S CURRENT RATEMAKING
14 FRAMEWORK DIFFER FROM A COMPREHENSIVE PBR FRAMEWORK?

15 A. A PBR mechanism typically takes the form of a multi-year rate plan. A key
16 component of such plans is a rate case moratorium that frequently lasts two to
17 four years. In addition, an attrition relief mechanism ("ARM") can be
18 implemented that automatically adjusts the revenue requirement according to
19 an external index (such as inflation) without linking the relief to the utility's own
20 cost growth. If the utility's costs grow more slowly than the ARM, the utility
21 retains all or a portion of the savings. Both of these components provide strong
22 cost control incentives.

1 In contrast, the Company's current ratemaking framework consists of a complex
2 array of cost recovery mechanisms that do not represent a comprehensive PBR
3 framework with strong incentives for cost control. The current RAM bears some
4 similarities to a multi-year rate plan, in that revenues related to O&M are
5 escalated to account for general inflation (GDPPI). Capital costs under a
6 specific threshold are recovered through the RAM, subject to a cap. However,
7 cost recovery is tied to the cost of the projects, rather than an external index.
8 Thus, the Company is not rewarded for avoiding or deferring investments where
9 possible, and If any projects come in under budget, the Company does not retain
10 the savings. Further, the cap is not a "hard" cap, as utility investments above
11 the RAM cap may be allowed with Commission approval.

12 In addition, it is not clear that the Company currently faces an explicit rate
13 case moratorium. While the August 8, 2010, order in Docket No. 2008-0274
14 sets forth a mandatory three-year staggered rate case schedule for the
15 Hawaiian Electric Companies,¹² the language in the order does not appear to
16 prevent the Company from filing a rate case sooner should the Company
17 determine the need to file a rate case. This means that if costs grow more
18 quickly than anticipated, the Company does not have to wait to file for a rate
19 increase, thereby reducing the incentive for the Company to operate as
20 efficiently as possible.

¹² Decision and Order dated August 8, 2010, Docket No. 2008-0274, page 124.

1 Q. SHOULD THE COMMISSION CONSIDER IMPLEMENTING A PBR
2 FRAMEWORK IN THIS PROCEEDING?

3 A. It would be worthwhile for the Commission to investigate a comprehensive PBR
4 framework that contains both PIMs and clear cost containment incentives.
5 The Company states that “a separate investigatory docket on PBR is the optimal
6 venue for the Commission to develop a full record on a broader framework or
7 plan for PBR for all three Hawaiian Electric Companies.”¹³ I concur with the
8 Company’s recommendation.

9

10 Q. ARE THERE EXAMPLES OF PIMS OUTSIDE A PBR FRAMEWORK?

11 A. Yes, PIMs are sometimes implemented outside of a PBR framework. However,
12 in such cases, PIMs may be penalty-only or base financial rewards on net
13 benefits to customers. Some examples of PIMs implemented outside of a PBR
14 framework include:

- 15 • Demand-side management PIMs. Incentives for utilities to implement
16 energy efficiency programs are very common. However, the costs of
17 implementing such programs are not ignored. Program costs are
18 generally scrutinized through regulatory proceedings and subjected to
19 cost-effectiveness tests, and rewards may also be based on net benefits
20 (i.e., savings) to customers.

¹³ HELCO T-25, pages 13-14

- 1 • Penalties for service quality. According to a 2012 survey of service
2 quality standards in the United States, 17 jurisdictions impose penalties
3 for failure to meet standards.¹⁴
- 4 • Non-wires alternative PIMs. Consolidated Edison's Brooklyn Queens
5 Demand Management program contains an incentive that is based in
6 part on savings to customers relative to the traditional investment. For
7 every one percent reduction in costs (measured as net present value of
8 dollars per megawatt), the utility may earn one basis point (up to 30 basis
9 points.)

10
11 **VI. STRONGER INCENTIVES ARE NOT NEEDED FOR RELIABILITY,**
12 **CUSTOMER SERVICE, AND DER INTERCONNECTION.**

13 Q. ARE THE PROPOSED PIMS NEEDED TO ENSURE THAT THE COMPANY
14 DOES NOT NEGLECT RELIABILITY, SERVICE QUALITY, OR DER
15 INTERCONNECTION?

16 A. No, PIMs are not needed to ensure those objectives. Financial incentives can
17 provide a very strong signal to a utility to improve performance in certain areas.

¹⁴ See: O'Neill Management Consulting, LLC, "Recommendations for Strengthening the Massachusetts Department of Public Utilities' Service Quality Standards," Prepared for the Massachusetts Office of the Attorney General, December 13, 2012.

The Company reports that there is also one jurisdiction in the United States – California – that implements both penalties and rewards for service quality PIMs outside of a full PBR mechanism. This is the only U.S. jurisdiction that we are aware of that implements service quality rewards without PBR.

1 However, financial incentives may not be needed, particularly if service quality
2 is generally acceptable. For this reason, I recommend first using performance
3 metrics (without financial incentives) to monitor performance and determine
4 whether there are areas that need improvement. If such areas are identified,
5 then it may be appropriate to address them through the use of financial
6 incentives.

7

8 Q. DOES THE COMPANY CURRENTLY REPORT PERFORMANCE METRICS?

9 A. Yes. Pursuant to the Commission's Decision and Order No. 31908,¹⁵ the
10 Company reports a variety of performance metrics on its website. These metrics
11 include the areas of reliability, customer transaction satisfaction, call center
12 service, and net metering customers.¹⁶ Reliability metrics are also published by
13 the Commission each year in its fiscal year annual reports.¹⁷

14 While these reporting metrics do not provide a direct financial incentive
15 to the utility, they do enable the Commission and other stakeholders to monitor
16 the Company's performance and encourage the Company to devote sufficient
17 attention to these areas.

¹⁵ Decision and Order No. 31908, filed on February 7, 2014, Docket No. 2013-0141.

¹⁶ <https://www.hawaiielectriclight.com/about-us/key-performance-metrics/service-reliability>

¹⁷ <http://puc.hawaii.gov/reports/annual-reports/>

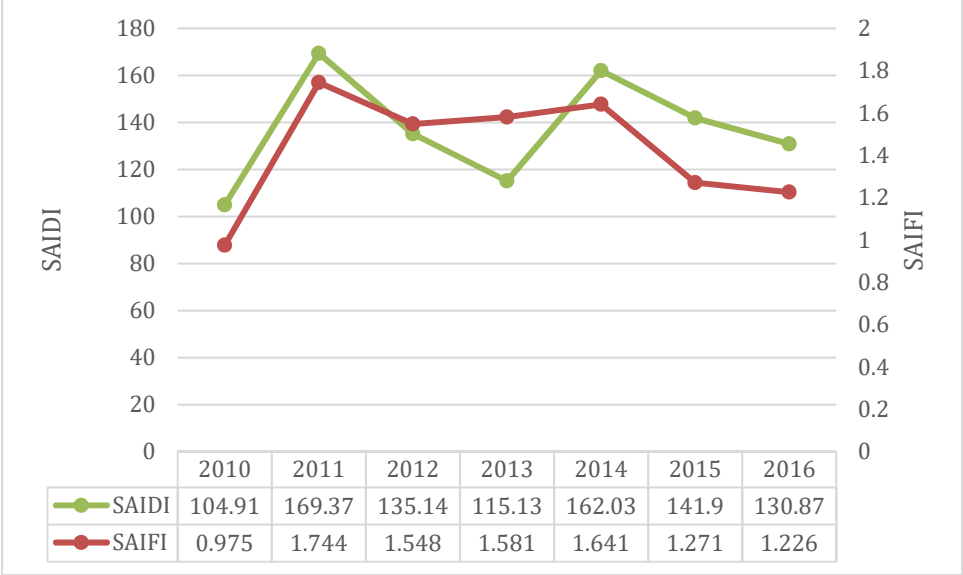
1 Q. IS THE COMPANY PROPOSING RELIABILITY AND CUSTOMER SERVICE
 2 PIMS TO ADDRESS SPECIFIC AREAS OF INADEQUATE PERFORMANCE?

3 A. No, in response to discovery, the Company stated that it was not proposing the
 4 reliability or customer service PIMs to address any specific problems or
 5 customer concerns.¹⁸

7 Q. HOW WOULD YOU CHARACTERIZE THE COMPANY’S RELIABILITY
 8 PERFORMANCE?

9 A. The Company’s reliability performance over the past seven years has been
 10 mixed, but has improved since 2014, as shown in the figure below.¹⁹

11 *Figure 3. SAIDI and SAIFI (IEEE Std. 1366 Method). Preliminary data for 2016*



12

¹⁸ CA-IR-406.

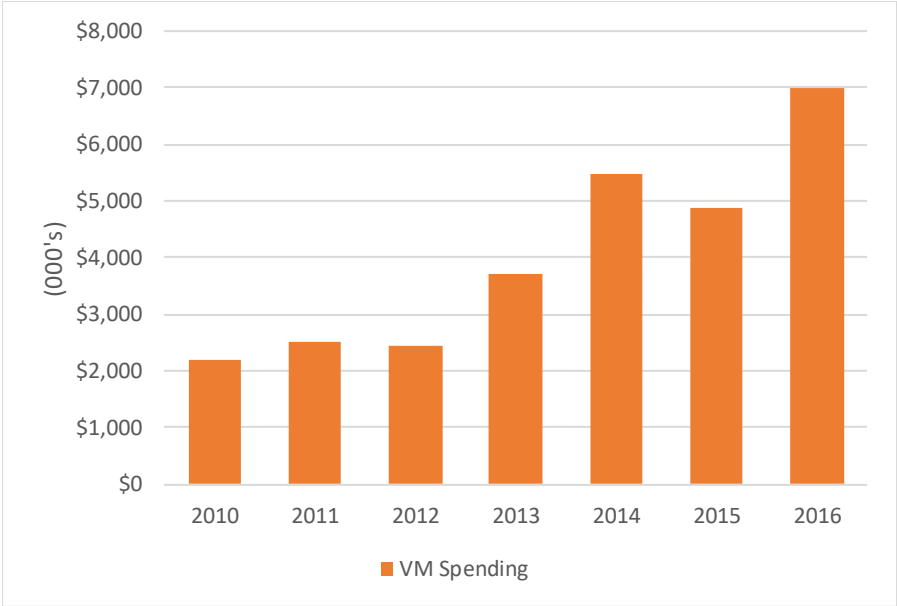
¹⁹ CA-IR-410, Attachment 3.

1 Q. WHAT HAS CAUSED THE IMPROVEMENTS IN RELIABILITY?

2 A. It appears that vegetation control may be part of the reason that reliability has
3 improved. Vegetation, in the form of trees and branches, is responsible for a
4 large proportion of outages on HELCO's system. Since 2010, tree-related
5 outages have been ranked number one in causes of outage durations, being
6 responsible for between 33 to 40 percent of customer outage hours.²⁰

7 In recent years, the Company has increased its vegetation management
8 spending. This is shown in the figure below, together with tree- and branch-
9 related outage duration hours. Distribution vegetation management spending
10 for the Company has increased from \$2.2 million in 2010 to \$7.0 million in 2016.

11 *Figure 4 HELCO Historical Vegetation Management Spending 2010-2016*



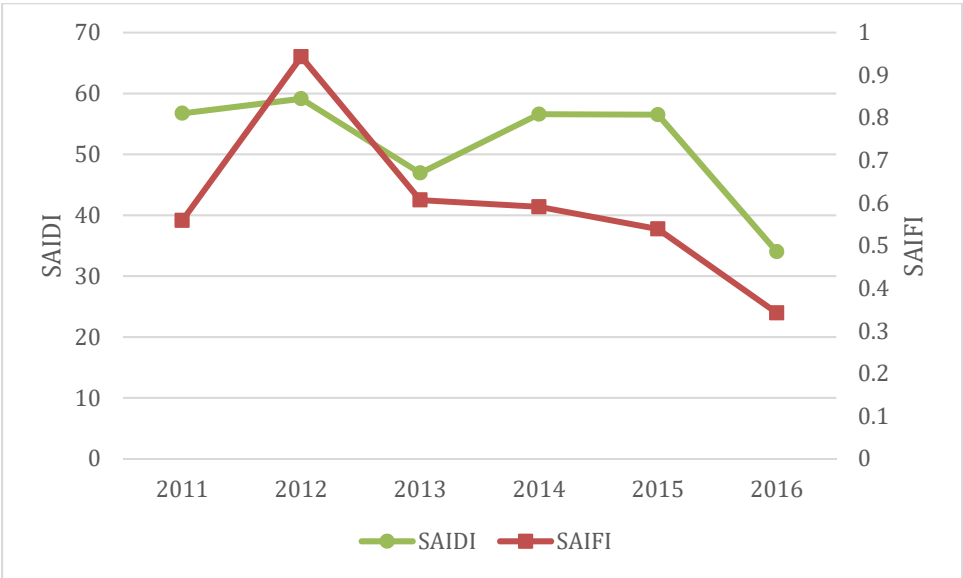
12

²⁰ CA-IR-303, Attachment 1.

1 The large increase in distribution-related vegetation management spending
2 began in 2013, and by 2016 was more than 3 times 2010 levels. Although
3 reliability did not immediately improve, preliminary data from 2016 suggests that
4 the increased vegetation management spending is starting to take effect.
5 In particular, tree- and branch-related outages have declined dramatically in
6 2016 relative to previous years, as shown in the figure below.²¹

7
8

Figure 5. HELCO Normalized Tree and Branch Related SAIDI and SAIFI (2011-2016)



9

²¹ It is difficult to precisely determine the extent to which increased vegetation management spending affects reliability. In response to CA-IR-416, the Company indicated that it has not analyzed the impact that increased vegetation management spending would have on reliability. In addition, the Company claims that it does not know of a reliable methodology to quantify reliability improvements.

1 I understand that the Company, in this rate case, has requested vegetation
2 management spending increases to address albizia control.²² While I do not
3 comment on the prudence or reasonableness of the requested amount, there
4 does appear to be a linkage between appropriate vegetation management
5 spending and reliability performance.

6

7 Q. WHAT DO THESE TRENDS SUGGEST REGARDING THE PROPOSED PIMS
8 FOR RELIABILITY?

9 The data suggest that the Company is placing greater emphasis on vegetation
10 management and is investing significantly more resources in reducing
11 tree-related outages. As a result, tree-related outages are declining, which
12 impacts overall reliability for the Company. While improvements in reliability
13 benefit customers, the costs of such improvements are also passed on to
14 customers. Thus, it is necessary to balance the benefits of improved reliability
15 with the additional costs to ensure that the costs do not outweigh the benefits.²³
16 At this time, it does not appear that additional incentives for reliability (which will
17 also be recovered from customers) are warranted. Thus, the proposal to

²² These spending levels appear to be consistent with the proposed approach outlined in the 2012 consultant's report provided in HELCO-813.

²³ It is also reasonable to expect that there are diminishing returns to continued reliability investments. While initial investments may have large impacts on reliability, the marginal benefits are likely to decline with each additional investment. The theoretically optimum investment level would be where the marginal benefits of an additional increment of reliability are equal to the marginal cost.

1 prioritize the deployment of a PIM for this operating characteristic appears
2 unnecessary.

3

4 Q. HAS THE COMPANY EVALUATED THE BENEFITS OF REDUCED OUTAGES
5 TO CUSTOMERS?

6 A. No, but it is clear from the survey results discussed above that reliability is
7 ██████████ to customers than high customer bills.

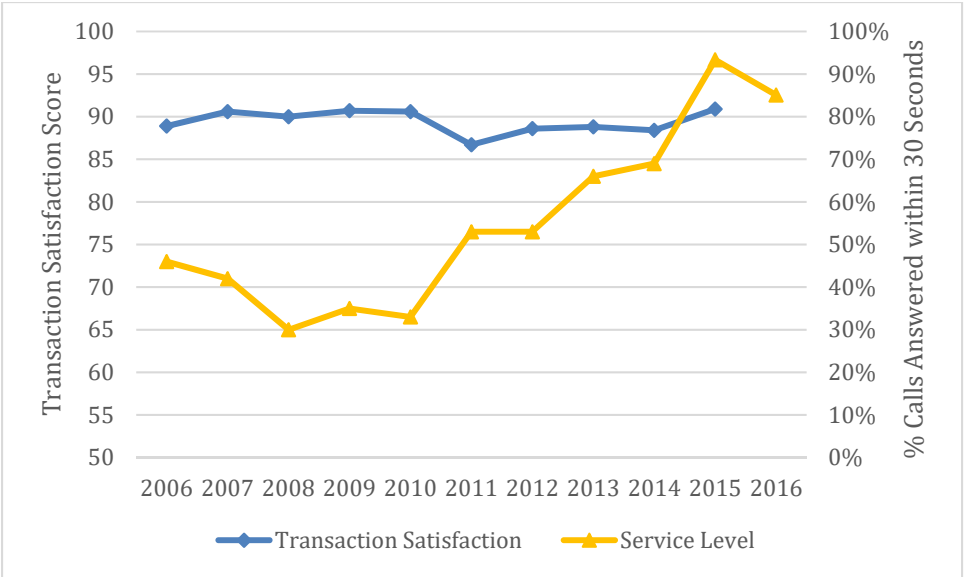
8

9 Q. PLEASE DESCRIBE THE COMPANY'S SERVICE LEVEL AND
10 TRANSACTION SATISFACTION PERFORMANCE.

11 A. Service levels (calls answered within 30 seconds) have significantly improved
12 in recent years, increasing from 33% in 2010 to 94% in 2015. Customer
13 satisfaction (as measured through transaction surveys) has also improved
14 recently, although the scores have generally remained in a narrow range
15 between 88 and 91.

1

Figure 6. Customer Transaction Satisfaction and Call Center Service Level



2

3

4 Q. WHAT FACTORS HAVE CONTRIBUTED TO THE IMPROVEMENT IN
5 SERVICE LEVELS?

6 A. Several factors have affected call center service levels over time.
7 Witness Epenesa testifies that the improvements can be largely attributed to an
8 increase of Customer Service Representatives within the Customer Care
9 Center, and the implementation of an Interactive Voice Response system in
10 late 2014, which reduced the number of calls that are handled by agents.²⁴

11 In addition, the Company attributes the reductions in time required to
12 answer calls in 2015 and 2016 to the reorganization that took place in
13 January 2015, which enabled management to “focus on each functional area

²⁴ T-9, page 7, and response to CA-IR-56.

1 provided the opportunity to find efficiencies, review and implement best
2 practices and to improve service.”²⁵ As a result of the reorganization, some
3 functions previously handled by call center agents were transferred to Revenue
4 Management and/or Field Service personnel, and customer service department
5 staffing was reduced.²⁶ Further, the HECO Companies began implementation
6 of a “virtual call center,” which enables representatives to answer calls
7 regardless of the location or utility in which the call originated.²⁷ This has also
8 allowed the Company to eliminate the services of an outside vendor for some
9 types of calls, which has consequently increased call volume and reduced
10 service levels from 2015.

11
12 Q. WHAT DO THESE TRENDS SUGGEST REGARDING THE PROPOSED PIMS
13 FOR SERVICE LEVELS AND TRANSACTION SATISFACTION?

14 A. These trends lend support to conclusion that the Company’s efforts to create a
15 process to allow additional financial incentives for the proposed metrics do not
16 appear to be necessary at this time. I acknowledge the increased efficiencies
17 that have enabled the Company to significantly improve service levels and
18 maintain transaction satisfaction while simultaneously reducing outside
19 contracts and staffing levels. However, additional financial incentives for these

²⁵ CA-IR-56, page 2.

²⁶ CA-IR-56, CA-IR-59.

²⁷ CA-IR-411.

1 operating metrics are neither necessary nor responsive to the Commission's
2 directive to establish PIMs for cost containment and clean energy transition.
3 Further, it is my understanding that the Consumer Advocate supports the clean
4 energy transition but that it should not be at any cost. Thus, consistent with the
5 earlier discussion, service quality metrics and PIMs should be coupled with cost
6 containment incentives, to ensure that service quality does not suffer when a
7 company seeks to reduce costs. Further, clean energy transition PIMs should
8 also contain a cost containment component or be coupled with other
9 cost-containment to ensure that the transition does not come with an exorbitant
10 price tag.

11
12 Q. PLEASE DESCRIBE THE COMPANY'S PERFORMANCE IN TERMS OF DER
13 CUSTOMER COMMUNICATION.

14 A. Very little data are currently available regarding communication with DER
15 customers. In response to CA-IR-418, the Company stated that data prior to
16 January 2017 "are not readily available." However, the Company did provide
17 data regarding whether or not customers were notified within 10 business days
18 regarding their application completeness (and identifying any missing
19 information). Of the 101 applications received between January and
20 March 2017, only two did not meet the target of notification within 10 days of
21 application receipt.

1 In addition, the Company notes that for customer inquiries, the Company
2 typically is able to “acknowledge receipt of a customer inquiry, and often provide
3 a response, within three business days of receipt.”²⁸

4

5 Q. IS PERFORMANCE IN THE AREA OF DER CUSTOMER COMMUNICATION
6 EXPECTED TO CHANGE?

7 A. There are several factors which will likely lead to improvements in
8 communication with DER customers. Most importantly, the Company is
9 planning to implement a customer interconnection portal software application
10 (the “IIP Project”). Phase I of the project is under development and scheduled
11 to be deployed in the “mid to third quarter 2017 timeframe.”²⁹ The Company
12 states that Phase I implementation of the portal will impact four of the five DER
13 interconnection metrics, and Phase II will impact all of the DER interconnection
14 metrics.³⁰ The Company states that it expects “to do even better on
15 performance targets” with the implementation of the portal.

16 Another factor impacting Company performance is the number of DER
17 customers submitting applications. Now that the Customer Grid Supply cap has
18 been reached, it is likely that the number of customers interconnecting will fall.

28 CA-IR-418.

29 CA-IR-420

30 CA-IR-420

1 A reduction in customer applications should help the Company meet the
2 proposed DER targets more easily.

3

4 Q. WHAT DO THESE TRENDS SUGGEST REGARDING THE PROPOSED PIM
5 FOR DER COMMUNICATION?

6 A. While increasing communication with DER customers is a worthwhile goal, the
7 Company appears to be well on its way to achieving that goal. In particular, the
8 IIP Project is expected to automate much of the process, which should have
9 very beneficial impacts on communication with DER customers, but would also
10 significantly increase the likelihood that the Company would earn a financial
11 reward.

12 These improvements in DER communication that are underway do not
13 come without a cost to customers. As evidenced in the Company's revenue
14 requirements, the Company will recover approximately \$170,000 from
15 customers for these investments.³¹ Implementing a PIM for customer
16 communication would likely result in customers paying even more for this
17 investment.

³¹ CA-IR-404.

1 **VII. CONCERNS WITH PIM TARGETS.**

2 Q. DO YOU HAVE ANY CONCERNS WITH HOW THE TARGETS WERE SET?

3 A. Yes. For several of the proposed PIMs, I am concerned that the Company has
4 already made the investments needed to meet the targets, and is now seeking
5 to recover those investments through revenue requirements while also earning
6 a reward for such investments. This is contrary to the intent of PIMs.

7 I am also concerned that the proposed PIM targets are static, and would
8 not be adjusted until the next rate case. Thus, the Company would be likely to
9 receive rewards from investments that are already largely incorporated into
10 revenue requirements, while the improved performance would not be reflected
11 in PIM targets for several more years.

12

13 Q. PLEASE EXPLAIN WHY THIS IS CONTRARY TO THE INTENT OF PIMS

14 A. The intent of PIMs is to ensure that performance does not worsen due to the
15 strengthening of cost containment incentives. Financial rewards may be
16 justified where the Company *improves* performance while also being subject to
17 strong cost-containment incentives. For example, under a PBR plan, a utility
18 would be expected to improve performance while also being subject to revenue
19 caps. These revenue caps ensure that performance improvements do not
20 impose additional costs on customers – at least not until the next rate case when
21 any prudent costs above the cap would be put into the base revenue
22 requirement.

1 In contrast, HELCO has already undertaken the investments necessary
2 to allow it to achieve the proposed PIM targets, and the Company is seeking to
3 incorporate these costs into its revenue requirements in this rate case. Thus,
4 the Company does not have to seek any additional cost efficiencies to cover the
5 cost of meeting the targets, and the targets do not require the Company to
6 improve its performance over current levels. As stated by the Company's own
7 consultant in Docket No. 2013-0141, incentive regulation (including targeted
8 PIMs) should "only provide increased returns if performance is better than a fair
9 and reasonable estimate of what the performance would have been under a
10 traditional approach."³²

11 For these reasons, the proposed PIM targets appear unreasonable and
12 inconsistent with the fundamental purpose of PIMs.

13
14 Q. IS IT TRUE THAT PIM TARGETS ARE OFTEN SET BASED ON HISTORICAL
15 PERFORMANCE?

16 A. Yes, it is often the case that historical performance is used to set PIM targets.
17 However, historical performance does not always represent a reasonable basis
18 for PIM targets.

³² Brattle Report, Exhibit D, HECO Initial SOP – Sch. B, Docket No. 2013-0141, page 16. Note that page 23 of the report states that the design of service quality incentives should follow the principles for incentive-based regulation plans as well.

1 Q. WHEN DOES HISTORICAL PERFORMANCE NOT OFFER A REASONABLE
2 BASIS FOR PIM TARGETS?

3 A. It is generally not reasonable to rely only on historical performance when there
4 has been a fundamental change in the key factors influencing utility
5 performance. For example, in the case of the DER performance incentive
6 mechanism, HELCO argues that it is dependent upon the net metering cap
7 remaining in place. If the cap were to be removed, it would fundamentally alter
8 the ability of HELCO to meet the PIM target. However, this logic cuts both ways.
9 If HELCO has undertaken significant investments that change its ability to meet
10 targets, these should be taken into consideration when setting PIM targets. For
11 example, implementing an automated interconnection portal software
12 application or significantly increasing and recovering vegetation management
13 costs alters the Company's ability to meet various PIM targets

14
15 Q. WHAT ALTERNATIVES EXIST FOR SETTING PIM TARGETS?

16 A. As discussed in *Utility Performance Incentive Mechanisms: A Handbook for*
17 *Regulators*, there are at least three other methods for setting PIM targets.
18 These methods are (1) peer utility performance, (2) frontier analysis for
19 determining technical efficiency, and (3) utility-specific studies. Given Hawaii's
20 uniqueness and the specific PIMs proposed, it might be most reasonable to use
21 utility-specific studies (perhaps in combination with historical performance) to
22 determine the Company's proposed PIM targets.

1 Q. PLEASE DESCRIBE WHAT INVESTMENTS IN RELIABILITY THE COMPANY
2 HAS ALREADY MADE, AND HOW THESE MIGHT BE EXPECTED TO
3 IMPACT PERFORMANCE.

4 A. As described above, the Company has increased vegetation management
5 spending from \$2.2 million in 2010 to \$7.0 million in 2016. Based on a 2012
6 report commissioned by the Company, an increase in annual vegetation
7 management spending of this magnitude would be expected to reduce outages
8 significantly.³³ Specifically, the study suggests an annual vegetation
9 management budget of \$5 to \$7.8 million and consultant-recommended
10 priorities would result in a reduction in customer interruptions of
11 18,935 incidences per year. This is equivalent to a reduction in the tree-related
12 SAIFI of 25 to 42 percent (relative to 2011-2015 performance years).³⁴

13

14 Q. HAVE YOU QUANTIFIED HOW IMPROVED RELIABILITY WOULD AFFECT
15 THE COMPANY'S ABILITY TO MEET THE PERFORMANCE TARGETS?

16 A. It is difficult to determine exactly how the increased vegetation management
17 spending will translate into future reliability improvements. In response to
18 CA-IR-416, the Company indicated that it has not analyzed the impact of
19 increased vegetation management spending would have on reliability.

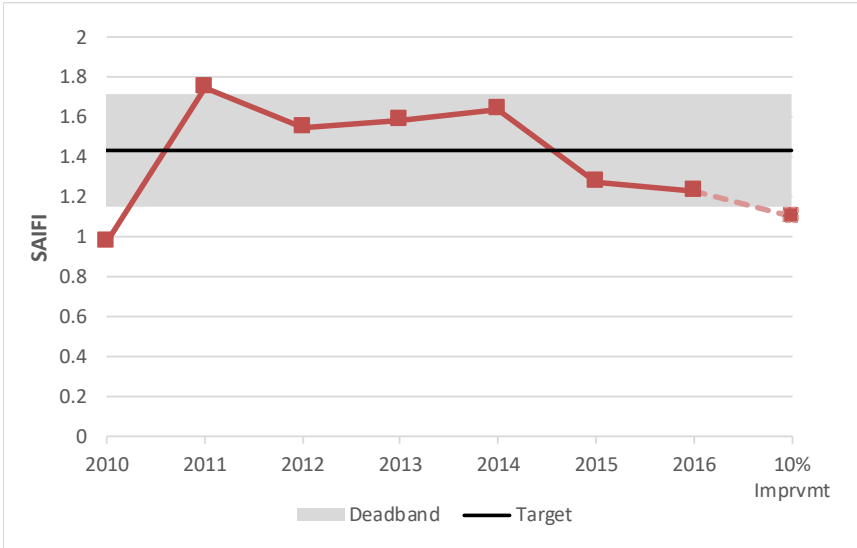
³³ Response to CA-IR-302.

³⁴ Percentage vary year-to-year based on reported customers interrupted. The 25 percent reduction is based on 2012 customers interrupted of 76,913. The 42 percent is from 2011 and 2015 that reported 45,142 and 45,086 tree-related customers interrupted.

1 In addition, the Company claims that it does not know of a reliable methodology
2 to quantify reliability improvements.³⁵

3 However, it is possible to determine the financial impacts if the
4 Company's performance were to improve. Currently, the Company's
5 performance is better than the targets, but within the deadband. If the
6 Company's performance were to continue to improve by 10% over its 2016
7 performance,³⁶ then the Company would far outperform (be lower than) the
8 reliability targets, and outside the deadband. For SAIFI, the Company would
9 then earn a reward. This is shown in the figures below.

10 *Figure 7. Proposed SAIFI PIM and 10% Performance Improvement*



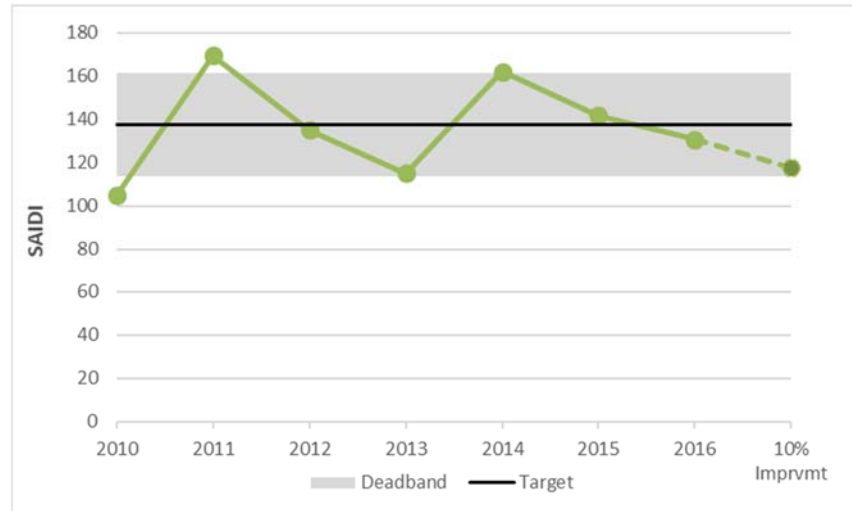
11

³⁵ CA-IR-416.

³⁶ It is not unreasonable to expect that the Company's performance will improve by 10%, as SAIDI improved by 12% in 2015 and 8% in 2016, while SAIFI improved by 23% in 2015 and 4% in 2016.

1

Figure 8. Proposed SAIDI PIM and 10% Performance Improvement



2

3

4 Q. WHAT IS YOUR CONCLUSION REGARDING THE RELIABILITY PIM
5 TARGETS?

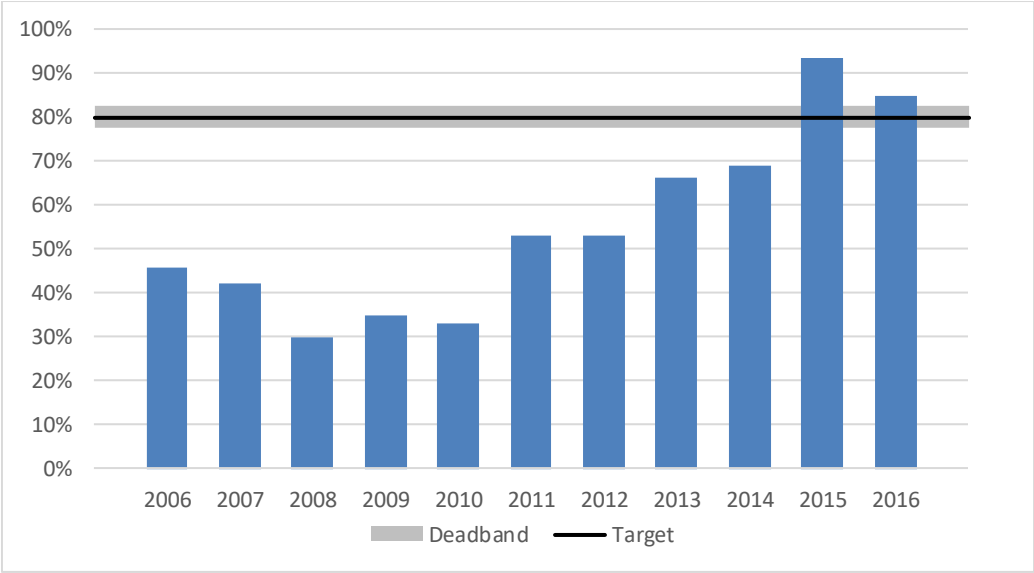
6 A. The Company's current and proposed spending on vegetation management, if
7 enacted appropriately and prudently, should help improve reliability independent
8 of the proposed reliability performance incentives. In fact, the Company's 2016
9 tree and branch related outage duration has decreased by 40 percent from
10 2015 to 2016.

11 If the proposed PIMs for reliability are adopted, it will likely result in the
12 Company frequently earning rewards for investments that have already been
13 undertaken and that are being recovered through rates. While improved
14 reliability is not necessarily a bad outcome for HELCO ratepayers, the improved
15 reliability should not result in burdensome rates and bills.

1 Q. DO YOU HAVE ANY CONCERNS WITH OTHER PIM TARGETS?

2 A. Yes, I have similar concerns to those described above for reliability, particularly
3 for call center service levels and DER customer communication. As shown in
4 Figure 9, the Company has made significant investments in its call center (such
5 as implementing an Interactive Voice Response system in 2014) that have
6 enabled it to achieve reductions in call center answer time. Thus, a historical
7 average encompassing more than two years does not provide a good
8 benchmark for future performance, and would allow the Company to earn
9 financial rewards for performance levels that are well below what it is capable
10 of achieving with current technology and operating budgets.

11 *Figure 9. Service Level PIM*



12

13

1 **VIII. CONTEMPORANEOUS RATEMAKING MECHANISM.**

2 Q. PLEASE SUMMARIZE YOUR FINDINGS REGARDING THE COMPANY'S
3 PROPOSED CONTEMPORANEOUS RATEMAKING MECHANISM.

4 A. I appreciate the Company's effort to elicit comments regarding their proposed
5 contemporaneous rate ("CR") proposal. At a high level, I agree with the
6 Company's concerns about the need to address issues of renewable resource
7 procurement in the context of Hawaii's renewable energy targets. However, I
8 am concerned that the Company's vision of the CR process, if enacted as
9 proposed, would reduce or eliminate the General Order 7 ("GO7") process and
10 the competitive bidding framework ("CBF") process. This could be problematic
11 for customers, as the proposed CR process does not appear to contain all of
12 the customer protections included in the current processes.

13 Because the CR process would represent a significant change in how
14 resources are procured and could leave customers vulnerable, I recommend
15 that the Commission move the CR proposal to a separate proceeding to
16 strategize mechanisms for the Company to integrate additional renewables onto
17 its system in a manner that protects ratepayers.

18

19 Q. PLEASE SUMMARIZE THE COMPANY'S MOTIVATION FOR ITS PROPOSED
20 CONTEMPORANEOUS RATEMAKING PROCESS.

21 A. At a high level, the Company would like to introduce a mechanism that it claims
22 will incentivize and accelerate the introduction of new renewables in a manner

1 that reduces regulatory uncertainty.³⁷ The Company claims that the goal of the
2 CR proposal would be to serve as an adjunct to supply side requests for
3 proposals (“RFP”) approved by the Commission.³⁸ Ostensibly, the Company
4 claims that the goals of the CR proposal to address the Commission’s concerns
5 “that Companies lack incentives to aggressively pursue long-term renewable
6 energy contracts with independent power producers.”³⁹ In addition, the
7 Company claims: “if the objective is to incentivize and accelerate, rather than
8 simply satisfy, achievement of a state’s objective, removal of regulatory
9 uncertainty and implementation of regulatory structures that allow the utility and
10 its customers to share benefits can result not only in accelerated achievement
11 of the objective, but also in outperformance of the objective.”⁴⁰

12
13 Q. PLEASE SUMMARIZE THE COMPANY’S PROPOSED
14 CONTEMPORANEOUS RATEMAKING PROPOSAL.

15 A. The Company’s CR proposal would require the utility to “submit a good-faith
16 benchmark option in every RFP” unless an exception is granted, and would
17 provide the Company with financial incentives if the Company’s proposal is
18 selected.

³⁷ HELCO T-26, 10:6-11.

³⁸ HELCO T-26, 14:12-13.

³⁹ HELCO T-25 13:7-10.

⁴⁰ HELCO T-25 24:5-10.

1 Q. WHAT FINANCIAL INCENTIVES DOES THE COMPANY PROPOSE?

2 A. If the Company's benchmark option is selected, the Company proposes the
3 following financial incentives:

4 1. Differential authorized rates of return on common equity, which would be
5 determined by the Commission based on the investment. The Company
6 provides the example of Iowa where the utility can earn an ROE roughly
7 100 basis points higher than the remainder of rate base.⁴¹

8 2. Retention of 50% of any savings between the actual completed cost and
9 the benchmark budget.⁴²

10 3. Accelerated rate treatment if the benchmark option is completed on time
11 and on budget.⁴³

12

13 Q. PLEASE DESCRIBE HOW THE CR PROCESS WOULD OPERATE.

14 A. As described in Witness Gale's testimony, the process would unfold as
15 follows:⁴⁴

16 • 130 days prior to the issuance of an RFP, the Company would be
17 required to file an application for a CR order and a proposed benchmark
18 option (description and location, construction time, and budget) with

41 HELCO 2604, page 11.

42 HELCO 2604, page 9.

43 HELCO 2604, page 7.

44 HELCO 2604, pages 14-16.

- 1 supporting testimony regarding (A) the reasonableness of the targeted
2 budget and schedule, (B) the ratemaking depreciation life proposed by
3 the utility, and (C) the Company's requested ROE for the benchmark
4 option.
- 5 • The Commission would have 10 days to determine and issue an order
6 regarding the completeness of the filing. The Company would have
7 10 days to address any deficiencies in the filing.
 - 8 • 30 days after the Commission's finding of filing completeness, the
9 Consumer Advocate and other intervenors would file testimony.
10 The utility would file rebuttal 20 days thereafter, followed by hearings
11 10 days later. After 5 days of hearings, the parties would submit briefs
12 and the Commission would have approximately 40 days to issue an order
13 on the ratemaking principles plus the calculated incremental revenue
14 requirement.⁴⁵
 - 15 • The Commission and intervenors then have 120 days to review,
16 intervene, and adjudicate the proposed benchmark option. The hearing
17 process would be 80 days of the 120 day process.
 - 18 • The Company would have 10 days to accept the Commission's
19 ratemaking decision if the Utility chooses the benchmark option or if it is
20 unwilling to accept the Commission's ratemaking decision.

⁴⁵ HELCO 2604, page 16.

- 1 • If the Company's benchmark option is chosen, then the Company would
2 have the ability to file to place incremental rates in service should the
3 Company complete the project either ahead of schedule or within budget.
4 The Company would also be allowed to share the any positive annualized
5 revenue requirements between the actual and targeted completed cost
6 with ratepayers on a 50/50 split. The Commission would have 10 days
7 to approve the revised rates, at which point the new rates would become
8 effective.

9

10 Q. ARE THERE PROCESSES CURRENTLY IN PLACE THAT ADDRESS THE
11 PROCUREMENT OF NEW RESOURCES IN HAWAII?

12 A. Yes, Hawaii currently has two resource procurement processes available to the
13 Commission. The two procurement processes are the GO7 process and the
14 competitive bidding framework. I do not go into details of either the GO7 or the
15 CBF processes, since challenges and opportunities to address the two
16 processes and the proposed CR mechanism would be better served in its own
17 docket.

1 Q. PLEASE SUMMARIZE THE ROLE OF THE GO7 PROCESS.

2 A. As part of the Rule 2.3.g.1, the Company files a five-year capital improvement
3 expenditure plan every year by January 1st.⁴⁶ As part of the capital improvement
4 plan report, Rule 2.3.g.2 enables the Commission to review the need for,
5 alternatives to, and costs/benefits of major capital expenditures projects.⁴⁷
6 The Company notes that the Commission generally has made determinations
7 of the prudence of the size and type of resource of projects in GO7
8 proceedings.⁴⁸

9

10 Q. WOULD THE PROPOSED CR PROCESS IMPACT THE CURRENT GO7
11 PROCESS?

12 A. Potentially, yes. The Company has indicated that one possible outcome of the
13 CR process would be to circumvent the need for the GO7 process.⁴⁹
14 Specifically, the Company highlights that there may be administrative
15 efficiencies by waiving the filing and approval under GO7.⁵⁰ In addition, the
16 Company also notes that its proposed CR mechanism should be allowed to

⁴⁶ Department of Regulatory Agencies State of Hawaii. General Order No. 7. Available at <https://puc.hawaii.gov/wp-content/uploads/2013/04/General-Order-7.pdf>

⁴⁷ CA-IR-427.

⁴⁸ CA-IR-427.

⁴⁹ CA-IR-422.

⁵⁰ Ibid.

1 include the issue of prudence if the Commission has not made a determination
2 in another proceeding (Power Supply Improvement Plan, Integrated Resource
3 Plan, or Request for Proposal), rather than defer the issue of prudence in a later
4 rate case.⁵¹ I do note that the Company is willing to extend the proposed
5 120 day process, if the issue of prudence is determined.⁵²

6
7 Q. PLEASE SUMMARIZE THE ROLE OF THE COMPETITIVE BIDDING
8 FRAMEWORK PROCESS.

9 A. It is my understanding that the 2006 Competitive Bidding Framework was to
10 enshrine competitive bidding into the IRP process through a four-part process.⁵³

11 The Company's summary of the four parts is presented below.⁵⁴

- 12 a. The electric utility conducts an IRP process,
13 culminating in an IRP that identifies a preferred
14 resource plan (including capacity, energy, timing,
15 technologies, and other preferred attributes).
16 b. The Commission approves, modifies, or rejects the
17 IRP, including any requests for waiver, under the IRP
18 Framework and this Framework.
19 c. The electric utility conducts a competitive bidding
20 process, consistent with the IRP; such process shall
21 include the advance filing of a draft RFP with the
22 Commission, which shall be consistent with the IRP.
23 d. The electric utility selects a winner from the bidders,
24 unless there are no bidders worth choosing.

51 CA-IR-422.

52 HELCO T-26 17:9-14.

53 CA-IR-427.

54 CA-IR-427

1 The Company also notes that the CBF contains provisions that ensure the
2 fairness of the process:

3 The Commission's Competitive Bidding Framework contains
4 extensive provisions to ensure the fairness of the process
5 when the utility proposes a utility-owned project, or accepts
6 bids from affiliates. Many of the provisions were adopted from
7 rules in other jurisdictions. Among other provisions, the
8 Competitive Bidding Framework provides that: "The utility
9 shall submit to the Commission for review and approval
10 (subject to modification if necessary), a Code of Conduct
11 described in Part IV.H.9.c . . . prior to the commencement of
12 any competitive bid process under this Framework."
13 CBF Part III.A⁵⁵

14
15 Under the Competitive Bidding Framework, a utility is required
16 to submit its utility owned option to the Commission one day
17 in advance of receipt of other bids, and provide substantially
18 the same information in its proposal as other bidders.
19 CBF Part IV.H.9.b.⁵⁶
20

21 Q. HOW DOES THE COMPANY'S PROPOSAL DIFFER FROM THE GENERAL
22 ORDER 7 PROCESS AND THE COMPETITIVE BIDDING FRAMEWORK
23 PROCESS?

24 A. The Company's proposal appears to be based on elements of both the GO7
25 and CBF processes. For example, the process would involve the issuance of
26 an RFP (as is done in the CBF process); and would request that the Commission
27 approve the prudence of the project type and budget (as is done in the GO7

55 CA-IR-428.

56 CA-IR-428.

1 process). However, the CR process implements some important changes to the
2 existing processes:

- 3 1. The CR process would operate on an abbreviated timeline of only
4 120 days.⁵⁷
- 5 2. The CR process does not require separation of the utility employees who
6 are responsible for developing the RFP and those who are responsible
7 for developing the benchmark option.⁵⁸
- 8 3. The CR process does not appear to include a role for an independent
9 observer, unlike the CBF.
- 10 4. The CR process would potentially provide financial rewards to the
11 Company.

12
13 Q. DO YOU HAVE CONCERNS REGARDING THE PROPOSED SCHEDULE
14 FROM A PROCEDURAL PERSPECTIVE?

15 A. Yes. I am concerned that the limited window and narrow scope of the
16 procedural schedule will impact the Consumer Advocate's ability to ensure that
17 the proposed benchmark option represents the lowest cost renewable option
18 under consideration. The proposal notes that intervenors would only have

⁵⁷ I acknowledge that, pursuant to GO7 rules, if the Commission does not render a decision and order within 90 days, the project can be included in rate base without the Commission's determination required by GO7.

⁵⁸ HELCO-2604, page 13.

1 30 days to file prepared testimony. This timeline leaves very little time to draft,
2 issue, and review discovery during this process.

3

4 Q. IF THE TESTIMONY IS LIMITED IN SCOPE, SHOULD THAT BE SUFFICIENT
5 TO ADDRESS INTERVENORS' CONCERNS?

6 A. Without knowing the details or specifics of the RFP or the benchmark option, I
7 do not think that the Commission or intervenors should be constrained by an
8 artificially imposed schedule. There is a real possibility that a constrained
9 schedule would limit the ability for the Commission and intervenors to explore
10 the issues that may arise from a review of the application.

11

12 Q. ARE YOU CONCERNED THAT THERE WILL NOT BE COMPLETE
13 SEPARATION BETWEEN TEAMS THAT ISSUE THE RFP AND THE
14 BENCHMARK DEVELOPMENT TEAM?

15 A. The Company has indicated that, given its staff size, it will be unavoidable to
16 keep the RFP development and the benchmark teams separate. Specifically,
17 Witness Gale advocates that limited communications between teams should be
18 permitted.⁵⁹

19 I am concerned that this aspect of the CR mechanism will discourage
20 Independent Power Producers ("IPPs") from participating in RFPs if it is known

⁵⁹ HELCO 2604, page 3. However, Witness Gale does acknowledge that the utility bids should be made public.

1 that the utility proposal, which establishes the benchmark, incorporates
2 communication between utility personnel who are responsible for the RFP and
3 utility personnel responsible for the utility option.
4

5 Q. ARE YOU CONCERNED ABOUT THE FINANCIAL INCENTIVES THAT THE
6 COMPANY IS PROPOSING?

7 A. I am concerned that the Company is proposing symmetric performance
8 incentive mechanisms elsewhere, but for the CR proposal, the Company only
9 seeks to identify project incentives with no mentioning of symmetrical
10 penalties.⁶⁰ The Company has indicated that if its project is delayed or is over
11 budget, rates would only be delayed until such time that the Commission
12 determines if the delay or increase was reasonable.⁶¹ The proposed language
13 allows for the Commission to determine the appropriate amount of revenue
14 requirement associated with the benchmark option given the failure to meet
15 schedule and/or budget, but does not explicitly state the Company would bear
16 any cost overruns or schedule delays.⁶² The proposed language would enable
17 a sympathetic Commission to approve future cost overruns and schedule delays
18 if inclined.

⁶⁰ HELCO 2604, page 17.

⁶¹ HELCO T-25 25:4-9.

⁶² HELCO 2604, page 18.

1 Q. ARE THESE PROCEDURAL QUESTIONS INSURMOUNTABLE?

2 A. No, the procedural questions that I raise are not insurmountable. They do,
3 however, point to the need for a separate process outside the instant rate case
4 to consider the CR proposal in the context of other mechanisms already in place
5 to encourage the accelerated development of renewables in Hawaii in a manner
6 that minimizes costs for ratepayers.

7

8 Q. PLEASE COMMENT ON THE COMPANY'S CONCERN THAT THE CR
9 PROCESS WOULD ENABLE IT TO PROCURE RENEWABLE PROJECTS IN
10 ADVANCE OF THE EXPIRATION OF FEDERAL INCENTIVES.

11 A. The Company notes that the timing of the proposed CR process should not
12 result in delays that could result in missing out on federal tax benefit deadlines.⁶³
13 In addition, the Company identified other examples to justify an expedited
14 process that included the availability of equipment, the price of equipment, and
15 the availability or price of contractors.⁶⁴ While the availability of federal and state
16 tax credits may not be a precisely known, there is some certainty with the current
17 expiration schedule of the federal production tax credit ("PTC") for wind facilities
18 and the investment tax credit ("ITC") for solar facilities. The Company has

⁶³ HELCO T-26, 14:14-16.

⁶⁴ CA-IR-428.

1 provided its understanding of the expiration schedules for both the PTC and
2 ITC.⁶⁵ Key dates for the ITC and PTC expiration are summarized below:

3 *Figure 10 Summary of ITC and PTC Expiration Dates*

Production Tax Credit		Investment Tax Credit	
Year	PTC Phase-out	Year	ITC Phase Out
2017	80% of 2016 PTC	2020	26% tax credit
2018	60% of 2016 PTC	2021	22% tax credit
2019	40% of 2016 PTC	2022	10% tax credit
2020	0% of 2016 PTC		

Notes
<http://programs.dsireusa.org/system/program/detail/734>
<https://energy.gov/savings/business-energy-investment-tax-credit-itc>

4
5 If appropriate, the Company can plan for procurements based on the ITC and
6 PTC expiration schedule with these known expiration schedules. While there
7 are clear benefits to the federal tax credit, the cost trends in both solar and wind
8 are declining such that there is a reason why the federal tax credits are expiring.

9
10 Q. DOES THE COMPANY HAVE A RESOURCE RETIREMENT SCHEDULE?

11 A. Yes. The Company has provided a proposed retirement schedule.
12 The Company contends that the dates associated with the retirement schedules
13 are not fixed, nor is the need for new generation necessarily tied to the tentative
14 schedule.⁶⁶ While I do not disagree with the Company’s concern that the exact

⁶⁵ CA-IR-428.

⁶⁶ CA-IR-436.

1 timing of retirements and new capacity resources is not defined, the information
2 about the approximate timing would be useful to determine an approximate
3 resource addition schedule known to all parties in advance. This may provide
4 some level of certainty to stakeholders as to when additional resources may be
5 required to replace the retirement of existing resources.

6
7 Q. IS THERE AN OPPORTUNITY TO IMPROVE THE GO7 AND THE
8 COMPETITIVE BIDDING FRAMEWORK PROCESS?

9 A. Yes, there is an opportunity to improve both processes in order to help
10 accelerate the integration of new renewables on the Hawaiian Islands.
11 I acknowledge that the Company has expressed concerns regarding the current
12 competitive bidding framework, particularly with the slowness of the process.⁶⁷
13 I believe that a separate docket that addresses the opportunities and challenges
14 of the CR proposal, the GO7 process, and Competitive Bidding Framework may
15 be more comprehensive and more constructive than determining the proposed
16 Contemporaneous Ratemaking in isolation from a review of the other processes
17 currently in place.

⁶⁷ CA-IR-444.

1 **IV. OVERALL CONCLUSIONS AND RECOMMENDATIONS.**

2 Q. WHAT ARE YOUR OVERALL CONCLUSIONS?

3 A. My conclusions are as follows:

- 4 • The Company's proposed conventional PIMs do little to address the key
5 objectives of reducing costs and accelerating the clean energy
6 transformation.
- 7 • Without additional cost containment incentives, the proposed PIMs risk
8 encouraging over-investment in the utility's system. Such PIMs would be
9 more appropriate for implementation in a full PBR framework.
10 Alternatively, PIMs could be introduced that reward the Company for
11 reducing costs (such as through non-wires alternatives).
- 12 • The proposed PIMs address areas of performance that are already the
13 focus of current utility investments and improvements. Additional
14 incentives in these areas do not appear necessary at this time.
- 15 • The PIM targets, as currently defined, will likely result in financial rewards
16 for investments that the Company has already undertaken and that
17 customers are already paying for.
- 18 • The utility's proposed CR process would reduce customer protections
19 and potentially dissuade IPPs from participating in the IRP process. Any
20 changes to the resource procurement and approval process should first
21 consider modifications to the existing processes. This should be done in

1 a separate proceeding to provide adequate input opportunity from
2 stakeholders.

3

4 Q. WHAT ARE YOUR RECOMMENDATIONS?

5 A. I offer the following recommendations:

6 1) The Commission should reject the Company's PIMs as proposed.

7 2) The Commission should open a separate proceeding to investigate
8 movement to a comprehensive PBR framework.

9 3) If PIMs are to be considered in the current regulatory framework, the
10 Commission should require that the PIMs contain explicit cost
11 containment incentives (such as basing reward levels on net benefits to
12 customers).

13 4) The Commission should open a separate proceeding to investigate
14 modifications to the resource procurement and approval process.

15

16 Q. DOES THIS CONCLUDE YOUR TESTIMONY?

17 A. Yes, it does.

Melissa Whited, Senior Associate

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 2 | Cambridge, MA 02139 | 617-453-7024
mwhited@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Cambridge MA. Senior Associate, 2015 – present, Associate, 2012 – 2015

Conduct research, author reports, and assist in preparation of expert testimony. Consult on issues related to distributed energy resources, rate design, cost-benefit analysis, integrated resource planning, utility regulation, water use and conservation, and market power.

University of Wisconsin - Madison, Department of Agricultural and Applied Economics, Madison, WI. Teaching Assistant – Environmental Economics, 2011 – 2012

Developed teaching materials and led discussions on cost-benefit analysis, carbon taxes and cap-and-trade programs, management of renewable and non-renewable resources, and other topics.

Public Service Commission of Wisconsin, Water Division, Madison, WI. Program and Policy Analyst - Intern, Summer 2009

Researched water conservation programs nationwide to develop a proposal for Wisconsin's state conservation program. Developed spreadsheet model to calculate avoided costs of water conservation in terms of energy savings and avoided emissions.

Synapse Energy Economics, Cambridge, MA. Communications Manager, 2005 – 2008

Developed technical proposals for state and federal agencies, environmental and public interest groups, and businesses. Edited reports on energy efficiency, integrated resource planning, greenhouse gas regulations, renewable resources, and other topics.

EDUCATION

University of Wisconsin, Madison, WI

Master of Arts in Agricultural and Applied Economics, 2012.

Certificate in Energy Analysis and Policy.

National Science Foundation Fellow.

University of Wisconsin, Madison, WI

Master of Science in Environment and Resources, 2010.

Certificate in Humans and the Global Environment (CHANGE).

Nelson Distinguished Fellowship.

Southwestern University, Georgetown, TX

Bachelor of Arts in International Studies, 2003.

Magna cum laude.

ADDITIONAL SKILLS

- Econometric Modeling – Linear and nonlinear modeling including time-series, panel data, logit, probit, and discrete choice regression analysis
- Nonmarket Valuation Methods for Environmental Goods – Hedonic valuation, travel cost method, and contingent valuation
- Cost-Benefit Analysis
- Input-Output Modeling for Regional Economic Analysis

FELLOWSHIPS AND AWARDS

- Winner, M. Jarvin Emerson Student Paper Competition, Journal of Regional Analysis and Policy, 2010
- Fellowship, National Science Foundation Integrative Graduate Education and Research Traineeship (IGERT), University of Wisconsin – Madison, 2009
- Nelson Distinguished Fellowship, University of Wisconsin – Madison, 2008

PUBLICATIONS

Whited, M., A. Horowitz, T. Vitolo, W. Ong, T. Woolf. 2017. *Distributed Solar in the District of Columbia: Policy Options, Potential, Value of Solar, and Cost-Shifting*. Synapse Energy Economics for the Office of the People's Counsel for the District of Columbia.

Whited, M., E. Malone, T. Vitolo. 2016. *Rate Impacts on Customers of Maryland's Electric Cooperatives: Impacts on SMECO and Choptank Customers*. Synapse Energy Economics for Maryland Public Service Commission.

Woolf, T., M. Whited, P. Knight, T. Vitolo, K. Takahashi. 2016. *Show Me the Numbers: A Framework for Balanced Distributed Solar Policies*. Synapse Energy Economics for Consumers Union.

Whited, M., T. Woolf, J. Daniel. 2016. *Caught in a Fix: The Problem with Fixed Charges for Electricity*. Synapse Energy Economics for Consumers Union.

Lowry, M. N., T. Woolf, M. Whited, M. Makos. 2016. *Performance-Based Regulation in a High Distributed Energy Resources Future*. Pacific Economics Group Research and Synapse Energy Economics for Lawrence Berkley National Laboratory.

Woolf, T., M. Whited, A. Napoleon. 2015-2016. *Comments and Reply Comments in the New York Public Service Commission Case 14-M-0101: Reforming the Energy Vision*. Comments related to Staff's (a) a benefit-costs analysis framework white paper, (b) ratemaking and utility business models white paper, and (c) Distributed System Implementation Plan guide. Prepared by Synapse Energy Economics on behalf of Natural Resources Defense Council and Pace Energy and Climate Center.

Luckow, P., B. Fagan, S. Fields, M. Whited. 2015. *Technical and Institutional Barriers to the Expansion of Wind and Solar Energy*. Synapse Energy Economics for Citizens' Climate Lobby.

- Wilson, R., M. Whited, S. Jackson, B. Biewald, E. A. Stanton. 2015. *Best Practices in Planning for Clean Power Plan Compliance*. Synapse Energy Economics for the National Association of State Utility Consumer Advocates.
- Whited, M., T. Woolf, A. Napoleon. 2015. *Utility Performance Incentive Mechanisms: A Handbook for Regulators*. Synapse Energy Economics for the Western Interstate Energy Board.
- Stanton, E. A., S. Jackson, B. Biewald, M. Whited. 2014. *Final Report: Implications of EPA's Proposed "Clean Power Plan."* Synapse Energy Economics for the National Association of State Utility Consumer Advocates.
- Peterson, P., S. Fields, M. Whited. 2014. *Balancing Market Opportunities in the West: How participation in an expanded balancing market could save customers hundreds of millions of dollars*. Synapse Energy Economics for the Western Grid Group.
- Woolf, T., M. Whited, E. Malone, T. Vitolo, R. Hornby. 2014. *Benefit-Cost Analysis for Distributed Energy Resources: A Framework for Accounting for All Relevant Costs and Benefits*. Synapse Energy Economics for the Advanced Energy Economy Institute.
- Peterson, P., M. Whited, S. Fields. 2014. *Synapse Comments on FAST Proposals in ERCOT*. Synapse Energy Economics for Sierra Club.
- Hornby, R., N. Brockway, M. Whited, S. Fields. 2014. *Time-Varying Rates in the District of Columbia*. Synapse Energy Economics for the Office of the People's Counsel for the District of Columbia, submitted to Public Service Commission of the District of Columbia in Formal Case No. 1114.
- Peterson, P., M. Whited, S. Fields. 2014. *Demonstrating Resource Adequacy in ERCOT: Revisiting the ERCOT Capacity, Demand and Reserves Forecasts*. Synapse Energy Economics for Sierra Club – Lone Star Chapter.
- Stanton, E. A., M. Whited, F. Ackerman. 2014. *Estimating the Cost of Saved Energy in Utility Efficiency Programs*. Synapse Energy Economics for the U.S Environmental Protection Agency.
- Ackerman, F., M. Whited, P. Knight. 2014. "Would banning atrazine benefit farmers?" *International Journal of Occupational and Environmental Health* 20 (1): 61–70.
- Ackerman, F., M. Whited, P. Knight. 2013. *Atrazine: Consider the Alternatives*. Synapse Energy Economics for Natural Resources Defense Council (NRDC).
- Whited, M., F. Ackerman, S. Jackson. 2013. *Water Constraints on Energy Production: Altering our Current Collision Course*. Synapse Energy Economics for Civil Society Institute.
- Whited, M. 2013. *Water Constraints on Energy Production: Altering our Current Collision Course – Policy Brief*. Synapse Energy Economics for Civil Society Institute.

Hurley, D., P. Peterson, M. Whited. 2013. *Demand Response as a Power System Resource: Program Designs, Performance, and Lessons Learned in the United States*. Synapse Energy Economics for Regulatory Assistance Project.

Whited, M., D. White, S. Jackson, P. Knight, E.A. Stanton. 2013. *Declining Markets for Montana Coal*. Synapse Energy Economics for Northern Plains Resource Council.

Woolf, T., M. Whited, T. Vitolo, K. Takahashi, D. White. 2012. *Indian Point Energy Center Replacement Analysis: A Plan for Replacing the Nuclear Plant with Clean, Sustainable, Energy Resources*. Synapse Energy Economics for National Resources Defense Council and Riverkeeper.

Whited, M., K. Charipar, G. Brown. *Demand Response Potential in Wisconsin*. Nelson Institute for Environmental Studies, Energy Analysis & Policy Capstone for the Wisconsin Public Service Commission.

Whited, M. 2010. "Economic Impacts of Irrigation Water Transfers in Uvalde County, Texas." *Journal of Regional Analysis and Policy* 40 (2): 160–170.

Grabow, M., M. Hahn and M. Whited. 2010. *Valuing Bicycling's Economic and Health Impacts in Wisconsin*. Nelson Institute for Environmental Studies, Center for Sustainability and the Global Environment (SAGE) for State Representative Spencer Black.

Whited, M., D. Bernhardt, R. Deitchman, C. Fuchsteiner, M. Kirby, M. Krueger, S. Locke, M. Mcmillen, H. Moussavi, T. Robinson, E. Schmitz, Z. Schuster, R. Smail, E. Stone, S. Van Egeren, H. Yoshida, Z. Zopp. 2009. *Implementing the Great Lakes Compact: Wisconsin Conservation and Efficiency Measures Report*. Department of Urban and Regional Planning, University of Wisconsin-Madison, Extension Report 2009-01.

Whited, M. 2009. *2009 Wisconsin Water Fact Sheet*. Public Service Commission of Wisconsin.

Whited, M. 2003. *Gender, Water, and Trade*. International Gender and Trade Network Washington, DC.

TESTIMONY

Massachusetts Department of Public Utilities (Docket No. 17-05): Joint direct testimony with T. Woolf regarding Eversource's proposed performance-based regulation mechanism, Monthly Minimum Reliability Contribution charge, and other rate design proposals. On behalf of Energy Freedom Coalition of America, LLC. April 28, 2017.

Massachusetts Department of Public Utilities (Docket No. 15-155): Joint direct and rebuttal testimony with T. Woolf regarding National Grid's rate design proposal. On behalf of Energy Freedom Coalition of America, LLC. March 18, 2016 and April 28, 2016.

Federal Energy Regulatory Commission (Docket No. EC13-93-000): Affidavit regarding potential market power resulting from the acquisition of Ameren generation by Dynegy. On behalf of Sierra Club. August 16, 2013.

Wisconsin Senate Committee on Clean Energy: Joint testimony with M. Grabow regarding the importance of clean transportation to Wisconsin's public health and economy. February 2010.

TESTIMONY ASSISTANCE

Colorado Public Utilities Commission (Proceeding No. 16AL-0048E): Answer testimony of Tim Woolf regarding Public Service Company of Colorado's rate design proposal. On behalf of Energy Outreach Colorado. June 6, 2016.

Nevada Public Utilities Commission (Docket Nos. 15-07041 and 15-07042): Direct testimony on NV Energy's application for approval of a cost of service study and net metering tariffs. On behalf of The Alliance for Solar Choice. October 27, 2015.

Missouri Public Service Commission (Case No. ER-2014-0370): Direct and surrebuttal testimony on the topic of Kansas City Power and Light's rate design proposal. On behalf of Sierra Club. April 16, 2015 and June 5, 2015.

Wisconsin Public Service Commission (Docket No. 05-UR-107): Direct and surrebuttal testimony of Rick Hornby regarding Wisconsin Electric Power Company rate case. On behalf of The Alliance for Solar Choice. August 28, 2014 and September 22, 2014.

Maine Public Utilities Commission (Docket No. 2013-00519): Direct testimony of Richard Hornby and Martin R. Cohen on GridSolar's smart grid coordinator petition. On behalf of the Maine Office of the Public Advocate. August 28, 2014.

Maine Public Utilities Commission (Docket No. 2013-00168): Direct and surrebuttal testimony of Tim Woolf regarding Central Maine Power's request for an alternative rate plan. December 12, 2013 and March 21, 2014.

Massachusetts Department of Public Utilities (Docket No. 14-04): Comments of Massachusetts Department of Energy Resources on investigation into time varying rates. On behalf of the Massachusetts Department of Energy Resources. March 10, 2014.

State of Nevada, Public Utilities Commission of Nevada (Docket No. 13-07021): Direct testimony of Frank Ackerman regarding the proposed merger of NV Energy, Inc. and MidAmerican Energy Holdings Company. On behalf of the Sierra Club. October 24, 2013.

PRESENTATIONS

Whited, M. 2016. "Energy Policy for the Future: Trends and Overview." Presentation to the National Conference of State Legislators' Capitol Forum, Washington, DC, December 8.

Whited, M. 2016. "Ratemaking for the Future: Trends and Considerations." Presentation to the Midwest Governors' Association, St. Paul, MN, July 14.

- Whited, M. 2016. "Performance Based Regulation." Presentation to the NARUC Rate Design Subcommittee. September 12.
- Whited, M. 2016. "Demand Charges: Impacts and Alternatives (A Skeptic's View)." EUCL 2nd Annual Residential Demand Charges Summit, Phoenix, AZ, June 7.
- Whited, M. 2016. "Performance Incentive Mechanisms." Presentation to the National Governors Association, Wisconsin Workshop, Madison WI, March 29.
- Whited, M., T. Woolf. 2016. "Caught in a Fix: The Problem with Fixed Charges for Electricity." Webinar presentation sponsored by Consumers Union, February.
- Whited, M. 2015. "Performance Incentive Mechanisms." Presentation to the National Governors Association, Learning Lab on New Utility Business Models & the Electricity Market Structures of the Future, Boston, MA, July 28.
- Whited, M. 2015. "Rate Design: Options for Addressing NEM Impacts." Presentation to the Utah Net Energy Metering Workgroup, Workshop 4, Salt Lake City, UT, July 8.
- Whited, M. 2015. "Performance Incentive Mechanisms." Presentation to the e21 Initiative, St. Paul, MN, May 29.
- Whited, M., F. Ackerman. 2013. "Water Constraints on Energy Production: Altering our Current Collision Course." Webinar presentation sponsored by Civil Society Institute, September 12.
- Whited, M., G. Brown, K. Charipar. 2011. "Electricity Demand Response Programs and Potential in Wisconsin." Presentation to the Wisconsin Public Service Commission, April.
- Whited, M. 2010. "Economic Impact of Irrigation Water Transfers in Uvalde County, Texas." Presentation at the Mid-Continent Regional Science Association's 41st Annual Conference/IMPLAN National User's 8th Biennial Conference in St. Louis, MO, June
- Whited, M., M. Grabow, M. Hahn. 2009. "Valuing Bicycling's Economic and Health Impacts in Wisconsin." Presentation before the Governor's Coordinating Council on Bicycling, December.
- Whited, M., D. Sheard. 2009. "Water Conservation Initiatives in Wisconsin." Presentation before the Waukesha County Water Conservation Coalition Municipal Water Conservation Subgroup, July.

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing **DIVISION OF CONSUMER ADVOCACY'S DIRECT TESTIMONIES, EXHIBITS, AND WORKPAPERS** was duly served upon the following parties, by electronic transmission, personal service, hand delivery, and/or U.S. mail, postage prepaid, and properly addressed pursuant to HAR § 6-61-21(d).

DEAN K. MATSUURA
MANAGER, REGULATORY RATE PROCEEDINGS
HAWAIIAN ELECTRIC COMPANY, INC.
P.O. Box 2750
Honolulu, Hawaii 96840

1 copy
by hand delivery

JOSEPH K. KAMELAMELA
CORPORATION COUNSEL
ANGELIC M. HO
DEPUTY CORPORATION COUNSEL
COUNTY OF HAWAII
101 Aupuni Street, Suite 325
Hilo, Hawaii 96720

1 copy
by U.S. mail

Attorneys for County of Hawaii

DATED: Honolulu, Hawaii, April 28, 2017.