Utah Clean Energy
1014 2nd Ave.
Salt Lake City, UT 84103
801-363-4046

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of Rocky Mountain Power's Application to Establish Export Credits for Customer Generated Electricity	**DOCKET NO. 17-035-61**

REBUTTAL TESTIMONY OF KATE BOWMAN

ON BEHALF OF

UTAH CLEAN ENERGY

DATED this 10th day of April, 2018

Kate Bowman

Utah Clean Energy

TABLE OF CONTENTS

I. INTRODUCTION

Q. Please state your name and business address.

A. My name is Kate Bowman. My business address is 1014 2nd Ave, Salt Lake City, Utah 84103.

Q. Are you the same Kate Bowman that provided direct testimony in this docket?

A. Yes.

Q. On whose behalf are you testifying?

A. I am testifying on behalf of Utah Clean Energy (UCE).

Q. What is the purpose of your rebuttal testimony?

A. The purpose of my rebuttal testimony is to respond to direct testimony filed by Robert Davis and Charles Peterson for the Division of Public Utilities ("the Division), Rick Gilliam for Vote Solar, and Chris Worley for Vivint. Specifically, I respond to the Division's assessment that Rocky Mountain Power's ("the Company's") proposed load research study is sufficient to gather the data necessary for Phase II of this proceeding and to the recommendations for improving the load research study proposed by Vote Solar and Vivint.

At a higher level, the overarching purpose of my testimony related to the load research study is to ensure that Utah Clean Energy and other parties participating in Phase II of this docket will have the data necessary to carry out the stated goal of the second phase of the docket: to have parties "present evidence addressing reasonably quantifiable costs or benefits or other considerations they deem relevant," as outlined by the Settlement Stipulation filed August 28, 2017 in Docket

No. 14-035-114[1]. A robust load research study is key to the collection of data necessary to analyze costs, benefits, and other considerations related to solar energy exports. I recognize there is a tradeoff between a more comprehensive study and managing costs, and I have endeavored to recommend changes that would result in gathering the most useful information while keeping costs associated with the study reasonable. As such, the intent of our recommendations is to ensure that the load research study collects as much relevant data as is reasonably possible.

II. PURPOSE AND SIGNIFICANCE OF THE LOAD RESEARCH STUDY:

Q. Do parties agree regarding the adequacy of the load research study proposal for the purposes of acquiring data necessary for Phase II of this proceeding?

A. No. In my direct testimony, I proposed changes to the design of the load research study that are necessary for Utah Clean Energy to acquire data for analysis in Phase II of the proceeding. In direct testimony Vote Solar finds that "RMP's proposed load research plan does not acquire the data necessary for the analyses Vote Solar intends to perform"[2] and makes a number of recommendations for improving the load research study. Vivint has concluded that "the Company's methodology is likely to result in biased estimates that lack sufficient statistical power"[3] and provides recommendations for its improvement. The Division notes several concerns with the Company's proposed load research study, but "believes RMP has designed the LRS to capture the necessary data needed to support the scope of work for this phase of the docket and provide the necessary data for Phase Two" and "recommends the Commission approve RMP's

[1] Docket No. 14-035-114, In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program, Settlement Stipulation, filed August 28, 2017 and approved September 29 2017, paragraph 30.

[2] Direct testimony Mr. Gilliam lines 56 – 57.

[3] Direct testimony Mr. Worley lines 60 – 61.

LRS for Phase One of this docket."[4] The Division also makes the following recommendation: "To protect and mitigate against some of the potential problems with the study as proposed, the Division recommends that the Company report to the Division and any interested parties on a monthly basis the on-going results of the study so that any emerging anomalies can be evaluated and (if necessary) a course of action decided upon as early in the process as possible."[5]

Q. Do you agree with the Division's conclusion that the Company's proposed Load Research Study is adequate to gather the data necessary for Phase II?

A**.** No, I do not.

Q. Why not?

A. The load research study, as proposed, will not collect data that has been requested by Utah Clean Energy and other parties for use in Phase II of this docket. Utah Clean Energy, Vote Solar, and Vivint have made requests for this data and recommendations for its collection through informal comments to the Company and through direct testimony in this docket.

Q. Why is it important to gather data requested by parties other than the Company during this phase of the docket?

A. As noted in my direct testimony, each party participating in Phase II of this proceeding (including the Company) will bear the burden of proof for presenting "evidence addressing reasonably quantifiable costs or benefits or other considerations they deem relevant."[6] The load research

[4] Direct Testimony Mr. Davis lines 39 – 42.
[5] Direct testimony Mr. Peterson lines 142 – 146.

[6] Docket No. 14-035-114, In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program, Settlement Stipulation, filed August 28, 2017 and approved September 29 2017, paragraph 30.

study is a key opportunity for all parties to collect the data they intend to use for analysis in Phase II.

Q. Does the Division address the need for all parties to have access to data necessary for analysis in Phase II?

A. No, the Division does not comment on this aspect of the Settlement Stipulation except to note that "each party has its own interests in this matter."[7] The Division recommends that the Commission approve the Company's load research study proposal. While the Company's proposed load research study may be sufficient to provide the Division with the data it needs to complete the analysis it plans to conduct in Phase II, the study will not provide data that Utah Clean Energy requires for analysis in Phase II. This data can be reasonably gathered as part of the load research study by following the recommendations outlined in my testimony.

Q. What is Utah Clean Energy's interest in this matter?

A. Utah Clean Energy's interest in this proceeding is to efficiently and cost-effectively gather data to evaluate reasonably quantifiable costs, benefits or other considerations associated with solar exports in Phase II.

Q. Is the load research study the only avenue by which this data can be gathered?

A. No, this study is not the only opportunity to gather data needed for Phase II, nor does it preclude the use of or need for additional data outside of the load research study. However, it is the most

[7] Direct testimony Mr. Davis line 39.

efficient and cost-effective opportunity to gather as much data as possible to allow parties to conduct sound analysis for Phase II of this proceeding.

Q. Do you agree with Vote Solar's position that "RMP should bear the ultimate risk associated with technically insufficient or improper sampling" that results from this study?[8]

A. Yes, while other parties can provide recommendations regarding data needs and acquisition and make requests for data outside of the load research study, the Company is ultimately the only party able to gather certain types of data that relate to customers or the grid and therefore should bear the risk associated with a failure to gather data that is needed for Phase II of this proceeding.

Q. The Division states that "Unlike the Net Metering case, Docket No. 14-035-114, where interested parties were concerned about how private generation customers were using the grid, this docket studies how much energy and when customer generation is hitting the grid."[9] How do you respond to this statement?

A. While I agree that the amount and timing of customer generation are critical components to determine a "just and reasonable rate for export credits for customer generated electricity,"[10] from Utah Clean Energy's perspective these two factors do not represent the full extent of analysis necessary for Phase II. These may be the only two factors the Division plans to assess during Phase II of the docket, but the Settlement Stipulation allows *all* parties to present evidence

[8] Direct testimony Mr. Gilliam lines 51 – 53.

[9] Direct testimony Mr. Davis lines 132 – 133.

[10] Docket No. 14-035-114, Settlement Stipulation, paragraph 30.

addressing "reasonably quantifiable costs or benefits or other considerations they deem relevant."[11]

III. IMPORTANCE OF GATHERING COMPLETE SET OF RELEVANT INFORMATION

A. DATA STREAMS TO BE COLLECTED

Q. What have other parties proposed regarding the types of data streams that should be collected from load research study customers?

A. Vote Solar and Vivint assert that it is important to gather three streams of data from the same set of customers: energy imports (also referred to as deliveries or purchases from the utility), solar energy exports, and total rooftop solar system production.[12] Gathering all three data streams from each customer allows parties to accurately determine the total energy usage of *that* customer, including solar generation and energy deliveries. In contrast, the Company has proposed to derive estimates for total household usage based on generation data from one set of customers and delivery and export data from a different set of customers. Through this mathematical derivation, actual information about how each customer uses energy, and how energy usage differs between customers, is lost. The Division acknowledges that actual data about a given customer's total energy usage "may become useful to better understand these customer's interaction with the

[11] Docket No. 14-035-114, Settlement Stipulation, paragraph 30.

[12] Direct testimony Mr. Gilliam lines 220 – 222, Direct testimony Mr. Worley lines 159 – 160.

utility's system[13]" but is satisfied with the Company's proposal to use mathematical derivations to determine total customer usage.

Q. What is your response?

A. As articulated in my direct testimony, collecting energy imports, exports, and rooftop solar generation data from each study participant will allow for a more detailed and nuanced understanding of the relationship between solar and onsite energy usage for individual customers. What's more, as noted by Mr. Gilliam, "there is an opportunity now to capture actual generation data for Schedule 136 customers that is time-correlated to customer deliveries, consumption and exports. Thus, there is no reason to settle for "an understanding" based on estimates when full knowledge is possible."[14] As noted by Vivint, the Company's proposed approach to gather generation data from one set of customers and energy import and export data from a different set of customers is not sufficient to allow parties to evaluate the impact of exported solar energy on the Company's distribution system.[15]

Q. Why is this information relevant to determining a just and reasonable rate for a solar export credit?

A. As illustrated in Vote Solar's testimony, load shapes can vary significantly from customer to customer.[16] As I stated in my direct testimony, the amount of energy exported by a given customer depends directly on both their solar generation and the load shape of their energy usage

[13] Direct testimony Mr. Davis lines 150 – 151.

[14] Direct testimony Mr. Gilliam lines 231 – 238.

[15] Direct testimony Mr. Worley lines 152 – 155.

[16] Direct testimony Mr. Gilliam Figure 1: APS Residential Customer Load Types.

behind-the meter.[17] A detailed understanding of the interaction between onsite usage and generation, including how this pattern differs between customers, will better inform a rate for solar energy exports.

B. ORIENTATION, TILT, AND SHADING

Q. What have other parties proposed regarding the importance of gathering information about the customer's solar installation, including orientation, tilt, and shading?

A. Vote Solar states that "system characteristics including verified system capacity, orientation, tilt, location, and shading are important characteristics of each system that can significantly affect the results and should be captured."[18] Vivint states that the reason stratification based on system capacity is problematic is because it "ignores DG system orientation, tilt, and shading, factors that have a strong impact on system production."[19] Mr. Worley provides an example of why these factors can have an important impact on the value of energy production.[20]

Q. What is your response?

A. This is in alignment with the information that I requested in my direct testimony. I agree that it is important to consider how these factors influence solar energy exports. To my understanding, no party is proposing to stratify the sample based on any of these factors. Rather, it is sufficient to

[17] Direct testimony Ms. Bowman lines 145 – 146.

[18] Direct testimony Mr. Gilliam lines 200 – 203.

[19] Direct testimony Mr. Worley lines 61 – 62.

[20] Direct testimony Mr. Worley Table 1: Total annual output (kWh) by system azimuth and Table 2: Summer peak hour output (kWh) by system azimuth.

collect information about the orientation, tilt, and shading of each system, which can be done relatively simply, as described in my direct testimony.

C. CHARACTERIZATION OF CUSTOMERS' ENERGY USAGE

Q. What do parties propose regarding the need to gather information to characterize a customer's energy usage?

A. Vote Solar proposes to identify each customer's major appliances and other electrical devices in use behind the meter because they can impact the timing and magnitude of net exports.[21] As described in my direct testimony, UCE recommends gathering data about customers' appliances including (but not limited to) the following: air conditioning, evaporative cooling, an electric vehicle, LED lighting, battery storage, and a smart thermostat. There may be other electrical devices worth asking about, including air source and ground source heat pumps. This information can be easily gathered through a questionnaire issued to all participants in the both the solar load research study as well as non-solar participants in the standing load research study. We recommend that the Commission direct the Company to work with interveners to develop a questionnaire that will capture this information.

Q. Why is information about electrical devices in use behind the meter relevant to the export credit proceeding?

A. Certain electrical devices have the potential to have a profound impact on customer load shape, which in turn affects the timing and magnitude of solar exports for that customer. Furthermore,

[21] Direct testimony Mr. Gilliam lines 216 – 218.

customer electrical loads are increasingly controllable: electric car chargers and smart thermostats can be programmed to operate at a certain time of day. Adoption of these types of electrical devices is growing quickly. The amount and timing of solar export credits is directly affected by customer choices made behind the meter. Surveying customers about their electrical device usage will allow parties to present analysis that improves understanding of how customer electrical loads, and therefore solar exports, vary.

Q. What other recommendations does Vote Solar make regarding characterization of customer energy usage?

A. Vote Solar recommends that the load research study gather consumption data for customers from the twelve months prior to their rooftop solar installation.[22]

Q. How do you respond?

A. In my direct testimony, I recommended stratifying load research study participants based on their total energy usage for the twelve months prior to completing a solar installation. I support collecting this information for use by parties participating in Phase II of this docket.

D. LOCATION ON THE DISTRIBUTION SYSTEM:

Q. Have other parties expressed the need to understand the interaction between solar generation and the distribution system and how it may affect the value of solar exports?

A. Yes**,** as described in Mr. Worley's direct testimony, this study is "an opportunity for the Commission to put hard numbers on how RMP's system operates and should inform how, where,

[22] Direct testimony Mr. Gilliam lines 369 – 372.

and when RMP invests in its distribution system in the future."[23] The cost of investments in the distribution system, and the potential for rooftop solar to affect those costs, is relevant to consider in Phase II of this docket. Distributed generation and distributed energy resources will result in changes to customer's appliances and loads that will fundamentally impact utility investments in, and operation of, the grid. Utilities can keep costs low for all customers and avoid costly investments by understanding the effects of distributed generation's growth on the distribution system and responding appropriately. The results of this study can best inform Phase II of this proceeding if they help to answer important questions about the interaction between customer-owned distributed generation, customer energy usage characteristics, the distribution system, and the grid that, as yet, remain unanswered.

Q. How do parties recommend gathering data necessary to understand the interaction between solar exports and distribution capacity and investments?

A. Vivint recommends sampling based on distribution system topology rather than county-level sampling, as proposed by the Company.[24] Utah Clean Energy does not oppose this approach, but recognizes that sampling based on county may be administratively simpler, and I believe sampling based on county is sufficient as long as it is paired with our other recommendations to ensure the sample is adequately representative of the population. Included in these recommendations is a request to gather information about each customer's location on the distribution system, including data about the circuit and substation.[25]

[23] Direct testimony Mr. Worley lines 39 – 41.

[24] Direct testimony Mr. Worley lines 280 – 284.

[25] Direct testimony Ms. Bowman lines 259 – 261.

IV. SAMPLE DESIGN AND STRATIFICATION

A. TRANSITION VERSUS NEM CUSTOMERS

Q. Please summarize feedback from other parties regarding the use of grandfathered net metered customers versus transition customers in the load research study?

A. Vote Solar notes that "grandfathered customers installed their systems under a different set of economic conditions from transition customers"[26] and for this reason "it is important to capture the consumption patterns of transition customers and grandfathered customers separately in order to identify the effect of changes that may result from the different policies and economics reflected in the Stipulation versus the net metering program."[27] Vote Solar recommends installing bi-directional meters on the 36 grandfathered net metering customers who already have production meters, but using transition customers for the new load research study. Vote Solar recommends installing production meters on all new transition customers until there is a sufficient number of customers to design a sample. Mr. Davis of the Division is concerned that "there may be too few transition customers interconnected by January 1, 2019 to ensure an ample record of export and delivery data," and notes that the Company intends to randomly select grandfathered net metering customers for participation in the study if there are not enough transition customers interconnected.[28] Mr. Peterson of the Division expresses several concerns

[26] Direct testimony Mr. Gilliam lines 214 – 216.

[27] Direct testimony Mr. Gilliam lines 328 – 331.

[28] Direct testimony Mr. Davis lines 124 – 129.

with combining grandfathered net metering customers and transition customers in the same sample, specifically that:

- Sample selection for these two groups "is not being conducted at the same time and not in exactly the same way," resulting in anomalies related to the geographic distribution the company has proposed.[29]
- The 36 grandfathered net metering customers selected for participation in the first load research study were selected four years ago and may be "suffering from physical degradation, some degree of technological obsolescence or other systematic differences from the new sample that is to be collected."[30]

Q. What recommendations do you make in response to concerns about capturing data from grandfathered net metered customers versus transition program customers?

A. I agree with Vote Solar and the Division and am concerned about mixing data from grandfathered net metering customers and transition customers in the same sample. Ideally, the sample for the load research study would focus on transition customers. However, I recognize that it will take some time for enough transition customers to install and interconnect their systems in order to develop a representative sample. As such, I recommend the following:

(1) Retrofit the 36 customers from the previous net metering load research study with meters sufficient to collect all three streams of data from each customer. Given that these customers already have production meters, it is an efficient use of resources to also retrofit them with bi-directional meters to gain a complete picture of their energy usage.

[29] Direct testimony Mr. Peterson lines 95 – 104.

[30] Direct testimony Mr. Peterson lines 111 – 115.

(2) Select transition customers to participate in the load research study using simple sampling or, if warranted, stratified sampling based on total customer energy usage. The objective of sample selection should be to develop the best sample possible to represent both residential and commercial transition customers. As described in my direct testimony, residential and commercial customers should be sampled separately. Recognizing that it may take some time for a sufficient number of customers to interconnect through the transition program, the Company may need to continue installing meters on transition customers through the full window of time allotted to begin data collection, until January 1 2019. If there is an insufficient number of transition customers by the end of the year to create a meaningful sample, I recommend hosting a technical workshop to resolve sampling issues and protocol.

B. RESIDENTIAL VS COMMERCIAL CUSTOMERS:

Q. In your direct testimony you recommend separating residential and commercial customers for the purposes of the load research study. How do other parties recommend sampling residential and commercial customers?

A. Vote Solar recommends that the Company sample and study small commercial customers separately from residential customers.[31] Vivint also recommends analyzing residential and commercial customers separately.[32] These are aligned with my recommendations in direct testimony.

[31] Direct testimony Mr. Gilliam lines 526 – 527.

[32] Direct testimony Mr. Worley lines 278 – 279.

C. STRATIFICATION VARIABLE

Q. Please summarize positions of other parties regarding sample stratification.

A. Vote Solar recommends stratifying the sample based total energy load.[33] Vivint recommends against stratifying the sample at all in favor of simple sampling, although if the sample is stratified then Vivint recommends stratification based on historic gross consumption from 2017.[34] Based on my interpretation of this language, Vote Solar, Vivint, and Utah Clean Energy all support stratifying the sample based on total customer energy usage. During Phase II of this docket, parties may wish to evaluate and gain a better understanding of the relationship between solar exports and a variety of factors and system characteristics including, but not limited to, orientation, tilt, shading, location on distribution system, and the presence of electrical appliances that characterize the customer's pattern of energy usage. A sample size that is reasonably representative of the population of solar customers with regards to all these variables is essential for sound analysis.

Q. Do you agree with Vivint's proposal to use simple sampling?

A. Utah Clean Energy is not opposed to simple sampling but recognizes there may be additional costs associated with the larger sample. The most important consideration for sample design is that it results in a sample that is robust enough to collect sufficient data and provide the information necessary for analysis in Phase II. In direct testimony, I recommended stratifying the sample based on total customer energy usage because the interaction between customer load and generation is one of the important variables for analysis in Phase II. The data collected in this

[33] Direct testimony Mr. Gilliam lines 459 – 461.

[34] Direct testimony Mr. Worley lines 266 – 276.

load research study will be used to inform analysis that will then inform rates for future solar customers. The rates that result from this docket will impact customers, their energy choices, and in turn the utility system for years to come. Therefore it is critical to design a study that provides sufficient data for thorough analysis in Phase II.

Q. Vivint proposes sampling based on distribution system instead of by county. How do you respond?

A. I agree that sampling based on distribution system topology would provide a more accurate representation of information that is relevant to this proceeding, namely how rooftop solar interacts with the distribution system. If the load research study does sample based on county-level data, I have addressed the need for data about the distribution system by requesting that the study gather relevant information about each system's location on the distribution system, including substation and circuit level data, and provide this to parties for analysis.

Q. The Division expresses concern that the "associated costs [of the load research study] must remain reasonable while in the pursuit of an adequate study."[35] How do you respond?

A. I agree that the load research study must strike a balance between gathering important information and keeping costs low. To be clear, UCE has not proposed to sample all solar customers and we agree that sample stratification, in concept, is a reasonable way to reduce the sample size necessary to capture a representative picture of solar customers. However, I diverge from the Division and the Company regarding the choice of the variable used to stratify the sample. In my direct testimony I explained why stratification based on system size will not appropriately capture the diversity of solar customers with regards to the variables that parties

[35] Direct testimony Mr. Davis lines 111 – 112.

plan to analyze in Phase II. Mr. Worley provides a good example of how stratification based on the wrong variable can make it difficult or impossible to tease out usable information about variables of interest other than the variable chosen for stratification:

"If a party wanted to estimate the impact of West-facing systems during peak times, the sample would need enough West-facing systems for the estimated impact to demonstrate statistical significance. If the sample is too small, there may not be enough statistical power to test that question."[36]

The Company proposes to include a minimum of 10 systems in each strata, and Strata 2 in fact only includes 10 systems which are intended to represent 9,193 actual solar installations. While the 10 selected systems may be representative with regards to the Company's proposed variable of stratification (system capacity), they are not necessarily representative of the diversity of other system and customer characteristics which parties intend to study for Phase II.

Q. Might there be other ways to control costs on this study, beyond stratification or altering the precision of the study to reduce the sample population?

A. Yes, the Company describes three categories of cost associated with data collection: the cost of materials (estimated to be $523 per customer), the cost of labor (estimated to be $1,612 per customer) and the cost of deploying a truck ($170.90 per customer). The cost of installation, in particular, seems unusually high. Vivint has proposed that there are lower cost hardware-based alternatives to the equipment proposed by the Company, and estimates that these meters would take no longer than four hours to install. [37] Vote Solar cites industry cost estimates for labor that

[36] Direct testimony Mr. Worley lines 192 – 195.
[37] Direct testimony Mr. Worley lines 115 – 145.

316 are a fraction of those quoted by the Company, and recommends that the Company issue a
317 discrete request for proposals to reduce the costs for the installation of meters.[38] I support further
318 exploration of hardware solutions that keep costs low and using a request for proposals to ensure
319 competitive costs for meter installation.

320 Additionally, Vivint recommends software alternatives for gathering data from solar customers.[39]
321 Solar inverter companies have partnered with utilities in other parts of the country to provide
322 utilities with customer data.[40] Given the significant costs associated with materials and labor, I
323 support exploring software solutions to complement data collection through the load research
324 study. Although solar inverter data is not always as accurate as a revenue-grade meter, if software
325 solutions can provide data from a significantly larger population of customers at significantly
326 reduced costs, it is certainly worth working with parties to obtain as much data as possible. As
327 stated in my direct testimony, we support using inverter data as a supplement to the data obtained
328 from the Company-installed production meters. Further, we recommend that the study evaluate
329 and compare data obtained from inverters, when available, with data obtained from Company-
330 installed production meters.

331 **Q. Are there other recommendations you would like to address?**

332 A. Yes, the Division recommends that the Company report to the Division and any interested parties
333 on a monthly basis the on-going results of the study so that any emerging anomalies can be

[38] Direct testimony Mr. Gilliam lines 296 – 297.

[39] Direct testimony Mr. Worley lines 115 – 145.

[40] "Enphase Energy and Hawaiian Electric Collaborate to Improve Stability of the Grid." Feb 3, 2015. <http://newsroom.enphase.com/releasedetail.cfm?releaseid=894344.>

evaluated and (if necessary) a course of action decided upon as early in the process as possible." Utah Clean Energy appreciates and supports this recommendation.

Q. Are there issues and concerns about the load research study proposal remaining among parties participating in this docket?

A. Yes, all parties participating in this docket have expressed some level of concern regarding the proposed load research study. When Utah Clean Energy originally agreed to an expedited schedule with only two rounds of testimony for this docket at the Scheduling Conference held December 11, 2017 it was with the understanding that parties would work together on a load research study design in advance of the Company's formal filing on February 15, 2018. Our intent was to work with all parties involved in this docket to address issues and concerns related to the load research study with the hope that we could resolve many of those issues and concerns through informal meetings and comments in advance of the Company's formal filing. As noted in my direct testimony, Utah Clean Energy and other parties participated in meetings held on January 9, 2018 and February 7, 2018 and provided informal comments to the Company on January 24, 2018. The recommendations made at these meetings and through comments did not result in any meaningful changes to the Company's proposed load research study design.

The load research study is a critical first step to gather data necessary for Phase II of this proceeding, and to make it possible for Utah Clean Energy and other parties to meet the burden of proof established in the Settlement Stipulation. The data gathered through the load research study will be used to inform analysis in Phase II, which will in turn inform a rate design for solar customers. The rates that result from this docket will impact customers, their energy choices, and in turn the utility system long into the future. It is critical that the load research study gather as much data as is reasonably possible to inform sound analysis in Phase II.

Q. Does that conclude your testimony?

A. Yes