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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of Rocky Mountain Power to Establish Export Credits for Customer Generated Electricity	**Docket No. 17-035-61 Phase 2**

REVISED AFFIRMATIVE TESTIMONY OF ALBERT J. LEE, PH.D.

ON BEHALF OF

VOTE SOLAR

May 8, 2020

TABLE OF CONTENTS

List of Tables

List of Figures

I. INTRODUCTION

Q. Please state your name, business address, and title.

A. My name is Albert J. Lee. My business address is 601 New Jersey Avenue NW, Suite 400, Washington, DC 20001. I am the Founding Partner and Economist at Summit Consulting, LLC.

Q. On whose behalf are you testifying?

A. I am submitting this revised testimony on behalf of Vote Solar.

Q. Please summarize your background for the record.

A. I am an economist with a Ph.D. (1999) and M.A. (1996) in economics from the University of California at Los Angeles (UCLA). My research, teaching, and professional practices have focused on statistical sampling and econometric modeling. I have designed and selected statistical samples and performed extrapolations for various federal agencies, including the U.S. Department of Defense, the U.S. Department of Housing and Urban Development, the U.S. Department of Labor, the U.S. Small Business Administration, and the U.S. Department of Transportation.

I have published articles in peer-reviewed and industry journals on mathematics and economics. I have lectured on statistics, advanced quantitative methods, and graduate-level econometrics at UCLA, the George Washington University, and Columbia University, respectively. I am a member of the American Economic Association ("AEA"), the American Statistical Association ("ASA"), and the Econometric Society. Since 2012, I have been an ASA Accredited Professional Statistician. I have served as an econometric expert in several matters. In 2019, I was admitted as an expert in statistics in a case pending before the New York State Supreme Court. My curriculum vitae, included as Exhibit 5-AJL, lists the cases in which I testified or provided written affidavits in the past four years and the publications I authored in the past ten years.

Q. Have you previously testified before the Utah Public Service Commission ("PSC" or "Commission")?

A. I testified before the PSC in Phase 1 of this matter. As described more fully below, the purpose of my previous testimony was to address the testimony submitted by Rocky Mountain Power ("RMP"). I reviewed the statistical methods used to determine the sample design of RMP's proposed Load Research Study ("RMP LRS"), given the desired confidence level and margin of error.

II. BACKGROUND

Q. Please describe your understanding of this docket.

A. The purpose of this docket is to establish just and reasonable compensation for electricity generated by customer generation ("CG") customers. Under a settlement for a prior docket (Docket No. 14-035-114), rate schedules for a "Legacy Period" (Schedule 135) and a "Transition Period" (Schedule 136) were established in 2017.[1, 2] As part of this settlement,

[1] RMP refers to the "Legacy Period" customers as "Grandfathering Period" customers.
[2] Public Service Commission of Utah, *Order Approving Settlement Stipulation*, Docket No. 14-035-114, Sept. 29, 2017, https://pscdocs.utah.gov/electric/14docs/14035114/29703614035114oass9-29-2017.pdf.

the parties agreed to open this current proceeding to determine the just and appropriate compensation mechanism to be used after the "Legacy Period" and "Transition Period" ended.

Q: Will you please describe what you mean by Schedule 135 and Schedule 136?

A. Customers who submitted an application to interconnect a distributed generation ("DG") system by November 15, 2017 are considered the "Legacy Period" customers, also known as the "Schedule 135 Customers" or "NEM Customers" because these customers are on Net Metering Schedule 135 through December 31, 2035. The "Transition Period" customers, customers who submitted an application to interconnect a DG system after November 15, 2017, are on Schedule 136 and are therefore referred to as the "Schedule 136 customers" or "Transition Customers."[3] As of December 31, 2019, there were 38,876 customers with CG, of which, 79.8% follow Schedule 135, and 20.2% follow Schedule 136.[4] There are 31,013 Schedule 135 customers, 7,858 Schedule 136 customers, and 5 customers whose schedule could not be determined.[5] All customers installed their generation systems between 2002 and 2019.

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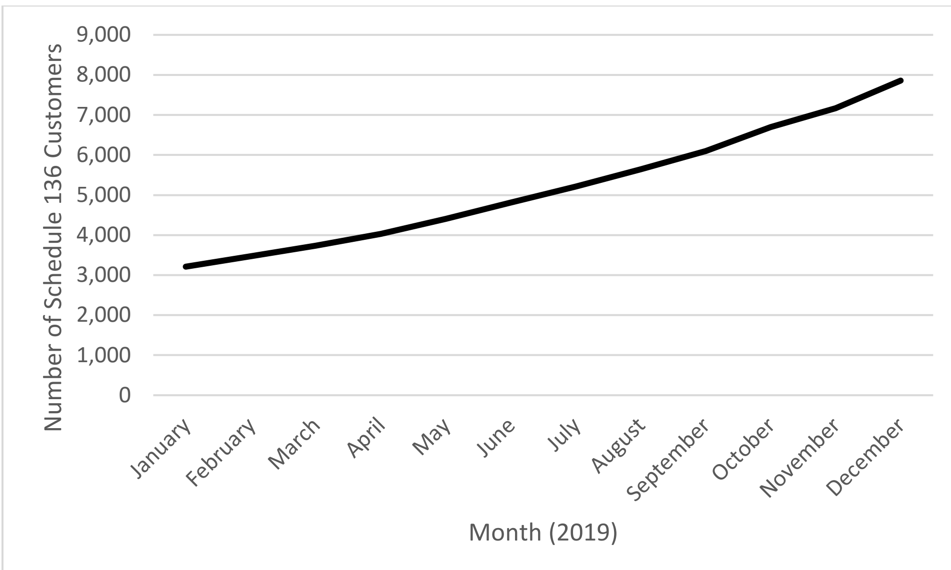
[3] Customers may be grouped in their schedules based on when they installed their system or when they submitted a complete interconnection application. In other words, if a customer submitted their complete application prior to November 15, 2017 but did not install their system by this date, they would be considered a Schedule 135 customer. Dates are based on the Settlement Stipulation. *See* Rocky Mountain Power, *Rocky Mountain Power's Settlement Stipulation*, Docket No. 14-035-114, p. 3, Aug. 28, 2017, https://pscdocs.utah.gov/electric/14docs/14035114/296270RMPSettleStip8-28-2017.pdf.

[4] Dr. Spencer Yang's testimony distinguishes between customer generation ("CG") and distributed generation ("DG"). CG includes technologies other than DG solar, such as fuel cells, but DG accounts for over 99% of CG. I use CG throughout this testimony. *See generally* Vote Solar, *Revised Affirmative Testimony of Spencer Yang.*

[5] One of these customers, a commercial customer, was on rate schedule "08GNSV008M" and four customers, irrigation customers, were on rate schedule "08NMT010NS."

The number of Schedule 136 customers increases as customers submit interconnection applications and install their CG systems. Figure 1 below illustrates the number of Schedule 136 customers for each month of 2019. In January of 2019, there were 3,211 Schedule 136 customers. By December of 2019, there were 7,858 Schedule 136 customers.

Figure 1: Number of Schedule 136 Customers, by Month (2019)[6]



Q. Please describe why you were initially retained in this proceeding.

A. In 2018, RMP, the public utilities company that serves Idaho, Utah, and Wyoming, designed a Load Research Study ("RMP LRS") for Schedules 135 and 136 residential and commercial customers with DG in the state of Utah. In the study, RMP selected a sample

[6] Produced using the Schedule 136 monthly 15-minute interval data received from RMP. *See* Exhibit 2-AJL-REVISED.

of Schedule 135 customers, along with all Schedule 136 customers, and proposed to collect and report data on their import, export, and production.

In response to the RMP LRS, I was retained by counsel for Vote Solar in 2018 to provide an independent expert review of RMP's sample design and proposed implementation for the RMP LRS. In that phase, I submitted written testimony on April 11, 2018, and I testified before the Commission to rebut the calculations and opinions of Mr. Charles Peterson and Mr. Kenneth Elder, Jr. on April 17, 2018.[7]

Q. What were your main opinions in that Phase 1 testimony?

A. I found that the sample design had several flaws. *First*, the production metering sample was not drawn from the population of interest (all customer generators), but instead from a subset (only Schedule 135 customers). Therefore, estimates from the sample could not be used to provide inferences about the full population. *Second*, more than half of the sample was originally drawn using a different sampling design. As a result, standard extrapolation formulas would fail to account for this difference, and no alternatives were provided. *Third*, a number of factors indicated the sample size was too small to achieve the stated precision of +/-10% at 95% confidence. *Finally*, the use of systematic sampling was an unnecessary complication that, at best, added untested assumptions without any proven

[7] *See* Vote Solar, *Rebuttal Testimony of Albert J. Lee,* Docket No. 17-035-61, Apr. 11, 2018, https://pscdocs.utah.gov/electric/17docs/1703561/301245RebutTestLeeVoteSolar4-11-2018.pdf.

benefit. The sample could have been selected using a stratified random sample without systematic sampling because a complete list of the customers was available.

Q. Did the Commission issue an order regarding the RMP LRS?

A. Yes. On May 21, 2018, the Commission issued an Order in Phase 1 of this proceeding addressing the design of the LRS and ordering that the parties proceed to Phase 2.[8]

Q. Please describe your understanding of Phase 2 of this matter.

A. The Commission has indicated that the purpose of Phase 2 of this matter is to determine just and reasonable compensation for CG exports.[9] In support of its proposal in Phase 2 of this matter, Vote Solar requested that I conduct an independent LRS. The data compilation and design of that independent Vote Solar LRS is described below in Sections V and VII, respectively. In addition to this testimony about Vote Solar's LRS, I am scheduled to perform an additional review of the RMP LRS in rebuttal testimony.[10]

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[8] Public Service Commission of Utah, *Phase I Order*, Docket No. 17-035-61, May 21, 2018, https://pscdocs.utah.gov/electric/17docs/1703561/3022941703561pIo5-21-2018.pdf.
[9] *Id.* at p.2.
[10] RMP filed its direct testimony on February 3, 2020 by Joelle R. Steward, and I intend to respond to that in rebuttal according to the schedule established by the Commission. *See* Rocky Mountain Power, *Rocky Mountain Power's Direct Testimonies*, Docket No. 17-035-61, Feb. 3, 2020, https://pscdocs.utah.gov/electric/17docs/1703561/311964RMPDirectTestim2-3-2020.pdf.

III. PURPOSE OF TESTIMONY

Q. What is your assignment in this phase of the case?

A. I have been asked by Vote Solar to assist in collecting data from residential and commercial CG customers in RMP's Utah service territory pursuant to the independent study discussed above. I have also been asked to conduct statistical analyses using the collected data. Specifically, I was asked to:

a) Calculate the state-wide estimates for export and production for CG in the state of Utah;

b) Identify characteristics that appropriately capture the costs and benefits of CG and collect relevant customer data over a representative period;

c) Determine an appropriate correlation between generation, nameplate capacity, and location based on data availability; and

d) Examine and analyze relevant conclusions made by RMP regarding CG in its service territory.

I understand that my analysis is being used by other experts in this matter to determine just and reasonable compensation for CG in RMP's Utah service territory. Specifically, I provided Dr. Michael Milligan, Mr. Curt Volkmann, Dr. Spencer Yang, and Dr. Carolyn Berry my assessment of the total CG production and total CG exports on an hourly basis for all of 2019. I also calculated and provided the annual production factor (total production kWh/installed kW) and export factor (exported kWh/installed kW). The data I provided to the other Vote Solar witnesses is provided in Exhibit 1-AJL-REVISED.[11]

IV. SUMMARY OF OPINIONS

Q. Please provide a brief summary of your opinions.

A. I provide the following opinions:

1) Current weather patterns play vital roles in determining the level of production and export for commercial and residential CG. For example, higher temperature days produce higher rates of solar production. In contrast, increasing cloud coverage reduces the amount of solar energy produced;

2) Peak production and export hours are between 12PM and 3PM daily and increase in Spring and Summer months;

3) Production and exports are lowest early in the morning and late in the evening; and

4) Days on the weekend typically have lower export ratios in comparison to identical times during the work week.

[11] Exhibit 1-AJL-REVISED does not contain any personally identifiable information.

My lack of comments on any components of RMP's affirmative testimony should not be interpreted as acquiescence or agreement with RMP. I reserve the right to express additional opinions, to amend or supplement the opinions in this testimony, or to provide additional rationale for these opinions as additional documents are produced and new facts are introduced during discovery and trial. I also reserve the right to express additional opinions in response to any opinions or testimony offered by other parties to this proceeding.

V. DATA COMPILATION AND SHARING

Q. Please describe the data that were developed for Vote Solar's LRS.

A. As described in the revised testimony of Mr. Sachu Constantine, a mailer was sent to every customer with CG in RMP's Utah service territory. In response to that mailer, customers could opt-in to the Vote Solar LRS in two ways by providing consent via a website hosted by RMP.[12] In total 3,364 customers from the population of 38,876 opted in to the Vote Solar LRS.

Q. What information did you obtain about customers that opted in to the Vote Solar LRS?

A. *First*, RMP provided weekly updates regarding customer opt-ins in the form of supplemental responses to Vote Solar's 4th Set Data Request 4.1, which identifies Vote Solar LRS opt-in customers' addresses. *Second*, RMP provided Vote Solar with individual

[12] Vote Solar, *Revised Affirmative Testimony of Sachu Constantine*, lines 242–91.

.pdf files for each opt-in customer containing the information they provided in the web form for purposes of obtaining each customer's inverter data. This information included the customer name, address, email and phone number, and the customer's solar installer. This process is described more fully in the revised testimony of Vote Solar witness, Mr. Constantine.[13]

Q. Please describe the process for receiving inverter data from the solar companies for Vote Solar's LRS.

A. The process for receiving data is described in more detail in the revised testimony of Mr. Constantine.[14] Depending on the company, we collected data in one of two ways:

1. The solar company provided the data directly; or
2. The solar company provided System IDs and Application Programming Interface ("API") keys, and the data were extracted from the API.

In both instances, data were obtained for the 2019 calendar year for each system. Depending on the inverter platform, solar production data was provided in either five- or fifteen-minute intervals.[15] In total, by the time of filing on March 3, 2020, we obtained data for 1,240 of the 3,364 solar customers across Utah who opted in to allow access to their inverter data. This data included customers from 101 different zip codes. Of these

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[13] *Id*.
[14] *Id*.
[15] Data obtained from Enphase inverters was in 5-minute intervals. Data obtained from SolarEdge inverters was in 15-minute intervals. Enphase and SolarEdge did not directly provide this info. Instead, the solar installers granted access to this information on their platforms. RMP identified the inverter manufacturer for 13,729 customers, and 83.4% of these customers had either SolarEdge or Enphase as their inverter manufacturer.

customers, 23 customers' systems were installed after January 1, 2019. I excluded these customers from my analysis, resulting in 1,217 customers with full data across 100 zip codes for calendar year 2019.[16]

Q. Please describe any other data that were used as part of your work.

A. In response to data requests from Vote Solar, RMP provided multiple iterations of a spreadsheet of the population of DG customers through January 16, 2020.[17] These spreadsheets contained the customer number, zip code, name plate capacity, verified system capacity, installation date, residential or commercial indicator, rate schedule, azimuth, tilt, inverter model, inverter manufacturer, and estimated production. If a customer consented to RMP sharing its personally identifiable data, the address was also provided. Not all information was populated for every customer.

Additionally, RMP provided export data from 2015 to 2019 for a subset of customers at the following interval:

- Monthly export data for 30,621 unique customers.

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[16] For modeling related to production, I did not include the customers with a partial year of data. In subsequent sections of the report, I report the number of opt-in customers for which I acquired data for the full year of 2019, which is 1,217.

[17] Labeled as various revised versions of "Attach 4.1" and as "Attach 9.8" in RMP's Responses to Vote Solar 4th Set Data Request, and RMP's Response to Vote Solar 9th Set Data Request. The consolidated spreadsheet is attached as Exhibit 2-AJL-REVISED.

RMP also provided the data they collected for the RMP LRS. For calendar year 2019, they provided:

- 15-minute interval export and production data for a sample of 141 Schedule 135 customers;[18] and
- 15-minute interval export data for all Schedule 136 customers.[19]

Lastly, RMP also provided a spreadsheet ("Attach 8.6") in RMP's Responses to Vote Solar's 8th Data Set Request containing the list of "customer numbers" and their corresponding "IDs," which is the identifying variable in a number of the data sources I used.[20]

In addition to the data I acquired from the solar companies and RMP, I also acquired hourly weather data for 2019 for each zip code in Utah. I matched the corresponding weather data to hourly estimates of production and exports using the customer's zip code.

The data are summarized in Table 1. The first column provides the source, the second column provides a description of the data, and the third column provides the variables used to identify a customer within the data.

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[18] This includes one customer who had two meters.
[19] As new Schedule 136 customers were added to the population, RMP collected and provided their data, yielding an increasing customer count for each subsequent month of data. *See* Figure 1.
[20] The corresponding ID for each customer number (if available) has been added as a column in Exhibit 2-AJL-REVISED.

Table 1. Description of Data Sources

Source	Description	Customer Identification Variable(s)
Solar inverter company (various providers)	• "API Data" Panel data on production for 1,217 customers who opted in to sharing their solar inverter data (Option 2).[21]	• Address
RMP	**Opt-in Forms** • Opt-in data in .pdf form	• Address
	LRS Data • Exports and production in 15-minute intervals for the 141 sampled Schedule 135 customers. • Exports in 15-minute intervals for the census of Schedule 136 customers.	• ID • ID
	Data Requests • "Attach 8.4 1st Supplemental" Data that includes exports in monthly intervals for 30,621 unique customers[22]	• Customer Number
	Customer Population Data • "Attach 4.1" and "Attach 9.8" Data with population of solar customers including address, name plate capacity, installation date, residential or commercial, rate schedule, azimuth, tile, model, and manufacturer.	• Customer Number • Address
	Customer Identification File • "Attach 8.6" data mapping each customer's ID to their Customer Number. Customers as of January 1, 2019 are included.	• Customer Number & ID
Weatherbit.io[23]	Hourly weather data for each zip code, including cloud coverage, temperature, solar azimuth, solar elevation, solar radiation, and direct normal solar irradiance.	• Zip code

[21] We obtained API data for additional customers, but their addresses could not be linked to the Customer Population Data and were therefore excluded from this count.
[22] Customers who had installation dates after December 31, 2019 could not be linked to the Customer Population Data and therefore were excluded from this count.
[23] *See About Weatherbit.io*, Weatherbit.io, https://www.weatherbit.io/about.

Q. Please describe how you linked the various datasets you used in your analysis.

A. Table 1 provides the variables used to identify a customer in each dataset and to link the customer information across the different data sources. For example, I used the customer's address to link the opt-in spreadsheets from RMP and solar inverter production data from the solar inverter companies to the Customer Population Data. Customers can be identified in the 15-minute interval export data using the ID, whereas they are identified using their Customer Number in the customer Population Data. To link these datasets, I used the Customer Identification File, provided by RMP which provides the corresponding ID for each Customer Number, if applicable. Customers in the LRS data could be identified using their ID, so I also used the Customer Identification File to link this dataset to the customer population data.

VI. SURVEY RESPONSE RESULTS

Q. Can you describe the survey results?

A. Yes. Of the approximately 34,000 letters mailed, there were a total of 3,364 customers who opted in by providing consent to contact their solar installer. Of those, we received production data for 2019 for 1,217 customers. Generally, daytime winter production levels were at about 15-25% of capacity on average, while in summer months of June through August, those figures were at about 35-40% of capacity on average. At peak times (1 pm) on clear summer days, average production across the state was approximately 70% of capacity. In general, production across the state varied little, after controlling for the weather and time of year using a regression model. Because production is largely a function of weather and time, it is possible to estimate the production for the entire population of installed capacity, as long as the location of those installations is known.

VII. ANALYSIS AND PROJECTION

Q. What is the population of interest?

A. The population of interest for this study are the residential and commercial customers that had installed distributed generation as of December 31, 2019. Based on information provided in discovery there are a total of 38,876 customers as the population of interest.[24]

A. PRODUCTION

Q. How did you estimate total production for 2019?

A. I developed a regression model to estimate solar production for residential and commercial CG based on the 2019 data.[25]

Q. What data did you use for the production estimation model?

A. I used the solar inverter data from the Vote Solar LRS for customers whose system was installed prior to January 1, 2019. Specifically, I relied on the energy production data from 1,217 customers. In total, that granted me access to approximately 10.9 million

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[24] *See* Exhibit 2-AJL-REVISED.

[25] I statistically correlated key panel attributes among the opt-in customers to estimate a given panel's performance and used those correlations to build a robust statistical model. The only necessary component to apply this statistical model to the larger population is that each data element contained in the model is also available for the population I am attempting to estimate.

observations of day-hour production figures. For inclusion in the model, a system had to have an installation date prior to January 1, 2019.[26, 27]

Q. What was the dependent variable for the model?

A. The dependent variable was energy production as a percentage of nameplate capacity (production ratio).

Q. How did you estimate this ratio?

A. I used an ordinary least squares regression to estimate the statistical relationship between production ratio and the following factors:

1. Binary indicator for hour of the day (0-23);
2. Binary indicator for month of the year (1-12);
3. Interactions of month and hour indicators;
4. Various weather statistics based on zip code, day, and hour;
5. An indicator distinguishing between Schedule 135 and Schedule 136 customers; and
6. An indicator distinguishing between commercial and residential solar panel owners.

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[26] *See* Exhibit 3-AJL.

[27] There were 23 customers who opted in to the Vote Solar LRS and for whom I acquired API data, but their system was installed after January 1, 2019. I did not use production metrics in the model for these customers.

Q. How did you use the findings of the model to produce total production?

A. I performed the following two steps:

1. Applied the regression coefficients to predict production for the 37,659 customers who **did not** provide production data, and
2. Added the production figure from Step 1 to the total production of the customers who **did** provide production data.

B. EXPORTS

Q. How did you estimate total exports for 2019?

A. Since I had export data in 15-minute intervals and monthly totals for varying customer groups, I performed two calculations to estimate total exports. The first calculation disaggregates the monthly customer totals into day-hour estimates for the 30,621 customers for whom I had monthly export data. The second calculation uses a model to estimate the day-hour exports for the 4,939 customers for whom I **did not** receive any export data.

Q. What data did you use for the export estimation?

A. For the export estimation, I relied on the data produced by RMP through Vote Solar data requests[28] and the RMP LRS data. I received all available metering data from RMP, as

[28] This data was contained in a series of spreadsheets in the folder "Attach 8.4 CONF," attached to RMP's Response to Vote Solar 8th Set Data Request (Nov. 26, 2019). I only utilized one of these files, "UTSCH135_2019_Monthly_CONF.xlsx."

requested, but RMP only retained and could provide these data in monthly intervals for 30,621 customers outside of the RMP LRS. I used 15-minute interval export data for the 3,318 customers that were part of the RMP LRS for all of 2019, which I aggregated to hourly intervals. In total, I had access to approximately 29 million observations of day-hour export data.[29] For consistency, a solar panel owner was required to have a full year of solar exports to be included in the export estimation model.

Q. How did you calculate the hourly export values for the customers with monthly totals provided by RMP?

A. To disaggregate the monthly total export figures into hourly estimates, I used the RMP LRS 15-minute data which I aggregated to the hourly level and calculated the percentage contribution of each day-hour export value to the monthly total for each customer. From there, I calculated the median day-hour percentage across all customers included in the RMP LRS (Schedule 135 and Schedule 136). I then applied those percentages to the monthly totals received from RMP. In detail, the calculation is as follows:

1. Calculate the total monthly export totals per customer using the hourly exports from the RMP LRS;
2. Divide each customer's day- hour export amount by its total monthly exports within each month;

[29] *See* Exhibit 4-AJL-REVISED.

3. Calculate the median values from Step 2 for each month, day, and hour;[30] and
4. Multiply the median values from Step 3 to the monthly totals received from RMP.

These steps produced day-hour estimates for the exports for each of the 30,621 customers from whom we had monthly export total data.

Q. How did you estimate the exports for the portion of the population for whom you did not have monthly export totals?

A. I developed an ordinary least squares ("OLS") regression model.

Q. What was the dependent variable in export ratio model?

A. The dependent variable was exports as a percentage of nameplate capacity.

Q. How did you estimate the export ratio?

A. Using the OLS model, I estimated the statistical relationship between the export ratio and the following factors:

1. Binary indicator for hour of the day (0-23);
2. Binary indicator for month of the year (1-12);
3. Interaction term between month and hour indicators;
4. Binary indicator for a weekend day;

[30] If the medians did not sum exactly to one for a given month, I redistributed the remainder proportionally across all months according to the initial percentage so that the values would sum to one.

5. Interaction term between hour of the day and weekend indicators;
6. Various weather statistics based on zip code, day, and hour;
7. An indicator distinguishing between Schedule 135 and Schedule 136 customers; and
8. An indicator distinguishing between commercial and residential solar panel owners.

Q. How did you use the findings of the model to produce total exports for this group?

A. I applied the regression coefficients to estimate total exports for the 4,939 customers for whom I had no export data to produce the day-hour estimates.

Q. How did you calculate total exports?

A. I summed the day-hour data provided by RMP's LRS, the day-hour estimations I calculated using the disaggregation method from the monthly totals, and the day-hour projections produced by the model to calculate the total exports for the full population for the full year.

Q. How did you test the reliability of your regression models?

A. I calculated the R-squared of the regressions, which calculates how well the model predicts the dependent variable (*e.g.*, production ratio). The figure is bounded between 0 and 1, where values closer to 1 are better at explaining the variability of the data. The base R-squared values for the production and export models are 0.74 and 0.60, respectively. The production R-squared is higher because it is driven by the mechanical process and weather, while exports are additionally driven by consumer behavior.

VIII. CONCLUSION

Q. What are your conclusions based on the models' findings?

A. Figure 2 shows that the peak month of production from CG is June, and the peak export month is May. In general, production and exports are higher in the Spring and Summer months.

Figure 2: Production & Exports by Months (2019)

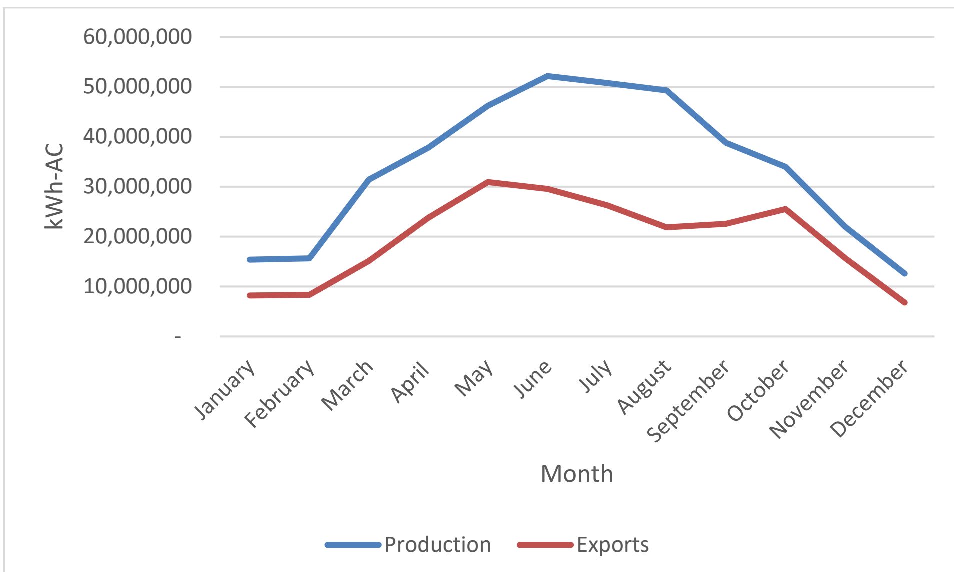
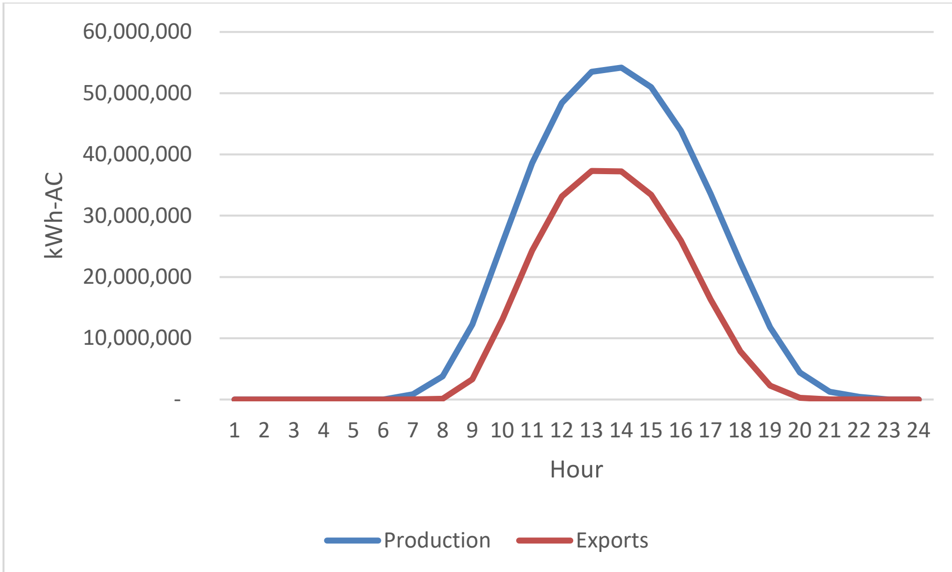


Figure 3 shows that the peak production and export hours are between 12PM and 2PM and 12PM and 3PM, respectively. In general, production and exports are low in the early morning and late evening hours and are zero overnight.

Figure 3: Production by Hours (2019)



I provided Exhibit 1-AJL-REVISED to Dr. Michael Milligan, Mr. Curt Volkmann, Dr. Spencer Yang, and Dr. Carolyn Berry. This exhibit includes my assessment of the total CG production and total CG exports on an hourly basis for all of 2019. It also provides the annual production factor (total production kWh/installed kW) and export factor (exported kWh/installed kW).

Q. Does this conclude your revised testimony?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on this 8th day of May, 2020 a true and correct copy of the foregoing was served by email upon the following:

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