ROCKY MOUNTAIN POWER
A DIVISION OF PACIFICORP

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April 11, 2018

VIA ELECTRONIC FILING

Utah Public Service Commission
Heber M. Wells Building, 4th Floor
160 East 300 South
Salt Lake City, UT 84114

Attention: Gary Widerburg
Commission Secretary

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

On April 10, 2018 Rocky Mountain Power ("Company") filed the rebuttal testimony of Company witness Mr. Elder, which inadvertently contained confidential information that was not properly identified and redacted. The Company hereby submits corrected versions of pages 12, 17, and 18 of Mr. Elder's rebuttal testimony, which should replace the original pages 12, 17, and 18 in their entirety. The Company respectfully requests that the original pages 12, 17, and 18 of Mr. Elder's testimony be destroyed.

The Company requests that all formal correspondence and requests for additional information regarding this filing be addressed to the following:

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Sincerely,

Joelle Steward
Vice President, Regulation

REDACTED
Rocky Mountain Power
Docket No. 17-035-61
Witness: Kenneth Lee Elder Jr

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

REDACTED
Rebuttal Testimony of Kenneth Lee Elder Jr

April 2018

Q. Please state your name.

A. My name is Kenneth Lee Elder Jr.

Q. Are you the same Kenneth Lee Elder Jr who testified previously in this case?

A. Yes.

Purpose of Testimony

Q. What is the purpose of your testimony?

A. My testimony responds to various issues raised about Rocky Mountain Power's ("Company") proposed load research study ("LRS") filed February 15, 2018, in the testimonies of Mr. Rick Gilliam of Vote Solar, Mr. Christopher Worley of Vivint Solar ("Vivint"), Ms. Kate Bowman of Utah Clean Energy ("UCE"), Mr. Charles E. Peterson and Mr. Robert A. Davis of the Utah Division of Public Utilities ("Division").

Q. Please summarize your testimony.

A. My testimony demonstrates that the Company's proposed LRS is reasonable and should be approved for several reasons. First, the LRS uses system capacity as the primary variable of interest, consistent with the purpose of the proceeding, which is to determine the compensation rate for exported energy. Parties' recommendations that the sample design for a study of private generation be determined from total energy is not reasonable because total energy is distinct and independent from production. How customers use energy has no bearing on what their solar panels produce, among other reasons. Second, the Company's proposed sample size is reasonable, cost effective, and exceeds industry standards for purposes of achieving a reasonable confidence level. Parties' recommendations to increase the sample size would be too costly for

customers, given the purpose of the proceeding. The Company also responds to several other recommendations made by the parties.

Variable of Interest

Q. Please respond to the recommendations of Mr. Gilliam[1], Ms. Bowman[2], and Mr. Worley[3] that the variable of interest upon which to stratify the data in the LRS should be total energy instead of system capacity as recommended by the Company.

A. The recommendations of Vote Solar, UCE, and Vivint to stratify the study on total energy reveals the parties' misunderstanding of the Company's plans to provide relevant data for this proceeding. As I discussed in my direct testimony, the Company does not plan to develop a sample of customer generators to estimate energy deliveries and exports because the Company will have access to the actual 15-minute interval data for both of these variables from all Schedule 136 customers. The profile of exported energy is the most relevant and only set of data for establishing *export* credits for customer exported electricity, which is precisely the purpose of this proceeding. There is no need to determine the best variable of interest from which to develop a sample to estimate the profile of exported energy because the actual profiles of exported energy for all Schedule 136 customers will be available. There is no better sample needed or required.

[1] See Dir. Testimony of Rick Gilliam (Vote Solar) ll. 459 through 463.
[2] See Dir. Testimony of Kate Bowman (UCE), ll. 322 through 324.
[3] See Dir. Testimony of Chris Worley (Vivint), ll. 271 through 273.

Q. Why is exported energy critical to this proceeding?

A. In the docket to investigate the costs and benefits of the Company's net metering program, Docket No. 14-035-114, (the "NEM Docket"), the Commission approved a settlement which required an export credit proceeding to determine the compensation rate for exported power from all customer generation systems, after the expiration of the grandfathering period and transition period for customers on Schedules 135 and 136, respectively. The value of exported energy (and the appropriate compensation rate) will depend on the volume and timing of exports from the customer to the Company.

Q. How would private generation production profiles be used for this proceeding?

A. Since both the generation output from a solar array and the full-requirements energy usage can influence the profile of exported energy, the Company plans to gather information on the private generation systems' output based upon a sample or subset of customers. While private generation data is not necessary to develop a profile of exported energy for a given historical time, it could be useful for understanding the intertemporal relationship between full-requirements energy and rooftop solar production. For example, this data could be used if someone wants to project how different exported energy profiles may change in the future if average private generation system size changes. As indicated in my direct testimony, the Company intends to develop an estimated production profile from a sample of customers to

further supplement the body of data available. However, the profile of exported energy is of primary concern.

Q. If the Company plans to gather the exported and delivered energy from all Schedule 136 customers, how will it use private generation production data from Schedule 135 customers?

A. The profile of a rooftop solar system is entirely independent of the customers' energy consumption patterns. If a customer turns on a light or starts charging an electric vehicle, these actions have no influence on the amount of energy the solar panels are producing. The factors that influence the output of a solar array are the capacity of the system, orientation or azimuth, tilt, longitude, latitude, shading, cloud cover, age of the system, and solar irradiance. Since a system's generation is independent of consumption, the estimated profile of the private generation system can be scaled to the installed capacities of the population of Schedule 136 customers from whom exported and delivered energy will be gathered. At any given time, four variables describe a customer-generator's activity: 1) exported energy; 2) delivered energy; 3) production; and 4) full-requirements energy.

- Exported energy is measured for all Schedule 136 customers.
- Delivered energy is measured for all Schedule 136 customers.
- Production can be measured if an expensive and obtrusive meter is installed.

- Full-requirements energy can be determined by the formula "Delivered Energy + (Production – Exported Energy)".[4]

The Company proposes an average production profile be estimated from a sample of customers that would then be scaled to the larger population of Schedule 136 customers. Using both studies, the Company would have a reasonable estimate of all four variables for each customer and for the full population.

Q. Why did the Company rely on nameplate capacity to design the generation sample?

A. A population should be stratified by the sample's variable of interest. The purpose of the private generation sample is to calculate a representative sample of private generation system output, therefore the variable of interest for the sample would be private generation system-energy production. However, when the variable of interest is unknown, such as private generation system-energy production, an auxiliary variable that is highly correlated with the variable of interest should be used. Table 1 below illustrates the correlation coefficients for nameplate capacity, exports, and deliveries relative to generation energy output. Based on information obtained from the NEM sample used for the NEM Docket, private generation system-nameplate capacity was determined to be the optimal variable to use for sample design because its correlation

[4] A diagram which illustrates this formula can be found on Figure 1 of Company Witness Mr. Kenneth Lee Elder Jr.'s direct testimony.

with solar system energy output is higher than the correlation of generation compared against exported energy, delivered energy, and full-requirements energy.

Table 1
Correlation of NEM Private Generation Sample Data to Generation

	Correlation Coefficient
Correlation between Generation and Nameplate Capacity	0.93
Correlation between Generation and Exports	0.86
Correlation between Generation and Deliveries	0.60
Correlation between Generation and Full-Requirements Energy	0.63

Q. Do Mr. Gilliam, Ms. Bowman, and Mr. Worley's recommendations that the sample design for a study of private generation be determined from total energy make sense for purposes of this proceeding?

A. No. A number of issues exist with this approach. First, total energy, or full-requirements energy, is a distinct and independent variable from production. How customers use energy has no bearing on what their solar panels produce. It does not make sense to select a sample of customers for whom rooftop solar production is being measured on the basis of their energy usage. Full-requirements, or total energy, is not well correlated with private generation system output. Second, full-requirements energy is unknown for each customer unless production is being measured. In other words, even if this were the correct variable on which to base a sample, a production meter would be required for the entire population to measure it, effectively defeating

the purpose of having a sample. Requiring a production meter on the entire population would be problematic and expensive, as noted by the Division.[5]

Sample Size

Q. Some parties recommend increasing the sample size beyond the Company's proposed sample size. Please summarize their recommendations.

A. Mr. Worley recommends that simple sampling instead of stratified sampling be used.[6] He states that simple sampling would require a sample size of 379 to achieve plus or minus five percent at the 95 percent confidence level.[7] Mr. Gilliam recommends that a production meter be installed on every Schedule 136 customer.[8]

Q. Why is it unreasonable to increase the sample size of production meters to the levels that other parties are requesting?

A. As noted by Division witness Mr. Peterson, "there are always time and money trade-offs in doing studies such as these and […] the researcher always has to balance these trade-offs." The Company disagrees that these proposals strike a reasonable balance between the trade-offs for several reasons. First, installing production meters is expensive. When the Company installed 36 production meters across its service territory in 2014, the average cost per generation profile meter was [redacted]. Second, installing production meters can be obtrusive for customers because it requires an

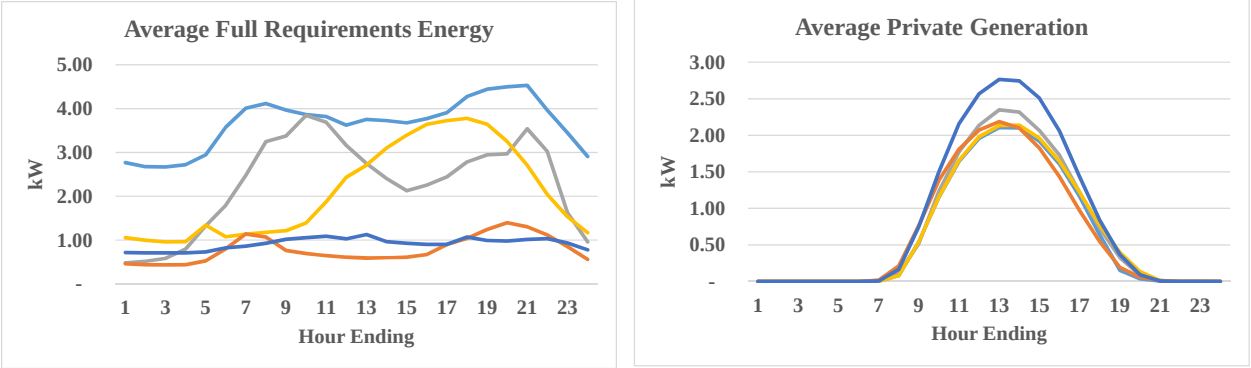
[5] See Dir. Testimony of Robert A. Davis (Division), ll.108 through 116.
[6] See Dir. Testimony of Chris Worley, ll. 266 through 268.
[7] See *Id*., ll. 256 and 257.
[8] See Dir. Testimony of Rick Gilliam, ll. 347 through 351.

electrician to install wiring and place another meter base on the side of customers' homes. Minimizing the number of production meters that need to be installed decreases both cost and customer inconvenience. Third, the profiles of production from rooftop solar are highly predictable and exhibit far less variation than customer usage patterns. The sun rises and sets every day. In the morning, solar production increases and by evening, it wanes. In contrast, customers' loads can exhibit a very wide level of diversity and are dependent upon individual humans and their sporadic behaviors. A very large sample of production profile data is therefore unnecessary. Finally, private generation production can be helpful to supplement the body of information, but is ultimately not the primary data needed to develop export credits for customer generated electricity, which is the purpose of this proceeding. The profile of exported energy is of chief importance to determine the value of exported energy. It is my position that obtaining a higher level of precision for the variable of production for this proceeding is not worth the additional cost for our customers.

Q. Please provide an example of how rooftop solar production exhibits less variation than customer usage.

A. Figure 1 below shows the profiles for four customers in the Company's LRS that were used in the NEM Docket whose system sizes range between 3.5 kW and 4.5 kW of nameplate capacity.

Figure 1.
Average Annual Profiles of Customer Generators with Systems between 3.5 kW and 4.5 kW



The left-hand side of this figure shows that the four customers in the 3.5 to 4.5 kW range exhibit a wide range of usage profiles compared to their more homogenous solar production profiles shown on the right-hand side of the figure.

Q. Please comment on Mr. Gilliam's[9] recommendation that the Company make available before and after rooftop solar installation usage data for sampled customers.

A. The Company will be able to provide monthly energy usage data for sampled customers for the period before they installed their private generation, as available.[10] Since profile meters will be installed at the time of interconnection, pre-interconnection usage will only be available at the monthly cycle read level.

[9] See Dir. Testimony of Rick Gilliam, ll. 369 through 372.
[10] A home that is newly constructed with a rooftop solar system will not have any prior monthly usage.

Meter Costs

Q. Mr. Gilliam criticizes the Company's cost estimates to pay an electrician to install a production meter, and compares the Company's average cost of $76 per hour to the U.S. Bureau of Labor Statistics mean wage for electricians in Utah of $24.95.[11] Is this a fair comparison?

A. No. The wage paid to an electrician does not reflect the total cost of labor. Total cost includes not only the base wage, but items such as benefits, vehicles and equipment, tools, sales, general and administrative costs. The Company's estimate was derived from actual installations and is reasonable when compared to online estimates of the cost to hire an electrician. According to ProMatcher.com, the average cost of residential electric contractors in Salt Lake City, Utah is $74.09 per hour and the average cost of commercial electric contractors in Salt Lake City, Utah is $91.59 per hour. [12]

Q. Please comment on Mr. Worley's cost comparison of revenue grade meters.[13]

A. Mr. Worley provides the cost of two revenue grade meters in his testimony, with an estimated price of $299 and $649. The Company's purchase cost for a revenue grade load profile meter is [redacted].

[11] See Dir. Testimony of Rick Gilliam, ll. 290 through 295.
[12] See https://electricians.promatcher.com/cost/salt-lake-city-ut-electricians-costs-prices.aspx. This website was accessed on March 30, 2018.
[13] See Dir. Testimony of Chris Worley, ll. 119 through 128.

Q. Please comment on Mr. Worley's assertions that it should take an electrician no more than four hours to install a meter similar to the LGate 120 or the Solar-Log 350.[14]

A. Mr. Worley's estimate appears to be for the installation of the meter and the required cabling for Ethernet connections only. It does not include the time necessary to install all required hardware including the meter base, conduits, cables and outage time as well as equipment procurement, travel and administrative time. During the Company's production meter installations in 2014, it took two electricians an average of 10 hours (20 man-hours) to install all the equipment necessary for a production profile meter safely and in accordance with reliability standards.

Q. Please elaborate on the cost for the various components borne by the Company for installing a revenue grade production meter.

A. Based on the Company's experience with installing production grade meters in the NEM Docket, the average cost for installing these meters was [redacted]. Table 2 below, as provided in Vote Solar Data Response 1.6, provides detailed average costs associated with production meter installation under that docket.

Table 2
Average Production Meter Installation Costs

Production Meter Base - Electrical Contractor (Average)	
Labor	$ 1,524.00
Meter base	55.46
Miscellaneous material - wire, conduit, etc.,	329.64
Truck and Tools	170.90
Total	2,080.00

Note: electrical contractor costs are based on 2014 data

[14] See *Id*. ll. 119 through 128.

Production Meter - Rocky Mountain Power	
Travel (Labor)	$ 49.00
Install meter (Labor)	39.00
Verify and validate meter data	24.50
Meter (Material)	[redacted]
Meter ring and seals	3.46
Total	[redacted]

Total cost to install a production meter	[redacted]

*All meter costs provided are confidential per the Company purchasing agreement with the meter manufacturer.

Q. Do you agree with Mr. Gilliam's assertion that the Company's analysis under this proceeding fails to measure the most relevant variables of interest?[15]

A. No. The most relevant variable of interest under this proceeding is exported energy from transition program customers. Exported energy data is essential to this proceeding, as it is the variable needed to calculate the value of export credits. The LRS will collect 15-minute exported energy and delivered energy for every transition program customer over the January 1, 2019 to December 31, 2019 timeframe.

In addition to collecting exported energy data, the Company's proposed LRS will collect two other sets of data: 1) 15-minute delivered energy for all transition program customers over the January 1, 2019 to December 31, 2019 timeframe and 2) 15-minute interval data of generation that will be acquired from a sample of 70 grandfathered private generation systems.

[15] See Dir. Testimony of Rick Gilliam, ll. 177 through 178.

Q. Do you agree with Mr. Gilliam's assertion that the Company's load research sample design fails to account for variability in the load profile of residential customers?[16]

A. No. The data available from all transition program customers for exports and deliveries will capture their variability because it reflects data from each and every transition program customer over the January 1, 2019 to December 31, 2019 timeframe.

Further, Mr. Gilliam's assertion is flawed because the Company's proposed sample is designed to produce a representative generation profile which is not dependent or related to a customer's load profile. As such, the generation sample was designed based on the nameplate capacity of private generation systems in order to produce a generation profile that is representative of a solar customer's average private generation.

Data Collection

Q. Please comment on Mr. Gilliam's recommendation that the Company verify the rooftop system capacity, orientation, tilt, as well as the zip code and estimated degree of shading during the change-out of the transition customer's billing meter.[17]

A. The Company's transition program applications already gather the information for private generation system capacity, orientation, tilt and zip code. The Company does not document the estimated degree of shading for private generation systems. It would

[16] See *Id.*, ll. 178 through 179.
[17] See Dir. Testimony of Rick Gilliam, ll. 491 through 499.

be unreasonably burdensome to require shading information, especially considering the census of Schedule 136 customers will capture the variation in shading that is inherently present within the population.

Q. Please address Mr. Gilliam's recommendation that the Company conduct a survey of grandfathered and transition program customers to document the types of appliances and electric devices they have.[18]

A. The Company does not see how the survey proposed adds value to the currently proposed LRS. Based on Company experience with conducting these types of surveys, an anticipated response rate would be in the six to ten percent range and would cost anywhere from $10,000 to $20,000 in addition to approximately 160 hours of labor for survey design, implementation, oversight, response aggregation and analysis. Again, it is important to balance the value of the data gathered with the customers' perceptions of privacy invasions. Mr. Gilliam's proposal does not achieve the objective of balancing these needs.

Q. Please address Mr. Worley's recommendation to request customer's production data from transition program customers.[19]

A. The Company could request that grandfathered and transition customers provide their systems' production data or that they sign a disclosure form allowing their solar provider to disclose their production data to the Company. However, it is not clear

[18] See Dir. Testimony of Rick Gilliam, ll. 374 through 384.
[19] See Dir. Testimony of Chris Worley, ll. 94 through 97.

how many customers would agree for their solar provider to provide this data to the Company.

Q. Will requesting inverter data from customers as part of the survey described above address Ms. Bowman's[20], Mr. Gilliam's[21], and Mr. Worley's[22] request for generation, delivered, and exported energy data from the same customers?

A. Yes. If transition customers are willing to share their inverter data with the Company, it could be used in conjunction with the same customers' exports and delivery data to provide another set of data to compare against. The data obtained from the customers' inverters is not intended to replace the data obtained from the revenue grade meters as proposed for this proceeding, rather it is intended to provide another set of data by which to make comparisons.

Q. Do you agree with Mr. Worley's assertion that the sample design will produce biased results by not taking into consideration for orientation, tilt and shading?[23]

A. No. Stratified random sampling is designed to provide statistically accurate estimates for the total class and not for subpopulations of load research sample customers. For example, Table 3 below illustrates that the orientation for private generation systems within the sample is reasonable when compared to the orientation for the total 10,309 private generation customers the Company has available information.

[20] See Dir. Testimony of Kate Bowman, ll. 161 through 172.
[21] See Dir. Testimony of Rick Gilliam, ll. 222 through 225.
[22] See Dir. Testimony of Chris Worley, ll. 152 through 155.
[23] See Dir. Testimony of Chris Worley, ll. 199 through 201.

Table 3
Orientation for Company Interconnected Private Generation Systems

Orientation	System Orientation for Known Customers*	Sample System Orientation
North	3%	0%
South	60%	67%
East	17%	9%
West	21%	23%
Total	100%	100%

*System orientation for 10,309 Utah solar customers

Confidence Interval and Sample Size

Q. Do you agree with Mr. Worley's recommendation that the generation sample should be increased to achieve an accuracy of +/-5 percent at the 95 percent confidence level?[24]

A. No. Mr. Worley's recommendation to increase the sample accuracy to reduce the margin of error for exported energy to be greater than +/- 10 percent is flawed.[25] As currently proposed, there is no sampling error associated with exported energy. In other words, the sampling error associated with exported energy will be +/- 0 percent.

All samples designed and installed in the Company's Utah service territory meet or exceed the standard of +/- 10 percent at 90 percent confidence, which was specified in 1978 by Section 133 of the Public Utilities Regulatory Policy Act ("PURPA"). Although this PURPA requirement was removed in the 1992 edition of the CFR 57 FR 53991 this specification has become a load research standard, particularly for samples used to support the development of rates or other regulatory requirements. The proposed generation sample design of +/- 10 percent at the 95

[24] See Dir. Testimony of Chris Worley, ll. 103 through 104.
[25] See *Id.*, ll. 94 through 97.

percent confidence level exceeds the accuracy of the Company's standard load research sample design.

Further, increasing the accuracy of the generation sample would result in unnecessary costs for customers. Holding everything else constant, to achieve an accuracy of +/-5 percent at the 95 percent confidence level, would require increasing the sample size from 70 sample sites to 172 sample sites. At an average installation cost of [redacted] per generation profile meter, this would result in an additional cost to customers of [redacted] to develop the generation sample.

Q. Do you agree with Mr. Worley's assessment that a simple random sample of private generation systems would require 379 sites?[26]

A. No. A sample size of 379 indicates that the variance of the population's generation was not taken into consideration by Mr. Worley when determining his sample size. When accounting for the variance of private generation system nameplate capacity, the sample size needed to obtain +/-10 percent at the 95 percent confidence level using a simple random sample would be 4,069 sites, not 379 sites.

Q. Do you agree with Mr. Worley's recommendation to use a simple random sampling approach, rather than the stratified sampling approach?[27]

A. No. Simple random sampling is easily understood and accepted, but there is a significant cost increase in moving from stratified random to simple random sampling approach. If both types of samples will provide load estimates at the same level of statistical significance, it is prudent for the Company to adopt the method with the lowest cost to customers.

[26] See *Id*, ll. 256 through 258.
[27] See *Id.*, ll. 267 through 268.

Q. Please describe the cost differential between a simple random approach as proposed by Mr. Worley and a stratified random approach.

A. The currently proposed generation sample achieves an accuracy level of +/-10 percent at a 95 percent confidence level when using a stratified random sampling approach. Using a simple random approach, it would require 4,069 generation profile meters, or an additional 3,999 profile meters to achieve the same level of accuracy provided by the stratified random approach. Based on the average private generation meter installation cost of [redacted] per generation profile meter, using a simple random approach would cost customers an additional [redacted] to achieve the same level of accuracy as the sample using a stratified random sampling approach.

Q. Do you agree with Mr. Worley's and Ms. Bowman's assertion that separate residential and commercial generation samples should be developed because of differing consumption profiles for the two customer classes?[28]

A. No. Mr. Worley's and Ms. Bowman's recommendations are unnecessary. The generation profile is not related to customer consumption; whereas exports and deliveries are contingent on consumption. Differences between exports and deliveries for residential and commercial customers will be available from the census of transition customers.

As previously noted, the purpose of the generation sample is to derive the average generation output for a solar customer's array. Because of the differing sizes of private generation systems, system output could exhibit differences between residential and commercial customers. It is also more likely that larger systems would

[28] See *Id.*, ll. 277 through 278.

be installed on a flat roof such as the roofs on a big box store (non-residential). This may have an influence on the tilt of these larger arrays. I believe that we will be able to understand this better by examining the differences between the fourth stratum and other strata.

Q. Why is it relevant that the generation profile for a small customer, such as residential customers is virtually the same as a large non-residential customer?

A. The similarity between the two shapes is important because of the way the Company anticipates using the production profile derived from the generation sample. The Company intends to scale solar system output for each site in the generation sample to 1 kW. The Company will produce a scalable production profile shape that will be applied to the average transition customer system size and then applied by the total number of transition program customers to determine the hourly production of transition program customers.

Further, in addition to calculating the hourly production for all transition program customers, the hourly generation sample will be used in conjunction with the hourly exports and delivery data to determine an average customer's full-requirements.

Q. Do you agree with Mr. Worley's assertion that the load research study would show no difference between West-facing systems and systems facing other directions?[29]

A. No. As previously noted, the Company is acquiring a census of export and delivery data from transition customers. The Company is also acquiring system orientation and tilt data for these same customers as part of the transition program application process.

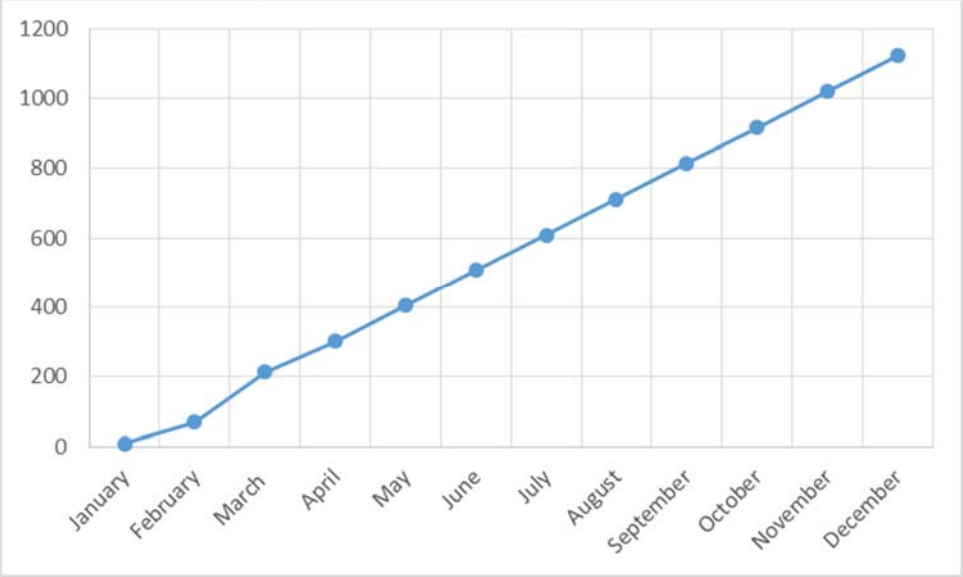
[29] See *Id.*, ll. 195 through 197.

The LRS will allow for parties to evaluate how export and delivery differs between customers depending on their system's orientation and/or tilt.

Q. Please comment on Mr. Davis's concern that there may be too few transition customers interconnected to ensure an ample record of exports and delivery data.[30]

A. As of March 2018 there were a total of 213 transition program customer with meters installed. Using a simple trend of the total meters that have been installed over the January through March timeframe, it is reasonable to expect approximately 1,100 transition program customers to have meters installed by January 1, 2019, as shown in Figure 2 below. This will provide a robust record of transition program customer exports and delivery data for this proceeding.

Figure 2
Projection of Installed Schedule 136 Meters



[30] See Dir. Testimony of Robert A. Davis, ll. 124 through 127.

Q. Please comment on Mr. Peterson's concern regarding the Company implicitly assuming that the population's variance is reasonably homogenous between regions.[31]

A. The generation sample was not explicitly designed on the variance of nameplate capacity in each Utah county. Rather, the sample was designed based on the variance of nameplate capacity throughout Utah. Therefore, the sample is intended to be representative of an average Utah solar customer's production profile. In an effort to take into consideration geographic differences in solar system output, the Company ensured that the sample design achieved the same level of county private generation system saturation as evident in the NEM population.

Q. Please comment on Mr. Peterson's concern about the possibility of under-sampling in an area that is systematically different from the rest of the system and which may make a material contribution to the overall system results.[32]

A. The Company is willing to compare the samples within each individual county to National Renewable Energy Lab (NREL) private generation curves for the region to see if systematic differences exist between the sample site and the region in which the sample is located.

Q. Do you agree with Mr. Worley's statement that "parties will not be able to estimate the direct impact of DG on RMP's distribution system?[33]

A. No. The LRS will provide exported energy and delivered energy for every transition program customer over the January 1, 2019 to December 31, 2019 timeframe. Parties

[31] See Dir. Testimony of Charles E. Peterson, ll. 124 through 127.
[32] See *Id.*, ll. 114 through 115.
[33] See Dir. Testimony of Chris Worley, ll. 152 through 155.

will know the quantity and timing of energy exports and deliveries for every transition customer because a census will be conducted for this set of data. This data could be cross-referenced to the Company's mapping system which includes line transformer, distribution circuit, and substation information.

Q. Please comment on Mr. Peterson's recommendation that when the production data are collected for the current proceeding, they should be tested for any evidence of bias between the earlier selected customers.[34]

A. The Company is willing to compare and make available the generation profile for the 36 production meters relied on for the NEM Docket to the 34 newly installed production meters in the current proceeding.

Q. Please comment on Mr. Peterson's recommendation that the Company report to the Division and other interested parties on a monthly basis, the on-going results of the study so that any emerging anomalies can be evaluated.[35]

A. The Company is willing to report to the Division and other interested parties on a monthly basis to provide the on-going results of the LRS under this proceeding.

Q. What is your recommendation to the Commission?

A. The Company believes its LRS filed February 15, 2018 is designed in a manner that will provide relevant data to achieve the stated objectives in this proceeding. Therefore, the Company respectfully requests that the Commission approve the Company's LRS. The study as proposed will provide a census of exported energy, which is all that is necessary to calculate the value of energy exported from private generation. Further, to provide additional information for transition program customers, the proposed study will also

[34] See Dir. Testimony of Charles E. Peterson, ll. 121 through 123.
[35] See *Id.*, ll. 142 through 146.

conduct a census of delivered energy from these customers. In addition, the LRS will incorporate a sample of 70 generation profile meters, which will provide the Company and parties the ability to calculate transition program customer full-requirements.

In response to party input, the Company agrees to test findings and report to the Division and other interested parties on a monthly basis to provide the on-going results of the LRS under this proceeding.

Q. Does this conclude your rebuttal testimony?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on April 11, 2018, a true and correct copy of Rocky Mountain Power's **REBUTTAL TESTIMONY – REPLACEMENT PAGES** in Docket No. 17-035-61 was served by email and overnight delivery on the following Parties:

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