Selendy & Gay PLLC
Jennifer M. Selendy
Joshua S. Margolin
1290 Avenue of the Americas
New York, NY 10104
212-390-9022
jselendy@selendygay.com
jmargolin@selendygay.com
Attorneys for Vote Solar

Stephen F. Mecham
10 W 100 S, Suite 323
Salt Lake City, UT 84101
385-222-1618
sfmecham@gmail.com
Utah Bar No. 4089
Attorney for Vivint Solar, Inc.

Hunter Holman
1014 2nd Avenue
Salt Lake City, UT 84103
801-363-4046
hunter@utahcleanenergy.com
Utah Bar No. 15165
Attorney for Utah Clean Energy

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 I** ***PETITION FOR REVIEW OR RE-HEARING***

Pursuant to Utah Code Ann. §§ 54-7-15 and 63G-4-301 and Utah Administrative Code § R746-1-801, Vote Solar, Utah Clean Energy ("UCE"), and Vivint Solar, Inc. ("Vivint") (collectively, the "Intervenors") hereby petition the Public Service Commission of Utah ("Commission") to review or rehear the Commission's Order In the Matter of the Application of Rocky Mountain Power to Establish Export Credits for Customer Generated Electricity ("Order") issued in the above-captioned docket on May 21, 2018.

In its Order, the Commission ordered that modifications be made to PacifiCorp's (the "Company") proposed Load Research Study ("LRS") in an attempt to rectify flaws identified by the Intervenors. Notwithstanding these modifications, the Intervenors respectfully submit that the Commission's findings and directives in the Order present ambiguities and do not address fundamental flaws in the sample

design and data collection of the Company's proposed LRS. These flaws ultimately impair the Intervenors' ability to meet their burden of proof to demonstrate "costs or benefits" of rooftop solar during Phase II. *See* Settlement at ¶ 30.

Specifically, the Intervenors request that the Commission review or rehear the following issues:

1. Review the Order to require the Company to fully rectify the four flaws identified by Dr. Albert Lee with the LRS's sample design: (i) the sample is not drawn from the population of interest; (ii) the sample is a product of two separate samples; (iii) there is a flawed assumption regarding the correlation between nameplate capacity and generation that could result in the sample size being too small to achieve the stated precision; and (iv) there are no contingency plans if additional customers are needed for the sample;

2. Review the Order to require the Company to provide information from relevant populations necessary to allow the Intervenors to meet their burden of proof in Phase II including: (i) import, export, and generation data from Schedule 135 and Schedule 136 customers; (ii) system characteristics (tilt, orientation, and shading); and (iii) customer characteristics (*e.g.*, "behind-the-meter" data such as large appliances and house or business size); and

3. Review the Order to require the Company to resubmit its updated LRS so the Commission and interested parties have the opportunity to ensure the Company's LRS complies with the Commission's order.

Accordingly, the Intervenors respectfully petition the Commission to provide review or rehearing on the foregoing issues in its Order.

INTRODUCTION

Under Utah Code Ann. §§ 54-4-4.1(1), 54-15-105.1, and paragraph 30 of the Settlement, as defined herein, the Commission is required to determine a "just and reasonable" export credit for rooftop solar that accords with "the public interest." Utah Code Ann. § 54-4-4.1 ("(1) The commission may, by rule or order, adopt any method of rate regulation that is: (a) consistent with this title; (b) in the public interest; and (c) just and reasonable."); *see* Utah Code Ann. § 54-15-105.1 ("The governing authority shall: . . . (2) determine a just and reasonable charge, credit, or ratemaking structure, including new or existing tariffs, in light of the costs and benefits."); Settlement at ¶ 30 ("[T]he Commission will determine a just and reasonable rate for export credits for customer generated electricity."). In accordance with that mandate, the Commission was tasked with reviewing the Company's LRS to assess whether it was appropriately designed to collect the information and data necessary to determine a just and reasonable export credit. The Intervenors' position is that the Commission's Order does not "provide direction towards a meaningful LRS." Order at 16. Instead, the Commission has effectively sanctioned the LRS's flawed sampling plan and has denied the Intervenors' requests for data to be used in assessing the costs and benefits of solar energy in the future. Thus, by its own Order, the Commission has not only frustrated its ability to determine a just and reasonable export credit in the public interest, but has also rendered any ultimate determination on an export credit highly susceptible to judicial challenge. Every day that passes while the Commission allows the Company's LRS to proceed without rectifying these issues makes the ultimate collection of sufficient data increasingly difficult.

PROCEDURAL HISTORY

On September 29, 2017, the Commission approved the August 28, 2017 Settlement ("Settlement") in Docket No. 14-035-114, In the Matter of the Investigation of the Costs and Benefits of the Company's Net Metering Program ("Settlement Approval Order"). The Settlement set a cap on the then-existing net metering program such that no new customers would be accepted, and those grandfathered net metering customers under the program ("Schedule 135" or "grandfathered" customers) would be permitted to maintain their current rate through December 31, 2035. *See* Settlement Approval Order at 4-5. Likewise, the Settlement established a net billing program with a fixed rate to expire on December 31, 2032 for customers who submitted an interconnection application after the cap date for the grandfathered program ("Schedule 136" or "transition" customers). *See* Settlement Approval Order at 5.

The Settlement also established that the Commission would commence a new proceeding to determine a new export credit.[1] *See* Settlement Approval Order at 5-6. As paragraph 30 of the Settlement makes clear, the purpose of the proceeding is to determine a "just and reasonable rate for export credits for customer generated electricity." Settlement at ¶ 30. The Settlement acknowledged that as part of the proceeding, the "[p]arties may present evidence addressing reasonably quantifiable costs or benefits or other considerations they deem relevant, but ***the Party asserting any position will bear the burden of proving its assertions***[.]" *Id*. (emphasis added). In essence, each party will bear the burden of presenting evidence in support of costs and benefits that it believes should impact the export credit.

[1] The export credit will apply to post-transition customers and Schedule 135 and Schedule 136 customers in 2036 and 2033 respectively. *See* Settlement Approval Order at 5-6.

On December 1, 2017, the Company filed an application requesting that the Commission initiate such an export credit proceeding. The Commission initiated the current docket for that proceeding, and on December 12, 2017, issued a scheduling order that segregated the docket into two phases. Phase I addresses the design of the Company's LRS, the methods by which the data will be collected during the LRS, and the types of data to be collected during the LRS. Using the data acquired during Phase I, Phase II will determine a "just and reasonable export credit rate for electricity generated by customer owned generation systems (CG) delivered" to the Company. Order at 2.

On February 15, 2018, the Company filed Phase I direct testimony from Kenneth Lee Elder, which described the Company's proposed LRS. *See generally* Elder Direct Testimony; Order at 3-4. On March 22, 2018, the Division of Public Utilities ("DPU") filed direct testimony from Charles E. Peterson and Robert A. Davis, both of which supported the proposed LRS sample design as being "reasonable and [] likely to produce the stated levels of precision and confidence." Order at 4 (citing Peterson Direct Testimony at lines 107-109; Davis Direct Testimony at lines 103-116). Also on March 22, 2018, Vivint filed direct testimony from Christopher Worley, and UCE filed direct testimony from Kate Bowman, both of whom recommended that the Commission not approve the LRS unless significant changes are made in the sample design and the data collected. *See* Order at 7-8. On March 23, 2018, Vote Solar filed direct testimony from Rick Gilliam. Mr. Gilliam's direct testimony likewise recommended against approving the proposed LRS due to (i) flaws in the sample design related to size and selection of the sample and (ii) the failure to acquire the data necessary for the Intervenors to carry their burden of proof as is required by the Settlement. *See* Order at 6-7.

On April 10, 2018, the Company, the DPU, the Office of Consumer Services ("OCS"), Vivint, and UCE filed rebuttal testimony. On April 11, 2018, Vote Solar filed rebuttal testimony from Dr. Albert Lee, which described in detail four fatal flaws with the LRS's sample design, each of which rendered the sample unfit for its intended use: (i) the sample is not drawn from the population of interest; (ii) more than half of the customers in the sample were originally drawn using a different sample design and standard extrapolation formulas fail to account for this difference; (iii) the sample's stratification relies on the assumed and largely unsupported correlation between nameplate capacity and generation such that the sample size may be too small to achieve a precision of plus or minus 10 percent at 95 percent confidence; and (iv) the failure to have a statistically sound plan for adding additional customers to the sample. *See* Lee Rebuttal Testimony at lines 39-50.

The Commission conducted the Phase I hearing on April 17, 2018 ("Hearing"). With respect to the sample design, Dr. Lee discussed at length his largely unopposed view that the LRS's sample design "fall[s] short of the requirements of statistical sampling" due to four primary issues: (i) the sample is not drawn from the population of interest; (ii) the sample is a product of two separate samples; (iii) the flawed assumption regarding the correlation between nameplate capacity and generation could result in the sample size being too small to achieve the stated precision; and (iv) there are no contingency plans if additional customers are needed for the sample. *See* April 17, 2018 Hearing Transcript ("Hearing Tr.") at 211:10-217:10. During the Hearing, Mr. Elder and Mr. Peterson agreed with many of the flaws Dr. Lee identified: Mr. Elder admitted he was "violating [the] rule" of extrapolation of a statistical sample, and Mr. Peterson explicitly conceded that the sample design was "statistically suspect" and cause for "some concern." *Id.* at 26:10-27:8, 98:22-99:1, 101:5-8.

Regarding the specific data to be collected, the Intervenors reiterated their need for particular information including import, export, and production data from both Schedule 135 and Schedule 136 customers, as well as system and customer characteristics. *See* Hearing Tr. at 151:12-152:3, 180:25-185:9; Gilliam Direct Testimony at lines 189-195, 200-203, 220-225, 239-248, 373-380, 490-499. The Intervenors made clear that these data sources were required for certain analyses they intended to conduct to understand the trend of export profiles over time, project future costs and benefits of rooftop solar, and ultimately sustain their burden of proof during Phase II.

On May 21, 2018, the Commission ordered the following: (i) the Company shall select new samples for residential and commercial customers; (ii) the Company shall increase the sample size to accommodate for the separate study of residential and commercial customers; (iii) the Company must collect import, export, and production data from the 36 existing Schedule 135 LRS participants; and (iv) the study period will begin on January 1, 2019 and run for 12 months. The Commission expressly declined to require the Company to make any further modifications other than those stated above. *See* Order at 19-20.[2]

The Commission's Order is premised on errors of fact including assumptions that are not supported by the record. *First*, the Commission did not direct the Company to correct each of the fundamental flaws in the sample design identified by Dr. Lee, many of which were conceded by both Mr. Elder and Mr. Peterson. Instead, the

[2] Utah Admin. Code R746-1-801(2) requires a party challenging a finding of fact to "marshal the record evidence that supports the challenged finding." A review of the Order makes clear that the only evidence relied upon by the Commission in support of those aspects of the Order which are challenged herein are the direct and rebuttal testimonies of Mr. Elder, Mr. Peterson, and Mr. Davis. Intervenors demonstrate in this Petition, however, that this evidence is profoundly flawed and unreliable.

Commission provided vague directives to the Company that even with the most liberal construction will not rectify these flaws. Moreover, the Commission did not require the Company—which committed numerous errors in its initial sample design—to present a new sample design for review and comment by all interested parties. *Second*, the Commission rejected the Intervenors' request for specific sets of data that would enable the Intervenors to sustain their burden of proof of demonstrating costs and benefits of solar energy during Phase II. The Commission not only abstained from directing the Company to collect such data, but it incorrectly stated that the Intervenors would have access to such data independent of the Company. This conclusion is unsupported by the factual record and is demonstrably false.

To rectify these issues and ensure that the Commission can ultimately comply with its obligations to determine a just and reasonable export credit in the public interest, the Intervenors request that the Commission review or grant rehearing on its Order. The grounds for this relief are more fully set forth herein.

ARGUMENT

I. The Commission Did Not Sufficiently Resolve The Concerns Raised Regarding the LRS's Sample Design.

In the Order, the Commission acknowledged that there were flaws in the LRS's sample design. Namely, the Order requires that the Company increase the sample size to "accommodate the separate study of residential and commercial customers" and to "select new samples for residential and commercial customers that either give each member of the class an equal chance of being selected, or each member of the separate strata an equal chance of being selected." Order at 19; *see also id*. at 17. The Commission also ordered that the Company "collect export, import, and production data from the existing LRS study's 36 Schedule 135 participants." *Id*. at 19; *see*

also id. at 17. However, the directives offered by the Commission fall short of ordering the Company to fix the flaws identified by Dr. Lee, and thus, the LRS's sample will remain unfit for its intended use.

First, Dr. Lee found that the sample was not drawn from the relevant population of interest—specifically, the Company intends to apply the sample to Schedule 135 and Schedule 136 customers, but it was drawn only from the Schedule 135 customers. *See* Hearing Tr. at 211:20-25; Lee Rebuttal Testimony at lines 40-43, 52-71. As Dr. Lee clearly described for the Commission, data collected from Schedule 135 customers cannot be representative of the full population of Schedule 135 *and* Schedule 136 customers; moreover, extrapolation from Schedule 135 customers to Schedule 136 customers "violates a principle of statistical sampling that all elements have a known and greater than zero chance to be selected." Hearing Tr. at 213:1-4; *see* Lee Rebuttal Testimony at lines 58-66. Since no Schedule 136 customer has a chance to be selected, "no statistical inferences can be made about those Schedule 136 customers," which is "the essential purpose of selecting a statistical sample." Hearing Tr. at 211:20-25, 213:4-8.

During the Hearing, both Mr. Elder and Mr. Peterson agreed with Dr. Lee's criticism. Mr. Elder agreed that he was "violating [the] rule" of extrapolation of a statistical sample that "each item in [the] population had to have a greater than zero percent chance of being sampled" because there is a "zero percent chance of transition customers being sampled." *Id*. at 25:20-27:8. He also admitted that even though he assumed that rooftop solar output would be similar between Schedule 135 customers and Schedule 136 customers, he had not done any comparison, and he had "no data that backs up [his] assumption." *Id*. at 27:9-23. He eventually acknowledged that Schedule 135 customers would not be representative of Schedule 136 customers

because Schedule 135 customers had different economic incentives than the Schedule 136 customers, which may drive differences in solar arrays between the two groups, and ultimately the generation profiles between the two groups. *See id*. at 27:24-28:17. Mr. Peterson conceded that applying the results of the Schedule 135 sample to the Schedule 136 customers is "statistically suspect" because "as a statistical matter," the requirements for extrapolating a sample from one population to another is that each item in the population must have had a greater than zero likelihood of selection. *Id*. at 98:15-20, 98:22-99:1, 100:11-24.

As outlined above, the Commission ordered that the Company: (i) select new samples for residential and commercial customers that give each member of the class an equal chance of being selected, or each member of the separate strata an equal chance of being selected, and (ii) increase the sample size to accommodate the study of these two classes. *See* Order at 19. However, it is unclear whether these vague directives adequately address Dr. Lee's concern regarding the improper extrapolation of data from Schedule 135 customers to Schedule 136 customers. The Order is unclear whether both Schedule 135 and Schedule 136 customers will be included in the new residential and commercial samples or solely Schedule 135 customers, and the Commission should clarify this point. Likewise, the Commission's general instruction to "increase the sample size" provides no guidance as to what the Commission believes is an appropriate sample size for each class, which, as discussed both at the Hearing and herein, is an issue of much contention. Therefore, the Commission's Order does not sufficiently address Dr. Lee's criticism.

Second, Dr. Lee stated that the final sample outlined in the LRS is statistically improper because it is the conglomeration of two separate samples drawn from two different sample designs. *See* Hearing Tr. at 212:1-6; Lee Rebuttal Testimony at lines

44-46, 73-84; *see also* Gilliam Direct Testimony at lines 181-183, 384-386. Specifically, 36 of the Schedule 135 customers were drawn from 1,578 customers, using a sampling design that was stratified by usage. *See* Hearing Tr. at 213:19-23. The remaining 34 Schedule 135 customers will be selected from 24,082 customers and stratified based on nameplate capacity. *Id*. at 24:8-10, 29:5-11, 214:9-21. Mr. Elder acknowledged that the sample of the 36 Schedule 135 customers was created using "four strata based on billed net energy usage" while the "supplemental sample of Schedule 135 users was created [] using four strata based on nameplate capacity[.]" *Id*. at 28:22-29:4.

As Dr. Lee stated, if the 36 customers from the old sample are automatically being selected, it "spoil[s] the random nature of this sample." *Id*. at 214:2-4. The Company has failed to account for this flaw in its formula—rather the LRS "incorrectly assumes the sample [customers] are drawn randomly in each strata across a population of approximately 24,000 customers"—which "violate[s] another fundamental principle of statistical sampling, that [each] element needs to be properly weighted using their probability of being selected." *Id*. at 214:4-14. Failing to correct for this issue will affect the margin of error and potentially introduce unknown bias into the sample. Mr. Elder was unaware of the basic statistical principle that Dr. Lee discussed, but he did admit that the failure to weight the items in the sample could "affect the accuracy perhaps of [his] sample." *Id*. at 29:12-31:16. Mr. Peterson was aware of the principle Dr. Lee discussed and conceded that "there is some concern about the fact [that] the 36 customers, the original 36, and the additional 34 are being sampled differently." *Id*. at 101:5-10.

The Commission ordered that (i) for residential and commercial classes, the chance of selection for an individual customer should be either equal overall or at

least equal within each stratum and (ii) export, import, and production data should be collected from the existing 36 Schedule 135 participants. *See* Order at 19. These directives do not adequately address Dr. Lee's criticism of having multiple sample designs because it is unclear whether the Company is permitted to include the data from the existing 36 Schedule 135 customers in the sample—who were selected using a different sample design—and how doing so will ensure that each customer has an equal chance of being selected. In fact, continuing to use the 36 Schedule 135 customers as part of the sample will mean that the Company cannot comply with creating a sample where the chance of selection is equal. The Commission should clarify its Order.

Third, the LRS's sample size and design is based on the use of a stratified sample which Mr. Elder claims allows the Company to create a sample size as low as 54 customers to achieve precision of plus or minus 10 percent at 95 percent confidence, whereas he states that a simple random sample would require a sample of over 4,000 customers. *See* Hearing Tr. at 215:2-11; *see also id.* at 23:6-11. The LRS sample is stratified based on nameplate capacity, and the sample itself is designed to test generation. Accordingly, the Company's stratification relies on the correlation between nameplate capacity and generation. Despite this, the Company presented only one analysis showing *any* correlation between nameplate capacity and generation, and Dr. Lee found this analysis to be deeply flawed. Specifically, Dr. Lee found that although the Company's analysis showed correlation at 0.93, this calculation was based on the 36 Schedule 135 customers. *See id.* at 215:12-21. Dr. Lee identified that 30 of these 36 customers were in the first stratum of nameplate capacity[3] and that

[3] Stratum 2 has only two customers, stratum 3 has four customers, and stratum 4 has no customers. As Dr. Lee described, "[t]hese strata do not have sufficient sample size to reliably measure correlation. Therefore, I conclude that there is insufficient evidence

the correlation for those 30 customers was only 0.68—demonstrating that capacity is not as "highly correlated with generation as Mr. Elder claims." *Id*. at 215:22-216:4; *see id*. at 38:14-39:21. Mr. Elder himself conceded that this value indicated a weak correlation, *see id*. at 216:2-4, Elder Rebuttal Testimony at lines 101-111, and also conceded that this lower correlation value for 30 of the 36 customers would "change [his] view of the reliability of the 0.93 correlation that [he] present[ed]," Hearing Tr. at 40:22-41:1.

Given that the stratification is highly suspect as it rests on an unsupported assumption about the correlation between nameplate capacity and generation, it is likely that the sample size will need to be increased to achieve the stated outcome of plus or minus 10 percent at 95 percent confidence. *See* Hearing Tr. at 212:7-12, Lee Rebuttal Testimony at lines 47-48, 86-132; Gilliam Direct Testimony at lines 433-448, 462-467. Both Mr. Elder and Mr. Peterson agreed with this assessment that, if the correlation is not as assumed by Mr. Elder, the sample size proposed in the LRS might be too small, such that it would not meet the plus or minus 10 percent threshold at 95 percent confidence that the sample was designed to meet. *See* Hearing Tr. at 103:8-104:3; *see also id*. at 25:11-15. The Commission did not address the high likelihood that the sample is premised upon an unsupported assumption regarding the correlation between nameplate capacity and generation, and although the Commission ordered the Company to increase the sample size to accommodate the separate study of residential and commercial customers, this directive in no way addresses Dr. Lee's concern that the stratification itself is deeply flawed. The Commission should review its Order to correct for this flaw.

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showing, by stratum, the strong correlation between capacity and generation." Hearing Tr. at 216:5-11.

Finally, as Dr. Lee pointed out and as Mr. Elder and Mr. Peterson conceded, the Company's sample design offers no contingency plans if additional customers are needed for the sample to achieve the required precision. *See* Hearing Tr. at 35:13-16, 36:7-9, 104:4-7, 212:13-18; Lee Rebuttal Testimony at lines 160-161. As Dr. Lee described, given how the Company has designed the sample, augmenting the sample is not as easy as simply adding new customers. *See* Hearing Tr. at 216:12-21. Despite the severity of this issue, the Commission did not order that the Company provide a statistically valid plan to select additional customers if further samples are required.

Ultimately, Dr. Lee identified numerous deficiencies with the Company's LRS—many of which Mr. Elder and Mr. Peterson readily acknowledged—yet the Commission did not order that each of these flaws be rectified. By failing to do so, the Commission has in effect sanctioned a deficient sampling plan which is inadequate for use in the LRS and will leave the Commission no choice but to either disregard the LRS's findings, or, in the alternative, to rely on the deeply flawed LRS, which will necessarily result in a flawed export credit that is neither just, reasonable, nor in the public interest, thereby exposing the Commission's ultimate decision to judicial scrutiny.

Not only did the Commission not order that the serious flaws identified by Dr. Lee be rectified, but the Commission "decline[d] to require [the Company] to make any modifications to its proposed LRS beyond the directives articulated in this order." Order at 20. Plainly, the Commission is not requiring that the Company present its revised sample design to the parties in this proceeding before going forward with implementation. However, given the Company and Mr. Elder's failed attempt to apply basic statistical principles to the initial LRS's sampling design, the parties and the Commission should have the ability to review the Company's revised LRS. Doing so

will ensure that the Company, in executing the directives of the Commission, is not committing further fundamental errors which will remain entirely unchecked until the LRS is complete, at which point it is too late. The Commission should order the Company to present its revised plan to the Commission because the failure to do so heightens the risk that the already flawed sample design will be further corrupted and amount to little more than a waste of the Company and the rate payers' time and resources.

II. The Commission Did Not Ensure That The Intervenors Will Have Access To The Necessary Data In Order To Sustain Their Burden of Proof In Support Of A Proposed Export Credit.

Throughout this proceeding, the Intervenors have consistently emphasized that "the data to be collected during Phase I of this proceeding will be the only opportunity for intervening parties to identify the customer data needed to carry their burden of proof in Phase II of the Docket." Order at 6 n.19 (citing Gilliam Direct Testimony at lines 48-50); *see* Hearing Tr. at 179:17-20. Therefore, information from all relevant populations regarding export profiles, system characteristics (tilt, orientation, and shading), and customer characteristics (*e.g.*, "behind-the-meter" data such as large appliances and house or business size) is critical: this data will help inform the parties—and ultimately the Commission's—analysis regarding the primary drivers of net exports, how net exports may change over time, and how load variability may vary between superficially similar customers. *See* Hearing Tr. at 151:20-152:3, 180:25-185:9. Understanding these trends will enable the parties to project how customer usage and patterns will change in the future and to provide valuable information in determining the costs and benefits of exported energy for future solar customers. Despite this, the Commission refused to order the Company to collect any of the additional data requested by the Intervenors.

A. The Commission erred in not requiring that certain types of data be collected and made available to the Intervenors.

The Commission did not order the Company to collect certain data that will enable the Intervenors to analyze how export trends may change over time based on a variety of factors, which the Intervenors can use to demonstrate costs and benefits of exported energy. By depriving the Intervenors of this data, the Commission is directly impacting the Intervenors' ability to meet their burden of proof during Phase II. Moreover, by failing to collect this data, the Commission is limiting the type of analysis that will be presented for consideration in Phase II as the current LRS has no ability to project what future exports are likely to look like, and thus risks setting a rate that does not correctly take into account what the true costs and benefits may be as rooftop solar evolves over time. Finally, the longer the Commission waits to rectify this issue, the more difficult it will be to collect sufficient data for all parties to consider during Phase II.

First, the Intervenors require access to import, export, and production data from all Schedule 135 and Schedule 136 residential and commercial customers involved in the LRS.[4] This data will allow the Intervenors (and the Company if it so chooses) to construct import, load, and export curves for the Schedule 135 customers and separate import, load, and export curves for the Schedule 136 customers (both residential and commercial).[5] Doing so will enable the parties to determine how these

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[4] While the Commission ordered the Company to select new samples for residential and commercial customers and found "value in parties' recommendation to treat residential and commercial customers separately," it is unclear whether the Commission was directing the Company to collect import, export, and production data separately for both the residential and commercial customers. *See* Order at 16-17.

[5] *See* Gilliam Direct Testimony at lines 226-238 ("…[T]here 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

curves change as economic conditions change. For example, grandfathered customers installed rooftop solar based upon the economics of the grandfathered net metering rate, while transition customers operate under the transition net billing rate. *See* Gilliam Direct Testimony at lines 305-331. As Mr. Gilliam noted, "[i]t is important to understand the intertemporal patterns of total and behind the meter consumption of individual customers in order to understand how representative and durable the patterns of export may be and how they might change over time." *Id*. at lines 242-244; *see also id*. at 338-340 ("It is thus very important to the future group of net billing customers to understand how the changing economics impact behavior and system size selection, ability to modify load shapes, and use of on-site storage systems."). In other words, changes that can be identified between the Schedule 135 and 136 customers can provide valuable insight into how, and more importantly, why exports change over time, which if made available to the Intervenors, can be used to demonstrate the future costs and benefits of exported energy.

As outlined in the direct testimony of Rick Gilliam, the Company proposes to collect the import and export data from the Schedule 136 customers in the LRS while collecting production data from the Schedule 135 customers in the LRS. *See id*. at lines 209-211. The Commission has ordered that import, export, and production data be collected from the existing 36 Schedule 135 customers, *see* Order at 19, however, the Commission did not require that production data be collected from the Schedule 136 customers in the LRS, or that any specific data be collected from any additional Schedule 135 customers added to the LRS. This failure prevents the Intervenors from

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understanding' based on estimates [from Schedule 135 customers] when full knowledge is possible.") (emphasis in original).

obtaining data that will enable them to analyze long-term trends in energy usage and export and thus, to assess the costs and benefits of exported energy.[6]

Second, the Company should also be required to collect data concerning system and customer characteristics. As discussed above, the Company's LRS has no ability to assess what rooftop solar exports are likely to look like in the future as technology and customer usage patterns change. Having access to these two sources of data will enable the parties to better understand customer trends, determine what is representative of the general population, and propose a suitable export credit during Phase II based on how exports are expected to change over time and the costs and benefits of such changes.

With respect to system characteristics, the Commission should have directed the Company to collect system information including, but not limited to, verified system capacity, orientation, tilt, location, and shading for both Schedule 135 and Schedule 136 customers. *See* Gilliam Direct Testimony at lines 200-203, 491-492. Understanding how different systems produce energy and how such production differences lead to exports is an important metric in understanding the costs and benefits of exports because this information can help predict how exports may develop depending on system characteristics. *See id*. at lines 231-235. Therefore, to understand the trend and better project the most appropriate export credit, the data should be

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[6] To the extent the Commission refrained from ordering the Company to collect these three streams of data for all classes of customers based on potential financial burdens on the Company, the benefits of doing so outweigh the negligible cost that may be incurred by the Company. The Company's concern about installing production meters on the Schedule 136 customers is misplaced as the Company will already be installing a bi-directional meter for these customers and can install a production meter at the same time. *See* Gilliam Direct Testimony at lines 282-287, 395-396, 406-409.

collected from both Schedule 135 and Schedule 136 customers.[7] Only by doing so can the Intervenors determine how different factors impact a customer's export profile and ultimately assess the costs and benefits of exported energy.

Finally, the Commission should have directed the Company to collect customer characteristic data including, but not limited to, employment status, number of people in the household, ages of people in the household, presence of electric vehicles, types of appliances in the household, and other "behind-the-meter" devices in the household. *See id*. at lines 244-248, 373-380, 412-413. Acquiring this data regarding the customer and their behind-the-meter consumption will help determine changing patterns over time. *See id*. at 400-401. These characteristics, especially related to new technologies that have become more prevalent in recent years, "can have a significant impact on exported load shape, considerably more than generation profiles, and can affect the value and prospective pricing." Hearing Tr. at 184:2-5. Specifically, these characteristics can affect a customer's export profile which, as described above, will provide valuable insight into how exports may change over time, and thus help assess the costs and benefits of exports. Moreover, this data can be easily collected using a simple voluntary questionnaire.[8]

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[7] If the Commission considered potential costs to the Company in its Order, those costs are inconsequential. The Company already has system characteristic data for the Schedule 135 customers as those customers were obligated to provide this information as a part of the application to interconnect to the Company's grid. If there is any question as the accuracy of the data, the Company could simply verify it during the change of the customer's billing meter. *See* Gilliam Direct Testimony at lines 491-494. With respect to Schedule 136 customers, the Company can easily collect this data when it installs the bi-directional and production meters on site at the customers' homes. *See id*. at lines 494-496.

[8] Vote Solar offered to help create such a survey for the Company, but the Company has failed to take advantage of that proposal. *See* Hearing Tr. at 185:7-9.

As outlined above, the data requested by the Intervenors is essential to understanding the trend of exported energy as technology and usage changes, and understanding these trends will enable the parties to interpret how exports evolve over time. In turn, this information will be very informative in evaluating the costs and benefits of exported energy, as it will allow a prediction of what exports will actually look like in the future. The Company's LRS does not intend to do any assessment of what exports will look like in the future, and access to this information is therefore essential for the Commission to establish a just and reasonable export credit that comports with the public interest during Phase II.

B. The Commission committed a fundamental error in claiming that the requested data is readily available to the Intervenors.

In depriving the Intervenors of the data they requested, the Commission committed two fundamental errors. *First*, the Commission erroneously assumed that the Intervenors have access to the data such that they can conduct the studies they plan to do without the Company's involvement. *Second*, the Commission incorrectly concluded that because "no legal requirement exists . . . that requires [the Company] to obtain prior PSC approval before conducting its LRS[,]" the Commission could not, or should not, create a "regulatory requirement" that the Company collect this data. Order at 18.

1. Intervenors do not have access to the requested data to sustain their burden of proof.

The Commission's Order incorrectly assumes the Intervenors might have other sources for the data they request. Specifically, the Commission stated that because at least one of the Intervenors *may* have access to its customers' inverter data, "[o]ther parties . . . also are likely to have access to inverter data," or such inverter

data "might be obtainable by the Intervening Parties by working with solar installers and their customers." Order at 19, n.64. These assumptions are incorrect and wholly unsupported by the record.

First, and most importantly, even if inverter data was potentially useful to this proceeding, Intervenors, including Vote Solar and UCE, simply do not have "access" to system or customer characteristic data of the type requested. Although one Intervenor, Vivint, *may* have access to inverter data for its customer base alone, Christopher Worley, Vivint's Director of Rate Design, made clear that he was not certain that this data could be used by Vivint for the purposes of evaluating the Company's LRS and that Vivint may not be able to legally share this data with other Intervenors, including Vote Solar and UCE. *See* Hearing Tr. at 174:11-175:10; *see also id*. at 205:2-4. *Second*, inverter data would only provide production data, not the import, export, system, and customer usage data requested by the Intervenors. *See id*. at 67:8-11. *Finally*, the accuracy of inverter-based meters is questionable compared to revenue grade meters, *see id*. at 204:21-25, especially since the Company "has never used inverter data before," and as Mr. Elder conceded, "we don't know exactly what we are dealing with[,]" *id*. at 68:1-7. Thus, despite all evidence to the contrary and the fact that Mr. Elder himself agreed that parties other than the Company "will not have access" to the data requested by the Intervenors, the Commission erroneously found that the Intervenors could satisfy their data requirements without the Company's assistance. *Id*. at 66:6-8, 89:17-25.

2. Requiring the Company to collect the requested data would not create an impermissible regulatory requirement.

With respect to the customer characteristic data, Chairman Thad LeVar voiced a concern at the Hearing that "if [the] Commission issues an order requiring [the

Company] to survey its customers, then it's basically acting . . . as an arm of the government." *Id*. at 208:12-209:17. The Commission's Order also sought to avoid creating a "regulatory requirement" that the Company collect system characteristics or customer usage data. Order at 18 ("[T]he record is also insufficient to establish that the value of that data is meaningful enough to warrant a regulatory requirement for [the Company] to collect it on behalf of the parties who desire to use the data in Phase II."). The Intervenors respectfully submit that this concern is unfounded. First, the Intervenors are simply requesting data that is easily obtainable or has already been collected: (i) production data from meters that can be installed at the same time as bi-directional meters; (ii) system characteristic data that the Company already collects for many customers and can collect or verify during the installation of bi-directional meters; and (iii) a completely voluntary survey that can be requested from the customer during the installation process. Thus, in requiring the Company to collect such data, the Commission would not be imposing a new and unsupported "regulatory requirement," or causing the Company to act as an "arm of the government." Order at 18; Hearing Tr. at 208:12-209:17. Instead, the Commission would merely be requiring the Company to collect data necessary and adequate for Phase II of this proceeding, which is in accordance with the Commission's obligation to determine an export credit that is just, reasonable, and in the public's interest. Further, Phase II of this docket will determine an appropriate export credit for future rooftop solar customers based on the information gathered during this phase of the proceeding. The Commission's ruling in Phase II of this docket will have a profound impact on many rooftop solar customers for decades to come—much more of an impact than the collection of data from a relatively small number of customers for one year. The Commission's determination of a just and reasonable solar export credit will inescapably chart the course for the future of the rooftop solar industry in Utah and individually

impact current and future rooftop solar customers. Responsible determination of a just and reasonable export credit requires access to the data requested by the Intervenors, and it is in the best interest of current and future customers (who will be subject to the solar export credit rate as determined by the Commission) to gather that data at this stage. Therefore, doing so is a proper exercise of the Commission's authority.

CONCLUSION

For the foregoing reasons, the Intervenors respectfully request that the Commission provide review or rehearing of its May 21, 2018 Order.

DATED this 20th day of June, 2018.

/s/ Jennifer M. Selendy
Selendy & Gay PLLC
Jennifer M. Selendy
Joshua S. Margolin
1290 Avenue of the Americas
New York, NY 10104
212-390-9022
jselendy@selendygay.com
jmargolin@selendygay.com
Attorneys for Vote Solar

/s/ Stephen F. Mecham
Stephen F. Mecham
10 W 100 S, Suite 323
Salt Lake City, UT 84101
385-222-1618
sfmecham@gmail.com
Utah Bar No. 4089
Attorney for Vivint Solar, Inc.

/s/ Hunter Holman
Hunter Holman
1014 2nd Avenue
Salt Lake City, UT 84103
801-363-4046
hunter@utahcleanenergy.com
Utah Bar No. 15165
Attorney for Utah Clean Energy

CERTIFICATE OF SERVICE

I hereby certify that on this 20th day of June, 2018 a true and correct copy of the foregoing was served by email upon the following:

DIVISION OF PUBLIC UTILITIES:

Chris Parker	chrisparker@utah.gov
William Powell	wpowell@utah.gov
Patricia Schmid	pschmid@agutah.gov
Justin Jetter	jjetter@agutah.gov

OFFICE OF CONSUMER SERVICES:

Michele Beck	mbeck@utah.gov
Cheryl Murray	cmurray@utah.gov
Robert Moore	rmoore@agutah.gov
Steve Snarr	stevensnarr@agutah.gov

SALT LAKE CITY CORPORATION:

Tyler Poulson	tyler.poulson@slcgov.com
Megan DePaulis	megan.depaulis@slcgov.com

UTAH SOLAR ENERGY ASSOCIATION:

Amanda Smith	asmith@hollandhart.com
Ryan Evans	revans@utsolar.org

WESTERN RESOURCE ADVOCATES:

Jennifer Gardner	jennifer.gardner@westernresources.org

UTAH CLEAN ENERGY:

Sarah Wright	sarah@utahcleanenergy.org
Kate Bowman	kate@utahcleanenergy.org
Hunter Holman	hunter@utahcleanenergy.org

VOTE SOLAR:

Rick Gilliam	rick@votesolar.org
Briana Korbor	briana@votesolar.org
Jennifer M. Selendy	jselendy@selendygay.com
Joshua Margolin	jmargolin@selendygay.com

AURIC SOLAR:

Elias Bishop	elias.bishop@auricsolar.com

ROCKY MOUNTAIN POWER:

Yvonne Hogle	yvonne.hogle@pacificorp.com

Jana Saba	jana.saba@pacificorp.com datarequest@pacificorp.com utahdockets@pacificorp.com
VIVINT SOLAR, INC.:	
Stephen F. Mecham	sfmecham@gmail.com

/s/ Jennifer M. Selendy