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BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program	Docket No. 14-035-114

SURREBUTTAL TESTIMONY OF RICHARD COLLINS

ON BEHALF OF VIVINT SOLAR, INC.

Vivint Solar submits the Pre-filed Testimony of Richard Collins in this docket.

DATED this 8th day of August, 2017.

/s/Stephen F. Mecham_____

Q. Please state your name and occupation.

A. My name is Richard S. Collins. I am a Professor of Economics and Finance at Westminster College located at 1840 South 1300 East, Salt Lake City, UT 84108.

Q. On whose behalf are you filing testimony in this Docket?

A. I am testifying on behalf of the Vivint Solar, Inc., a residential solar company headquartered in Utah with operations throughout the United States.

Q. Did you submit prefiled direct and rebuttal testimony in this docket?

A. Yes. I submitted direct testimony on June 8, 2017 and rebuttal testimony on July 25, 2017

SUMMARY OF SURREBUTTAL TESTIMONY

Q: What is the purpose of your surrebuttal testimony?

A: I address several issues of the rebuttal testimony of Rocky Mountain Power's (RMP or Company) witnesses and the rebuttal testimony of the Division of Public Utilities (the "Division") witness Stan Faryniarz and comment on the Office of Consumer Services (the "Office") rebuttal testimony. RMP attempts to minimize my Direct Testimony by taking a very limited view (their view) of the issues and reiterating their case for a new rate schedule for Net Metering (NEM) customers. RMP either takes my criticisms of their analysis out of context or misinterprets the intent of my analysis. The rebuttal testimonies of RMP do not address the true weaknesses of the Company's analysis of the costs and benefits of the Net Energy Metering program (NEM), thus the validity of my arguments still stands.

Q: What specifically are you recommending in this round of testimony?

I am recommending that the Commission reject RMP's proposal to change the NEM

program and reject the Company's request for new tariffs. The Commission should open up a new proceeding and require RMP to redo its load and production profiles with more observations and collect the data over at least two years. If the Commission is concerned about immediate issues surrounding NEM subsidization, it can put a cap on NEM participation. All parties, except the Company, believe that this docket is not the docket to set new rates for NEM customers.

REBUTTAL OF RMP'S TESTIMONY

Q: Would you provide a critique RMP's rebuttal testimony?

A: RMP has not really rebutted the essence of the testimony from the other intervenors; it has just accepted a few minor adjustments to their contention that there is a very large subsidy flowing from Non-NEM customers to NEM customers. It did not provide convincing evidence that the Commission should reject the testimony of other parties and accept its proposed rate change for NEM customers. It hides behind the Commission November 15th Order and does not adequately address the substance of the criticisms of its analysis. It insists that it is requesting this new rate schedule for residential NEM customers in order to protect Non-NEM customers and fails to acknowledge its real concern of lost future profits that a robust NEM program will cause. RMP insists that if its recommendations are adopted by the Commission there still will be opportunity for its customers to invest in distributed generation and the solar industry will not be substantially harmed. This is in contrast to the evidence on the record from both local and national solar installation providers who state that RMP's proposed changes to the NEM program will have devastating impacts on their business. The Company in essence asks the Commission to ignore what happened in Nevada when a similar NEM tariff was

adopted.

JOELLE STEWARD

Q: Ms. Steward tries to rebut your testimony that transformer costs should not be included in a customer charge for NEM customers. Would you please critique her rebuttal?

A: Ms. Steward calls my testimony misleading and refers to Mr. Marx's testimony that NEM customers can actually lead to higher distribution costs. I will address Mr. Marx's comments later in my surrebuttal, but Ms. Steward provides no additional information on why the Commission should deviate from its longstanding policy to only include directly related customer costs in the customer charge. She shows that transformer costs are higher for NEM customers, but does not acknowledge that in most instances any higher transformer costs are paid directly by NEM customers when they sign up for service. The Commission should reject the Company's proposal.

Q: Ms. Steward rejects your recommendation to adopt a higher minimum bill as opposed to a larger customer charge, could you please respond?

A: Ms. Steward opposes a larger minimum bill because she believes it will not raise enough revenue. However, if revenue was the problem, the Company could come in for a rate case to raise revenues, but it has declined to do so. Her argument is therefore spurious.

Q: Ms. Steward disagrees with the other intervenors that a demand charge for residential customers is inappropriate. Does she provide support for her position?

A: No, she provides little or no support. She cites other intervenors' testimony as support that other utilities have expressed interest in demand charges for residential customers. But, in every case, the intervenors are showing examples of how other utilities are either

trying to structure rates to discourage distributed generation or how commissions have ruled that demand charges for residential customers are inappropriate. Her reference just furthers the support of the finding that demand charges are inappropriate for residential customers and NEM customers in particular. She cites that Arizona Public Service has had voluntary time of use demand and energy tariffs for decades. It should be noted that the TOU rates are voluntary, RMP's proposal for NEM customers is mandatory. She falsely argues that a demand charge would not have any impact on energy efficiency as cited by many intervenors. She argues that a demand charge would encourage a different type of energy efficiency that would curtail use of multiple electrical devices at the same time. However, there are few if any technologies on the market that would provide residential customers a way to control the use of multiple electrical devices at the same time and until such conservation measures are economically available, her argument is simply false.

Q: Ms. Steward argues that the switch to RMP's three part tariff would not produce an unacceptable increase in a customer's bill, do you care to comment?

A: Ms. Steward makes no argument that bill will have large increases; she just states that it is acceptable because she thinks she can justify it based on costs. The cost issue is a major point of contention in this proceeding, but from the customer's perspective a large bill increase for using the same amount or less energy is unacceptable.

ROBERT MEREDITH

Q: What was Company witness Robert Meredith's objections to your direct testimony?

A: Mr. Meredith expressed a number of objections and criticisms to my direct testimony; I will try to address them each individually.

Q: Mr. Meredith objected to your reference to the 2015 IRP as evidence that the NEM program can provide future benefits to RMP's customers, do you agree with his objection?

A: No, he merely states that the IRP scenarios take into account benefits and costs that occur over a 20 year planning horizon and do not comport with the Commission's one year test year framework. He states the IRP sensitivity runs were not designed as a net benefit analysis because they do not take into account the "costs" of bill credits that the Company uses in its CFCOS analysis. As I have stated in my testimony and has been repeated in other intervenors' testimony, the bill credits associated with energy consumed by NEM customers are a phantom cost. The bill credits are lost revenues to the Company; they are not explicit costs. It may be a "cost", i.e., lost revenue, to the Company but not to its ratepayers. The IRP is designed to evaluate different policy options and investments that could be made by RMP to provide reliable service at the lowest cost and risk. Given that risks are inherently uncertain it is prudent to evaluate many different scenarios to see which provides the best results. The higher penetrations of NEM are modeled as a load reduction, but that is precisely what the program does, it reduces the load that the Company must provide. Mr. Meredith alludes to some of the uncertainties of the projections of benefits and costs by comparing the 2015 acknowledged IRP with the recently submitted 2017 IRP. However, he fails to acknowledge that in both IRPs there are substantial benefits associated with higher distributed generation programs. In both cases there are lower present value revenue requirements and these reductions in costs are significant; they dwarf the exaggerated cost shifting by over at least an order of magnitude. Mr. Meredith merely recites that the

estimates of the costs per MWH of the 2017 IRP drop from the 2015 IRP. In public meetings, the Company has acknowledged that the Commission analytical framework of a single test year does not capture the long run benefits of the NEM program, but Mr. Meredith does not provide any evidence or arguments as to why a cost benefit analysis should restrict its analysis to one year other than the Commission orders it to do so. This is of the essence of my argument. The analytical framework of the one year test period is fundamentally flawed and at the very least the Commission should first consider the impact of the NEM program over the long run before its makes short run changes that could negate these long run benefits of the program.

Q: Mr. Meredith questions your adjustment for removing the bill credits associated with behind the meter consumption of self-generated power. Please comment.

A: Mr. Meredith objects to the removal of bill credits from the cost of service analyses performed by RMP. This objection implies that the Company can characterize as a cost any measure that reducing the consumption of energy via energy efficiency or distributed generation and assign that "cost" to that class of customers. To extend his logic to other situations, the Company would want to know if customers screwed in a more efficient light bulb to reduce their energy consumption, and in a cost of service study charge this as a "cost" to those customers who engage in energy efficiency. The Commission has never allowed the Company to categorize lost revenues as a cost and it should not do so now.

Q: Mr. Meredith claims your removal of bill credits as a cost to be assigned to NEM customers ignores the compensation for exported energy. Is this true?

A: No, he mischaracterizes my position. I have only removed the bill credits associated with

self-generated energy that was consumed behind the meter. I have taken the Company's estimate of the average amount of self-generated power that was consumed by the NEM customer and made adjustments to my bill credit removal to account for this average usage of NEM production. The netting and banking of energy credits does cause the need for more refined analysis, but to adopt the Company's position is tantamount to charging residential customers for reduction in usage as a cost to serve them. This battle was fought and won many years ago with energy efficiency. The only response of the Company charging for consumption of self-generation is that it is consistent with the Commission's November 15th Order without any explanation as to why.

Q: The witness claims that your adjustment for redeployment of meters is incorrect, will you please comment.

A: If Mr. Meredith is correct in his statement that the cost that they listed for the bi-directional meters is truly an incremental cost and they did consider redeploying the meters, then the adjustment should not be made. I have not been able to independently verify the Company's claims. Mr. Meredith claims that they made an adjustment for materials costs of $31.81 for a standard residential meter, but he does not explain if this is the salvage value or the cost of a standard meter. I am confused about his testimony in that he states that my adjustment should be rejected because it includes labor costs. If the actual cost of a bi-directional meter is $162 then my adjustment which explicitly estimates the reduction in costs of redeployment and salvage should remove the labor costs. The cost of the meter should be adjusted by $31.81 so instead of $107 for a new bidirectional meter the cost should be $130.19.

Q: Mr. Meredith also claims that your comment on including fully loaded costs of the

engineers reviewing NEM applications is inappropriate. Please comment.

A: Mr. Meredith states that there were over 3000 hours recorded in their cost of service analysis for engineering review and that a full time employee works only 2080, so fully loaded costs are justified. If an engineer is working full time on the review of NEM applications only, then I would agree. But engineers are salaried employees and there are other functions that engineers perform. Work on NEM applications does not lead to additional costs unless another employee is required.

Q: Mr. Meredith claims that efficiency gains through "learning by doing" although theoretically correct should not be included in the estimate of cost for administering the applications of NEM participants. Future plans for automating the application process should also be ignored. Please comment.

A: I appreciate that he agrees with me in concept. But his argument that such efficiency gains would not likely take place within the test year and should not be included in the calculation of engineering costs is wrong. While I cannot make an exact estimate of the cost reductions that will occur, I do believe they will occur during the test period. The Company did state that they plan to automate their application process so at the least the Commission should recognize that the engineering cost estimate is a maximum value and most likely will be lower and future automation will eventually occur. The Commission should take that into account in their overall calculus.

Q: Mr. Meredith states that your concern about the analytical framework for evaluating the benefits and costs of the NEM program is incorrect and should not be considered in this phase of the docket. Could you please respond?

A: I argue that the Commission has adopted an inappropriate analytical framework for cost

benefit analysis because it has constrained the analysis to one year. They have confused cost of service methodology for regulating utilities with a component of this analysis which is the cost of service allocation part of a rate case which looks at how to divide the costs of producing electricity, i.e., the revenue requirement amongst the different class of customers. I argue that the impact on revenue requirements cannot be adequately evaluated without considering future benefits. His argument is simply a tautology: RMP's analysis is correct because they follow the Commission's prescription without addressing the issue that the Commission's analytical prescription has flaws. I simply want the Commission to be cognizant of this flaw and be judicious in its decision. The NEM program does not have immediate problems that require that the Commission make rash decisions based on faulty premises. It can take an approach that will address the issues surrounding the NEM program and potential cross-subsidization in a timely fashion when more information is forthcoming in the next couple of years.

Q: Mr. Meredith defends the Company's load research and solar production study as statistically valid under the minimum industry standards for load studies. He states that I criticize the load research sampling because it may not have enough data points for each strata of usage. Would you please respond?

A: It appears that Mr. Meredith misinterprets my concerns about the study. I am concerned about both studies because with a stratified analysis more data points are required than with a non-stratified analysis. These studies provide the basis for estimates of NEM customers' loads and production capabilities and thus provide the foundation for estimating the billing credits. These billing credits are by far the biggest cost component of RMP's CFCOS study. It is these estimated inputs that most contributes to RMP's

conclusion that NEM customers are being subsidized by other customers. The studies take observations from different counties and also try to stratify the data by usage levels. With stratified studies that are also segmented (in this case by area, i.e., counties), the correct technique to insure statistical accuracy is to have a data point or observation of each strata for each area. A correct study would have an observation of each usage level for each county. The study does not come close to meeting this criterion for a valid stratified statistical study. Mr. Meredith admits that there were some counties that had one or no observations. A study that meets the minimum of industry standards does not have the evidentiary weight necessary to warrant a major policy change that will affect not only NEM customers and the solar industry in Utah, but future ratepayers.

Q: Mr. Meredith criticizes your testimony on the added value that the NEM program will have on reducing peak loads and freeing up capacity to be sold on the market. He says that you confused Mr. Marx's testimony with Mr. Meredith's testimony and the assumption that the Company reduced its system peak by 7% is incorrect. Please respond.

A: In response to the use of the 7% assumed peak reduction, we did confuse Mr. Marx's testimony and Mr. Meredith's testimony. Through the collective RMP testimony there are numerous comments that the rooftop generation of NEM customers has little impact on reduction of peak demand. As cited in our original rebuttal testimony, this includes the following:

"This solar generation often does not coincide with the Company's peak load, thus only minimally reducing that load. Company witness Mr. Marx testifies that a net metering customer's peak production occurs during the spring months while their peak load, and

that of other customers occurs during the summer months ".[1]

"In addition, because peak solar generation often does not coincide with the time of the Company's peak load, net metering customers' private generation systems have only a modest ability to reduce peak load."[2]

"The peak energy output of these solar systems occurs in the middle of the day prior to the timing of both the system and class level peaks. As a result of this output, the energy requirements for these customers are reduced, but the peak demand is either unchanged or reduced very modestly."[3]

"My testimony demonstrates that rooftop solar generation does not reduce the peak demand on the distribution system to a degree that could warrant a reduction in infrastructure."[4]

However, the actual quantification of the amount of peak reduction was not noted in the Company's original testimony. As such, we used the 7% reduction per Mr. Marx's testimony as a proxy for the "minimal" reduction in peak load actually modeled by the Company.

In its 'Capacity Contribution of Private Generation' calculation submitted with rebuttal testimony, the Company calculates a capacity contribution percentage of 24.0% for NEM generation. However, Mr. Meredith did not explicitly say whether that number was used in his analysis. Furthermore this estimate remains much lower than other estimates of the capacity value (or peaking shaving capability) of solar PV resources. For instance, in its "Solar Energy and Capacity Value" fact sheet (September 2013), NREL states that "in

1 RMP Compliance Filing, page 13 (Discussion, section B)
2 RMP Compliance Filing, page 9 of direct testimony of Gary W. Hoogeveen, lines 192 - 196
3 RMP Compliance Filing, page 19 of direct testimony of Joelle R. Steward, lines 346 - 350
4 RMP Compliance Filing, page 2 of direct testimony of Douglas Marx, lines 27 - 29

the western United States, the capacity value of PV plants can be in the range of 50% to 80% of their alternating current (AC) rating…". NREL also lists several specific studies which had capacity values ranging from 20% to 78.3%, with most in the range of 40 – 60%.

Table 1: NREL-Cited Studies on Capacity Value of Solar PV Resources[5]

Utility District Studied (Authors)	Summary of Methodology	Reported Capacity value
Arizona Public Service (APS 2013)	Performance data from installed system in service territory, load profiles from 2003 to 2007; single-axis tracking; deployment projections for 2015; ELCC simulations for existing capacity and next 100 MW built	45.9%–48.4%
Nevada Energy (Lu et al. 2012)	Nevada Energy southern system generation fleet in the 2007 study year; ELCC calculation using LOLE of 1 day in 10 years	57.4%
Nevada Power (Perez et al. 2008a)	Satellite-derived resource data to simulate output; simulated 2% PV deployment; 30° SW-facing fixed systems; ELCC calculation	71%
New York ISO (Perez et al. 2009b)	South-facing fixed slope; ELCC calculation for simulated 2% PV grid penetration using 2007 generation and load data	44.3–78.3%
Portland General Electric (Perez et al. 2008a)	Satellite-derived resource data to simulate output; simulated 1% PV deployment; 30° SW-facing fixed systems; ELCC calculation	31%
Public Service Colorado (Xcel 2013)	2009-2010 historic load and solar generation; single-axis tracking; ELCC calculation using LOLE of 1 day in 10 years	41%–47%
TriState (TriState 2010)	LOLP method, with expected capacity availability during peak load hour; unclear assumptions for generation and load data	20%–57%

If we assume an incremental net peak shaving for NEM customers of 13.9% (based on: (1) 37.9% capacity contribution of fixed tilt rooftop solar capacity per the Company's 2017 IRP, which is the low end of the range in the table shown immediately above less (2) 24.0% contribution modeled), the resulting impact is a reduction of the NEM subsidy (due to shift of demand-based costs) of approximately $241K[6].

DOUGLAS MARX

5 NREL, Representation of Solar Capacity Value in the ReEDS Capacity Expansion Model, March 2014
6 This assumes that NEM Schedule 001 peak load is reduced by 13.9% and total (NEM and non-NEM) Schedule 001 peak load remains constant with original NEM Breakout case.

Q: Mr. Marx states that several intervenors either do not understand the engineering principles of the distribution system and/or rely on "myths" in order to criticize his testimony. He states that your testimony is only true in limited instances. How do you respond?

A: Mr. Marx criticizes Dr. DeRamus for exaggerating the amount of avoided line losses that distributed generation will provide to the system. He states that "only in limited situations when the neighbors do not produce solar energy (as they could be producing excess at the same time) or when the neighbor's load is sufficiently high enough to require the full amount of excess energy" is there no line losses. Yet he fails to recognize that currently there is less than 2% of the residential customers that are providing distributed generation. His concerns are really only relevant when there are very high levels of NEM participation. He seems to think that there will be no line losses only if the electricity flows to another customer on the same transformer. However, the electricity will flow to the nearest user and distributed generation will avoid the line losses that exist for energy that is generated miles away, sometimes thousands of miles. Many times generation sources located at the end of a distribution system can stabilize voltage levels and provide other advantages to the distribution system.

Q: Mr. Marx states that you misrepresent his testimony in a number of instances for example, when you state on line 737-738 of your direct testimony that he inferred that "in May the maximum exported power could be as much as 50% more than the maximum imported power in July." Did you misrepresent his testimony?

A: No, I did not. His testimony states:

To handle the higher level of energy flow experienced in the spring months, the

local distribution system must be sized to accommodate the greater of the two values. Consequently, the system may be sized up to 30 percent greater than normal. In a few cases, the reverse power flow could approach 50 percent more as compared to the customers' peak load demand.7

Given that May is a spring month and July is usually when the system peaks, I don't know how this misrepresents his testimony. He is merely quibbling about semantics; the real issue is that he is exaggerating the impact that NEM customers have on the distribution system. Whether he claims that NEM usage requires a 30% increase in capacity design or that flows can be 50% greater than inflows, the tenor of his testimony is that there is no savings to peak demand from NEM production for the distribution system. This ignores the results of the Company's own studies. When I rebutted this contention with my testimony that if "one or two customers on the transformer are non-NEM customers or less than full zero net energy customers, then the exported power from the NEM customer will simply negate the inflow of power to the non-Net metering customers."8 He claims that is only true under very limited parameters. He is assuming that there will be frequent cases where there are multiple zero-net users on the same transformer or that other customers will not absorb the excess power. But again, he fails to recognize the limited number of NEM customers on the system and the Company provides no information that NEM customers are highly concentrated on any one transformer.

Q: Mr. Marx rebuts your testimony concerning the lack of recognition of the possible reduction in future upgrades of distribution equipment. Do you care to respond?

7 RMP Compliance Filing, page 4 of direct testimony of Douglas Marx, lines 73-77.
8 Collins direct testimony lines. 741-744

A: Mr. Marx does not deny the possibility that NEM customers could reduce the need for upgrading transformers and distribution equipment. He appears to be playing semantics again, this time with the word "may". In my direct testimony9, I state that given the results of the Company's two distribution modeling studies that finds that distributed generation reduces peak demand on circuits by 7%, "it may delay the need for future upgrades to the circuits." He states this is very ambiguous as he is uncertain what "delay the need" means and then contends that "may" is the key operative word and goes on to state that given many uncertain events such as increased load, shifting usage characteristics and changes in spring or fall solar generation, it "may" lead to an *increased* demand on the circuit. I was merely showing that his assertion that NEM will cause the need for upgrades is untrue in most circumstances and it contradicts the Company's own studies that show NEM reduces peak demand on the distribution system by 7%.

MICHAEL WILDING

Q: Mr. Wilding questions whether the capacity value of the NEM Program can be valued using the California Pubic Utility Commission resource adequacy ("RA") process. Please comment.

A: With regards to the Company's assertion that the CPUC RA process cannot be used to value the capacity of the NEM program, we note several points. First, California relies heavily on energy and capacity from resources located outside the CAISO, including hydro-electric generation from the Pacific Northwest, gas-fired combined cycle generation in the Desert Southwest and, more recently, renewable resources located

9 See Collins Direct Testimony lines. 746-750

outside the state to support CAISO demand for energy and capacity, as well as state renewable portfolio standards. Therefore, if a resource is located outside the state but can generate into CAISO—presumably with available firm transmission capacity, which RMP has (and subject to CAISO-defined resource adequacy import capability)—it can qualify as a capacity resource and receive associated capacity revenues. Further, although RMP does not "control" the dispatch of the NEM capacity, it nonetheless creates additional capacity available at facilities RMP does control that can be monetized. RMP has not historically bid its resources into the CAISO, likely due in part to a lack of financial incentive under its regulated rate structure. However, although there is a process to get resources qualified as capacity under the CAISO RA process, the potential to create capacity value by doing so exists, as a result of additional excess capacity created by NEM resources.

CRITIQUE OF THE DIVISION'S REBUTTAL TESTIMONY

Q: Division witness Mr. Faryniarz criticizes both yours and Dr. DeRamus's testimony recommending the removal of the bill credits from both the CFCOS and the NEM breakout studies because it does not include the costs associated with the NEM program.10 Please respond.

A: Mr. Faryniarz states that under traditional utility regulation a utility is not entitled to recover lost revenues. I agree with this statement whole heartily. However, he does not explain why energy that is self-generated by NEM customers and consumed on their premises is not lost revenue. He claims that my analysis removes the revenues associated with bill credits but does account for costs. That statement is simply not true. I explicitly

10 See Faryniarz rebuttal lines 930-941

account for costs by removing from RMP's analysis the net power costs associated with the generation that is consumed at the home.11 One must remember that the Company estimates the total production of electricity from the NEM program and deems that a cost to the system, i.e., the bill credit. They then offset this cost with the benefit of a lower Net Power Cost (NPC). Dr. DeRamus and I argue that NEM generated energy consumed by the NEM customer is not a cost, it is simply lost revenue. It should not be included in the analysis. Utilities' energy efficiency programs do not include lost revenues as a cost when evaluating such programs. He further tries to buttress his argument with the statement "By only removing the lost revenues from onsite generation without any adjustment to the avoided costs, Dr. DeRamus and Mr. Collins essentially assume that a utility can achieve reduced net power costs from reduced load without any loss of revenues, which does not make sense." He appears to misinterpret my intent of this adjustment to the CFCOS. As he has acknowledged lost revenues should not be recovered by the utility, I removed the bill credits associated with lost revenues by removing all bill credits and then adjusting those bill credits to explicitly deal with the energy costs associated with energy consumed behind the meter. I also adjusted for changes in interjurisdictional allocation benefits. I did not assume that the utility can reduce net power costs with no loss of revenues, although that is certainly possible for a utility to reduce its power costs without affecting revenue. For example, if wholesale power prices drop and the utility can buy power cheaper its revenues will not be affected. I tried to do exactly what he suggested which was to analyze scenarios with and without exported power.

11 See Collins Direct lines 574-580

Summary of Surrebuttal Testimony

Q: Can you summarize your surrebuttal testimony?

A: The Commission should reject the Company's proposal to change rates for NEM customers. It should make a finding that a three part tariff with a high demand charge is not suitable for residential customers whether they participate in the NEM program or not. The Commission should immediately open another docket that will determine how the NEM program should evolve and set up a procedure to determine the value of exported power that comes from NEM generation to the grid. The Commission should make a finding that the IRP process has recognized the potential benefits of reducing future loads and that self-generation by customers is a very viable way to achieve this. The Commission should order that Company to perform a new load and NEM production profile study that includes a large enough sample to insure valid statistical results.

Q. Does this conclude your surrebuttal testimony?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on August 8, 2017, I sent a true and correct copy of the pre-filed surrebuttal testimony of Richard Collins for Vivint Solar, Inc. in Docket 14-035-114 by email to the following:

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