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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 THOMAS PLAGEMANN FOR VIVINT SOLAR, INC.

August 8, 2017

Submitted on behalf of Vivint Solar, Inc.

/s/Stephen F. Mecham

Q. Please state your name and business address.

A. My name is Thomas Plagemann. My business address is 1800 West Ashton Boulevard Lehi, Utah 84043.

Q. For whom are you testifying in the proceeding?

A. Vivint Solar, Inc. ("***Vivint Solar***").

Q. Have you testified previously in this proceeding?

A. Yes, I previously filed direct testimony in this docket on June 8, 2017 and July 25, 2017.

Q. What is the purpose of your surrebuttal testimony?

A. The purpose of my testimony is to rebut certain aspects of rebuttal testimony filed by Rocky Mountain Power (the "***Company")***, the Office of Consumer Services (the "***Office***") and the Division of Public Utilities (the "***Division***").

Q. Please provide a summary of the items discussed in this testimony.

A. A summary of the items addressed in this testimony are as follows:

i. Response to sections of the Company's and the Office's rebuttal testimony;

ii. Potential impact of the joint proposal[1]("Joint Proposal") from the Office and Division;

iii. Grandfathering of net metering ("***NEM***") customers; and

iv. Export credit rate and netting period for transition customers.

REBUTTAL OF MICHELLE BECK FOR THE OFFICE

Q. What was Office witness Michele Beck's objections to your direct testimony?

[1] The Division and the Office submitted a joint settlement proposal with their rebuttal testimony to which Dan Black and I respond in our surrebuttal testimony.

A. Ms. Beck, in her rebuttal testimony beginning on line 246, asserted that the Commission should not consider the costs that a customer incurred in investing in rooftop solar in evaluating the Company's rate proposal in this proceeding.

Q. Do you agree?

A. No. Utah residents had a reasonable expectation on the enduring applicability of the NEM program through consistent and repeated actions of the legislature and the Commission in adopting policies that encouraged and enticed Utah residents to participate in NEM. Principles of gradualism have previously been applied by this and many other commissions when looking to make changes to its net metering policy or other sweeping changes in pricing or cost recovery methodologies. The same should apply here to any changes to the current NEM program. Gradualism ensures that there is a glide path and the gradual implementation of a new rate design, which allows future solar customers and the solar industry time to adapt and avoid rate shock. If Rocky Mountain Power's three-part proposal is adopted, it would shock the market as it is an aggressive departure from prior policies the state has built over the last 15 years. The cost of a customer's investment in a rooftop solar system, as outlined on lines 147-167 of my direct testimony, is a crucial element in understanding how such a radical departure from prior policy would affect the market. Changes to net metering do not occur in a vacuum and have real world impacts which are important to understand.

REBUTTAL OF THE COMPANY

Q. How would you respond to the Company's assertion that this proposal is not an attempt to eliminate customer choice in Utah?[2]

A. I strongly disagree. The Company's proposal, whether intentional or unintended, will eliminate customer choice in Utah. Having meaningful customer choice in Utah requires that (1) customers are able to choose rooftop solar as a cost-effective means to produce their own electricity; (2) the solar industry must be able to survive and continue to offer solar systems to customers; and (3) rooftop solar provides value to customers and other residents of Utah. Under the Company's proposal none of these will be true. If the Company's proposal is adopted by this Commission, then Utah residents and businesses will have no viable option for rooftop solar technology – meaning the Company will have effectively eliminated customer choice.

Q. Are the job benefits of large-scale solar projects and residential solar interchangeable as Mr. Hoogeveen suggests?[3]

A. The Company treats the job benefits for residential and large-scale projects as if they are equal, when in fact they are very different. Large-scale projects are often developed by out-of-state companies, and the jobs they "create" are temporary to construct the project. Most of the large solar projects that the Company purchases power from went online in 2015, and thus provide little to no current job benefits to the state of Utah. Compare that to residential solar jobs which will exist as long as solar remains viable in the state and provide continuous employment. While both large-scale and residential solar can provide

[2] Mr. Hoogeveen's Rebuttal Testimony, lines 99-100.
[3] Mr. Hoogeveen's Rebuttal Testimony, lines 49-60.

jobs to the state of Utah, they should not be seen as equal in terms of magnitude or duration.

Q. The Company states "average private generation customer currently receives approximately $400 per year in subsidies (including administrative, engineering, and metering costs) from other customers."[4] Is this misleading?

A. Yes. The $400 per year in subsidies, especially in this context, is very misleading. The $400 ($377.83 according to the Company's filing) includes one-time costs that are not applicable to assess on an ongoing basis, specifically the engineering, interconnection administration, and meter fees. Removing the metering and engineering costs brings this purported "subsidy" (according to the Company's flawed[5] analysis) to $268.34 per year. This is significantly less than the $400 per customer per year figure quoted by Mr. Hoogeveen. For perspective, in the 2015 test year with 4,390 NEM customers, the $268.34 ends up being less than .2% of all residential revenues.

Q. The Company states the proposal "seeks only to stop one group of customers from shifting a portion of their costs to a different group of customers"[6] and that this is not to protect their bottom line, do you agree?

A. Absolutely not. The argument that this is purely about cost-shifting within a customer class requires a willful ignorance of the context of the relationship between distributed generation and the Company. The Company is not trying to eliminate cost-shifting between all of its customers, just the "one group of customers" who happen to provide

[4] Mr. Hoogeveen's Rebuttal Testimony, lines 66-68.
[5] Please see Rich Collin's pre-filed direct testimony, June 8, 2017, lines 584-88.
[6] Mr. Hoogeveen's Rebuttal Testimony, lines 89-90.

less revenue for Rocky Mountain Power. This is clearly an attempt to protect the Company's bottom line and kill competition by creating a significant financial disincentive for customers to invest in distributed generation. High usage customers, who are more likely to be interested in distributed generation according to the Company's analysis, subsidize low usage customers under current residential rates. Likewise, most customers living in apartments, condos or townhomes, or those customers that reside in their home only during part of the year, are subsidized by other ratepayers. This is the nature of ratemaking. This specious argument by the Company talking about "subsidies" and "cost shifts" is merely their attempt to ensure that these high-use customers continue to purchase electricity from them, and not invest in solar. They do this by eliminating any economic incentive to invest in rooftop solar, and killing the Company's competition in the process. If this proposal were part of a broader overhaul of utility rates to minimize all forms of cross-subsidization, the Company's argument that this is all about cost-shifting could be taken more seriously. Instead, this is nothing more than an attempt to kill customer choice and competition.

Q. The Company continues to assert demand charges are appropriate to incorporate into residential rate design, and "are a more appropriate, economic price signal than tiered energy rates."[7] Do you agree?

A. No. Demand charges are not defensible as a rate design tool for residential customers. As outlined in my direct testimony on lines 96-113, demand charges are standard in commercial and industrial ratemaking design, where the ratepayers are larger, with higher

[7] Ms. Steward's Rebuttal Testimony, lines 334-35.

average peak usage, are more sophisticated, and are better equipped to manage such rate structures. However, demand charges are almost unheard of in residential rate design, despite utility companies' repeated attempts to implement them. Further, we take serious issue in applying demand charges to a segment of the residential class that is investing in energy conservation measures, such as rooftop solar customers.

Q. The Company implies that Vivint Solar implicitly acknowledges that equating the export credit to the retail rate is problematic.[8] Is this true?

A. No, this is not true. In an effort to find a settlement with the Company and other parties, Vivint Solar proposed an alternative rate proposal, and recommended that, if the Commission found modification to the current program is necessary, changes should be made to the export compensation. Vivint Solar has not and does not acknowledge that equating the export credit to the retail rate is problematic, and believes any change outside of a mutually agreeable settlement is premature until a full proceeding which accounts for the long-term benefits of export distributed generation is completed.

Office and Division's Joint Proposal

Q. How would the Joint Proposal from the Office and Division impact residential customers within the State of Utah?

A. Purchasing or financing a solar energy system is a significant financial decision; one that is not without many risks beyond the regulatory rate regime. Other than their home, and depending on the size and cost of the system, it may be one of the most expensive purchases a customer makes in their lifetime. The high end of the grandfathering and

[8] Ms. Steward's Rebuttal Testimony, lines 626-30.

transition periods offered by the Division and Office, with the fixed export credit rate of 9.79 cents, are barely adequate with fundamental principles that are required to support long-term infrastructure investments relied on in the capital markets for financing.

Echoing previously filed testimony, even under a retail NEM scenario, a typical solar customer does not save money by installing a solar energy system in the first 12 years of their investment. Depending on the locational direction of that customer's roof or fluctuations in the solar energy system purchase price, the number of years may be even higher. Many NEM customers make their long-term investment with an expectation that they will achieve an adequate benefit from their solar system investment over its 30-year useful life, and often savings are more heavily weighted to the back-end of the solar energy generation asset's life, after the investment cost has been amortized and the customer is receiving power with no incremental payments. In such a scenario, even with 20 years of grandfathering under the current regulatory regime (retail NEM), a NEM customer is exposed to significant uncertainty in the final years of the asset's useful life, specifically during years 21 through 30.

To support the Joint Proposal, and allow the residential solar industry to continue to exist, albeit deeply diminished, within the state, existing DG customers must be grandfathered beyond the upper limit of the Joint Proposal, until at least January 1, 2036, and "transition" DG customers must receive at least 15 years of certainty regarding their export compensation rate.

Q. Why is it necessary to grandfather existing DG customers?

A. Compared across the country to more mature solar markets, Utah's solar market has a very low level of penetration and is still in its infancy. Most of the installations within the state have occurred within the last few years. However, these customers relied on years of precedential policies of this Commission and the State which encouraged retail NEM, to invest a significant amount of money, expecting a return on their investment through stable and favorable NEM policies.

Since 2002, when Utah's legislature enacted the NEM program, the state of Utah, either through its legislature or this Commission, has continued to encourage Utah residents to invest in and install solar energy systems. In 2007, the state legislature, through SB 223, adopted a $2,000 state tax credit for any resident who installs a solar energy system. In 2009, the Commission chose to increase the NEM cap from 0.1% of 2007 peak demand to 20% of 2007 peak demand, a clear signal to the market that NEM was encouraged. Additionally, the 2009 order specifically stated, "whatever cap we select is not a target or a goal, rather it is simply a point at which the utility may discontinue the net metering program *going forward*"[9] (emphasis added). Even the Company offered the "Utah Solar Incentive Program" to Utah residents who net metered until 2015.

The purpose of each of these policies was to support and encourage customers to make a long-term rational financial decision to invest in a solar energy system. Enticing customers to invest in a solar energy system with policies that make the investment economically viable over a 20 or 30-year horizon and then dramatically altering the regulatory regime without adequate grandfathering is not just, reasonable, or in the public

[9] Utah Public Service Commission Order, Docket No. 08-035-78, issued February 12, 2009.

interest. It was not until the most recent 2017 legislative session that solar policy within the state was scaled back as the renewable energy system tax credit was ultimately changed. Even then, however, tax credits for the purchase of a solar energy system do not phase out completely until 2022. Rewriting NEM rules in the middle of that 30-year investment, when NEM was enacted to incentivize rooftop solar investment, is akin to yanking the rug out from under these customers. Any effort to revoke, reverse, or substantially amend the rules established to incentivize solar infrastructure investment is inherently anti-business and has the potential to stunt private investment. Private investors, who are taking the risk of residential class rates changing, were clearly incentivized to construct and operate a rooftop solar energy system based on the bargain struck when the NEM rules were implemented. To be clear, the Utah government created, promoted, and expanded the NEM program causing Utah residents to spend millions of dollars in rooftop solar systems and private investors to contribute millions of dollars in capital to the state. If this Commission dismantles the NEM program and does not take into account such customers' significant and long-date investments, it will inflict significant harm to these Utah residents, the financial industry, and the overall economy in Utah. Therefore, grandfathering customers for less than 20 to 25 years would (i) be against the public interest, (ii) be anti-private investment, and (iii) expose NEM customers to the potential of a stranded investment by hindering a NEM customer from recouping and benefiting from their 30-year solar investment. The Commission should ensure that NEM Customers remain on the rate regime that existed at the time the NEM customer made their long-term investment.

Q. Why is it necessary to ensure transition customers receive a certain export rate for 15 years?

A. With the useful life of a PV system exceeding 30 years, 15 years represents only roughly half of the life of the asset. Even with that term length, a 15 year transition period presents an incredible amount of uncertainty for transition customers when determining the potential economic benefits of their system. These transition customers are already making a gamble based on the outcome of the export rate proceeding, and to provide them with less than at least 15 years of certainty would likely lead to a situation where few, if any, customers would choose to invest in a distributed generation system. After the export rate proceeding is concluded, customers will have certainty regarding the go-forward export credit methodology and a set export rate and will be able to make an informed decision. Transition customers that invest in rooftop solar over the next few years will not have this level of knowledge, which requires a longer period of time of certainty to offset the uncertainty of the remaining 15 years. A transition without some level of certainty would not be a transition, but rather a cliff for Utah residents and the solar industry. Even with 15 years of export rate certainty, the remaining uncertainty will have a very significant impact on the value proposition of distributed generation.

Q. The Joint Proposal envisions netting over 15 minute intervals. What challenges does an hourly or less interval pose for distributed generation customers and developers?

A. The challenges from transitioning from a monthly netting period to 15 minute intervals cannot be overstated. The initial challenge of shifting the distributed generation paradigm from monthly intervals to hourly or less is the lack of available data at those intervals, for

both solar installers and residential customers. Residential customers are billed based on a monthly basis and any usage data available to them, and in turn solar installers, is provided in monthly periods. There is no available insight into a customer's hourly, or less, usage patterns and load profiles, which makes it very difficult (i) for a customer to understand, due to the lack of transparency, hourly netting and (ii) for a solar installer to properly design a system for a customer.

The implications from this lack of data transparency, at the appropriate interval level, poses very real practical problems for solar customers and solar installers, and has the potential for leading customers to make investment decisions based on incomplete or inaccurate assumptions. Currently, the monthly customer usage totals provide an adequate amount of data to properly size a customer's system given the monthly netting periods and annual cancellation of credits to prevent over-sizing. Without hourly data available, designing systems to meet the customer's needs and minimize exporting energy to the grid is much more difficult and may be prone to error, exposing future customers to risk. The combination of an hourly period and an export credit rate below the retail rate will require the solar installer and customer to have clear and transparent hourly usage data.

The move to an hourly period would be a major change that introduces a large amount of volatility to the economics of a distributed generation system. Even if the appropriate interval data was available to customers so that systems could be designed with better guidance, the potential variability in a customer's hourly usage behavior over the 30-year life will create incremental risk for rooftop solar investment.

A 15 minute netting period also does not allow a customer to make behavioral changes to minimize the export of solar energy to the grid and maximize their instantaneous onsite behind-the-meter consumption of self-produced solar energy. A customer will never know in the moment that they are using energy, where that energy is coming from, and whether it is economically advantageous for them. Currently, there is no transparency provided to the customers to understand and handle an hourly netting period.

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 foregoing pre-filed surrebuttal testimony of Thomas Plagemann of Vivint Solar, Inc. in Docket No. 14-035-114 by email to the following:

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