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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**

DIRECT TESTIMONY OF THOMAS PLAGEMANN FOR VIVINT SOLAR, INC.

June 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. What is your position at Vivint Solar.

A. I am the Chief Commercial Officer, Executive Vice President, and Head of Capital Markets.

Q. What is your position at Solar Energy Industries Association ("SEIA")?

A. I am a member of the Board At-Large for SEIA and the State Policy Committee Chair.

Q. Have you testified before the Commission before?

A. No.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to detail the impacts that Rocky Mountain Power's three-part rate design will have on residential solar customers and the solar industry as a whole in Utah and to submit for the Public Service Commission's consideration, an alternative rate design structure that ensures a healthy grid and a healthy residential solar industry.

Q. Where did Rocky Mountain Power propose the three-part rate design?

A. Rocky Mountain Power describes its proposed three-part rate design on lines 69 through 83 of Joelle R. Steward's testimony as well as several other places throughout the Compliance Filing.

Q. Please briefly summarize Rocky Mountain Power's proposed three-part rate design in its Compliance Filing.

A. In November 2016, Rocky Mountain Power proposed to the Public Service Commission a new three-part rate design for residential net metering customers as follows:

Part 1 – high monthly fixed charge of $15.00, which is an increase of $9.00 per month.

Part 2 – a monthly demand charge of $9.02 per kW of peak demand averaged over a specified 60-minute period.

Part 3 – a reduced volumetric charge of $0.038 per kWh consumed.

It is important to note that Rocky Mountain Power's proposal is substantially similar to NV Energy's 2015 proposed rate design.

Q. What has happened in Nevada as a result of NV Energy's 2015 proposed rate design?

A. NV Energy, a sister company to Rocky Mountain Power, both owned by Berkshire Energy, sought to change the rooftop solar net metering program in a way very similar to the current proposal from Rocky Mountain Power in front of this Commission. NV Energy did not seek to grandfather customers, and the Nevada Commission initially sided with the utility. In the aftermath of the Commission's ruling, Nevada lost thousands of jobs in the solar industry and there was a 99% decrease in net metering applications year-over-year. The rooftop solar industry was essentially decimated, resulting in most companies (including Vivint Solar) withdrawing from the state and relocating employees. There was significant public and consumer outcry and as a result, in November 2016, Nevada residents voted in a ballot measure to deregulate the state; and in June 2017, the Nevada legislature passed AB-405 that restored net metering in Nevada and ensures each residential net metering regime will be grandfathered for 20 years. We hope that Utah

will learn a lesson from that experience and not follow a needlessly painful similar path by rejecting Rocky Mountain Power's proposal.

Q. Please provide Vivint Solar's perspective with respect to the high monthly fixed charge of $15.00.

A. It is not unusual in traditional residential ratemaking design to include reasonable minimum charges, which help the utility recover a portion of its costs, as long as those minimum charges are a small portion of a customer's total utility bill. To be consistent with accepted practice, it is critical that the fixed charge be small, reasonable, and fairly distributed across all residential ratepayers. In its proposal, Rocky Mountain Power is discriminating against one technology, residential solar, which is a vulnerable customer segment, without taking into account the full short-term and long-term benefits to the grid. As a result, the total fixed, non-by-passable charges, for the average residential solar customer would be equal to 49% of that customer's pre-solar bill.[1] This is not reasonable. Furthermore, using Rocky Mountain Power's logic, one should be concerned about any technology that reduces the amount of energy purchased from Rocky Mountain Power, because of the unproven presumption of a cross-subsidization, structured under the guise of a specious cost shifting argument. To be clear, the behind the meter consumption of energy produced from a residential solar energy system is no different from any other technology that reduces residential energy consumption and therefore should not entitle Rocky Mountain Power to create a new rate class for residential solar customers. For example, Rocky Mountain Power has no intention of increasing the fixed charge for ratepayers who adopt LED lighting, which may, as estimated by Catherine

[1] Based on average customer monthly peak usage of 4.3KW and a corresponding average bill of $110

Wolfram an energy economist and professor at the Haas School of Business, California Berkeley, shift costs as much as adopting distributed solar. Rocky Mountain Power has stated that it ***did not*** use the 2020 estimated net metering cost shift amount of "$27MM per year based on current growth projections" (see page 10, line 200 of Joelle R. Steward's testimony) to create its proposed three-part rate design.[2]

Finally, the National Association of State Utility Consumer Advocates ("NASUCA") has adopted a resolution which opposes efforts by utilities to increase residential customer fixed or demand charges. The resolution states:

> *"Be it further resolved, that state public service commissions should promote and adopt gas and electric rate design policy that minimizes monthly customer charges of residential gas and electric utility customers in order to ensure that delivery service rates are equitable, cost-based, least-cost, and encourage customer adoption of conservation and federal and state energy efficiency programs."*[3]

It is also stated that substantial increases in the customer charge "disproportionately" and "inequitably" affect low usage customers, which is essentially who distributed generation customers are. Such discriminatory ratemaking should be rejected by the Commission.

Q. Is there a better alternative to a high fixed charge?

A. Yes. Using a reasonable and small minimum bill for all residential customers as the mechanism to assure some minimum level of cost recovery is a better solution than implementing a high nonbypassable fixed charge.

Q. Why?

[2] In the January 23, 2017 Technical Conference, Rocky Mountain Power stated that its three-part rate structure was not based on the $27MM per year cost shift.

[3] The National Association of State Utility Consumer Advocates, Resolution 2015-1, "*Opposing Gas and Electric Utility Efforts to Increase Deliver Service Customer Charges*"

A. Because it incentivizes consumers to use less energy and promotes energy conservation. A high fixed charge with a low volumetric charge will result in increased energy usage because the incremental cost to the customer of using more power is so much lower. This result would be in direct conflict with Rocky Mountain Power's and the Commission's programmatic energy efficiency efforts. It would not serve the public interest.

Q. Please provide Vivint Solar's perspective with respect to the demand charge of $9.02 per kW and demand charges in general.

A. Demand charges are standard in commercial and industrial ratemaking design, where the ratepayers are larger, with higher average peak usage, are more sophisticated, and are better equipped to manage such rate structures. As a result, and as described above, demand charges are almost unheard of in residential ratemaking design, despite utility companies' repeated attempts to implement them. In Nevada, the Public Utilities Commission flatly rejected NV Energy's proposed demand charge for residential solar customers. Shifting to a demand charge for residential solar customers would be discriminatory and cause confusion due to a lack of understanding of the charge, an inability to properly manage it, and the lack of data and transparency from Rocky Mountain Power. In addition to not being a recommended rate policy, there is no situation where a demand charge for one type of residential energy conservation is acceptable. If one were to consider residential demand charges they would have to at a minimum (i) be applicable to all residential customers in the same fashion, (ii) be properly communicated and understood by all customers, (iii) reflect the actual incremental costs of the customer's usage or the actual cost of interconnection, and (iv) be accompanied by data and/or technology allowing a customer to manage his/her peak

demand and incurrence of those charges. As mentioned above we do not believe demand charges are defensible as a rate design tool for residential customers.

Q. If a demand charge is implemented what information would Rocky Mountain Power need to provide its customers.

A. It would be Rocky Mountain Power's obligation, at its own cost, to help its customers understand the difference between a kWh and a kW ("energy" and "power or capacity") and explain how each is priced. Additionally, it would be Rocky Mountain Power's obligation to provide the required tools and data transparency to its customers so each knows how innocuous activities, such as vacuuming the floors while doing laundry, and running the dishwasher all at 6:00 pm on a Tuesday night will result in a significantly higher electric bill, even though such actions would create very minimal incremental grid costs to Rocky Mountain Power. Demand charges poorly reflect actual incremental costs to the grid, rather they are a cost recovery strategy that only benefits the utility. If Rocky Mountain Power wants to impact peak demand there are other, more equitable, pricing mechanisms that can help drive that result.

Q. Please provide Vivint Solar's perspective with respect to the reduced volumetric charge of $0.038 per kWh.

A. Rocky Mountain Power's proposed three-part rate design would encourage residential ratepayers, with a fairly stable consumption rate, to install a single solar panel system, simply to obtain the benefit of the lower variable volumetric charge. However, the installed residential solar energy system would provide limited benefits to Rocky Mountain Power's grid and ratepayers as a whole. Implementing a rate design that has high fixed charges and a demand charge, combined with a low volumetric rate, creates a

perverse incentive to ratepayers and undermines investment in energy efficiency due to the separation of cost causation.

Q. Does the volumetric charge of $0.038 reflect the true value of the solar energy exported to the gird?

A. No, the volumetric charge of $0.038 fails to capture the long-term and short-term benefits that a residential solar energy system provides to the utility, the system, all ratepayers, and the public interest. It fails to consider ***any*** of the demonstrable long-term values that are typically considered in value of solar calculations. In combination with high demand and fixed charges, low volumetric charges not only do not properly value residential solar, they create incentives that are not good for the State of Utah or its ratepayers.

Q. What impact will Rocky Mountain Power's proposed three-part rate structure have on a new residential solar customer.

A. Per Rocky Mountain Power, the impact to a residential solar customer under the proposed three-part rate structure will be about $20 per month, which equates to approximately $240 per year, per customer or approximately 20% of the average customer's total utility bill. This amount of incremental cost or savings reduction, will drastically delay a customer's return on investment and eliminates any financial incentive to invest in a residential solar energy system. The Commission should consider that Rocky Mountain Power's proposal does not account for the costs associated with purchasing a rooftop solar energy system. For example, if a Rocky Mountain Power customer wants to install a 7-kilowatt rooftop solar system, that customer will pay approximately $30,000 with the hope of achieving (i) energy independence, (ii) long-term savings for their family, and (iii) improved environment and air quality in Utah. If that same Rocky Mountain Power

customer finances the cost ($30,000), over 20 years, he/she will pay about $95 per month, which is not included in Rocky Mountain Power's customer impact analysis. An average rooftop solar customer with a 7-kilowatt system, which offsets 80% of their annual energy usage, will see an increase of more than $31 per month on their Rocky Mountain Power bill as a result of the proposed three-part rate structure. This amount will be higher if their average 60-minute peak demand, during specific times, goes above 3.4 kilowatts, which is possible in the summer or winter months. Simply put, an increase of $31 per month will add up to nearly $15,000 of additional costs over the life of the solar system (relative to their avoided utility payments assuming modest residential rate escalation) and delays potential savings to the customer past the 30-year useful life of the system.

Q. Did Rocky Mountain Power adequately capture the value of a residential solar system in its Filing?

A. No. In its proposal, Rocky Mountain Power (i) ignores the demonstrable long-term benefits of residential solar to the grid, (ii) is proposing a rate structure that inherently discriminates against solar customers, and (iii) is attempting to eliminate consumer choice in favor of its monopoly price power. The Public Service Commission should not allow Rocky Mountain Power to economically disadvantage consumers who are attempting to save money by using less power and investing in their own generation, while providing short-term and long-term benefits to the system and other ratepayers. Additionally, the true benefits of residential solar systems have been ignored in the short-term limited framework established by the Public Service Commission. Senate Bill 206 (UCA § 54-15-105.1) mandates that the Public Service Commission conduct a cost-benefit analysis but does not limit the timeframe being considered to a self-imposed 12-

month time period, which cannot properly value the long-term system benefits realized of the 30-year useful life of the residential solar system. The Public Service Commission should require Rocky Mountain Power to undertake a more complete analysis to capture the long-term system and ratepayer benefits Rocky Mountain Power disregarded, consistent with the approach Rocky Mountain Power would take for any long-term investment it would build into the rate base. If this is not done, any proposed rate structure will result in a one-sided outcome, benefiting Rocky Mountain Power, at the expense of Utah solar customers and its growing and innovative solar industry.

Q. **Please provide Vivint Solar's perspective with respect to the impact Rocky Mountain Power's proposal will have on consumer choice.**

A. The three-part rate structure proposed by Rocky Mountain Power would significantly impact the payback timeline for residential solar customers and would make it unlikely that any new solar customer would choose to purchase and install a rooftop solar energy system for economic reasons. It will eliminate customer choice. The issue is that the solar industry, together with residential solar customers, and Rocky Mountain Power do not compete on a level playing field. If the approach to long-term benefits we describe above was taken, I am certain that the benefits of a residential solar system would get a fair treatment and the outcome would not look like the proposal Rocky Mountain Power has presented. Rocky Mountain Power, in addition to being granted monopoly privileges as the gate keeper to the Utah electric grid and the opportunity to earn an authorized return on invested capital, it is very well funded, and has the experience and capability to unduly influence the outcomes of rate proceedings. Such power, if left unmonitored, can destroy and have lasting impacts on emerging technologies and business models. It is

these emerging technologies and business models that are for the first time in our history providing ordinary consumers the opportunity to develop a new relationship with how their electricity is produced and consumed. It creates a whole new level of consumer engagement and one that with their rate proposal, Rocky Mountain Power is attempting to eradicate.

Q. Why?

A. Because it has the potential to decrease the size of their invested capital over time by eliminating the need for incremental expenditures on unnecessary infrastructure. The Public Service Commission's role is to regulate Rocky Mountain Power's influence to ensure that rates remain reasonable for all customers, including those who want to invest in a technology that helps them reduce their consumption of grid supplied power, which we believe falls within the public interest standard and consideration. Without Public Service Commission oversight and additional rules of engagement, no one would be able to compete with Rocky Mountain Power and consumer choice would be non-existent in Utah.

For example, it took legislative action in Utah before Rocky Mountain Power allowed access to its grid for residential solar customers through the net metering program. The net metering bill was enacted in 2002. The Public Service Commission increased the net metering cap to 20% in 2009. We currently have less than 2% residential solar penetration, in a state where the residential base is rapidly growing. And now, Rocky Mountain Power wants to reverse that success under the guise of a specious cost shifting argument and essentially eliminate a customer's right to choose. The Public Service Commission should look for ways to promote consumer choice, increase competition,

break down barriers for consumers, and keep rates reasonable for all ratepayers, which includes residential solar customers.

Q. **Please provide Vivint Solar's perspective regarding public support for Solar in Utah.**

A. In a survey performed by Dan Jones and Associates of 834 respondents throughout Utah between November 21-November 29, 2016, on behalf of Vivint Solar, we learned that 88% of Utahns favor developing more solar energy in Utah, 76% of Utahns oppose an increase of costs for customers with rooftop solar, 76% of Utahns agree that Rocky Mountain Power's proposal unfairly discriminates against solar customers, and 82% of Utahns believe solar customers should have the right to reduce their electricity usage without paying additional fees. In summary, Utahns support residential solar and support consumers who elect to make a long-term investment in residential solar. Rocky Mountain Power's proposal would eliminate solar as an option for consumers in Utah.

Solar Industry Impacts

Q. W*hat impact will Rocky Mountain Power's proposal have on the solar industry in Utah.*

A. We would experience the same impact to the solar industry in Utah that we saw in Nevada. In short, given the resulting economic outcome to customers of Rocky Mountain Power's rate proposal, it would be hard for a responsible company to recommend solar to any residential customer, essentially wiping out Utah's residential solar industry. The end result would be that Utah consumers have no choice to go solar and would again become captive consumers of Rocky Mountain Power's monopoly over energy generation in Utah. It is estimated that between 3,000 – 4,000 jobs will be lost in Utah as well as the

associated downstream economic impact to the state. The financial community would also perceive this move as symptomatic of an anti-business sentiment in the state. The adverse impact to the solar industry cannot be overstated.

Utah is a state that prides itself in promoting business growth, economic development, competition, and industry. If Rocky Mountain Power's proposal is approved it would be one of the worst net metering policies in the country and eliminate Utah's progress towards a flexible grid of the future driven by consumer choice.

Proposed Alternative Rate Designs

Q. Please provide Vivint Solar's perspective regarding the concept of gradualism and the role it plays in rate design.

A. Gradualism is a central tenet of utility rate design, which has been applied by many other commissions and states when looking to make changes to its net metering policy or any other shift in pricing or cost recovery methodologies. It 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, pivot, and avoids a rate shock. Unlike Rocky Mountain Power's aggressive proposal, which would shock the market, consumers, and the industry, the Public Service Commission should consider a proposal that would give the consumers, the solar industry, and supportive businesses, time to adapt and adjust.

Q. Does Vivint Solar have an alternative rate design proposal for the Public Service Commission to consider?

A. Yes, Vivint Solar has an alternative rate design structure. We believe it will help Rocky Mountain Power recover its true costs of serving residential solar customers and will keep consumer choice and the solar industry alive in Utah.

Alternative Rate Proposal, Monthly True-Up:

Grandfather the meter, on the then current regulatory regime, for 25 years from the date the customer received permission to operate from Rocky Mountain Power. This is different from guarantied energy prices, which all solar customers are exposed to. For additional information on grandfathering please see Dan Black's testimony.

A slight increase in the minimum bill amount for all residential customers.

Set the maximum offset percentage for new residential solar energy systems at 90% of the customers 12 months of prior energy usage.

Establish a monthly true-up value for energy exported to the grid, which should start at the retail rate and stepping down as the solar penetration level increases to a rate floor that is determined as the "value of solar" rate.

Solar penetration levels should be determined by a percentage of the total number of residential solar customers out of the total residential class. As the residential class increases in size, on an annual basis, the solar penetration level percentage shouldl also be adjusted.

Q. Does this conclude your direct testimony?

A. Yes.

CERTIFICATE OF SERVICE

I hereby certify that on June 8, 2017, I sent a true and correct copy of the pre-filed direct testimony of Thomas Plagemann of Vivint Solar, Inc. by email to the following:

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