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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	<b>Docket No. 14-035-114</b> Vivint Solar, Inc.’s Supplemental Responses to Rocky Mountain Power’s (“RMP”) Second Set of Data Requests
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**RMP Data Request 2.1**

On lines 38 through 40 of his Direct Testimony, Mr. Plagemann states that “[i]n the aftermath of the [Nevada] 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.” Please provide any documents, research papers, studies, information or analyses relating to these claims.

**Supplemental Response to RMP Data Request 2.1**

Vivint Solar answered this request and provided the documents and information relating to these claims and a link to the information publicly available. We do not have research papers or studies, but the following articles support claims of significant job loss in Nevada and the negative effect on the industry.

- <https://www.reviewjournal.com/business/solarcity-cuts-550-nevada-jobs-blames-new-net-metering-rate/>
- <https://www.reviewjournal.com/business/energy/lawmaker-new-net-metering-rates-have-decimated-states-rooftop-solar-industry/>
- <https://www.greentechmedia.com/articles/read/nevadas-solar-exodus-continues-driven-by-retroactive-net-metering-cuts>
- <https://knpr.org/knpr/2016-01/rooftop-solar-customers-nv-energy-pulled-bait-and-switch>
- <http://www.npr.org/2016/03/11/470097580/nevada-solar-power-business-struggles-to-keep-the-lights-on>
- <https://www.desmogblog.com/2016/05/09/we-were-booming-and-now-we-re-dead-how-nevada-s-solar-industry-bright-spot-turned-dark>
- <https://www.greentechmedia.com/articles/read/nevada-regulators-approve-grandfathering-for-rooftop-solar-customers>

**RMP Data Request 2.2**

Please provide all documentation or other information relating to Vivint's claim that Rocky Mountain Power's "proposed three-part tariff would effectively destroy the solar industry in Utah, kill thousands of jobs, and impact economic growth with the state" as stated in Mr. Collins' Direct Testimony at lines 187-189.

**Supplemental Response to RMP Data Request 2.2**

Vivint Solar does not have additional documentation to provide. On lines 146 through 166 in his direct testimony, Witness Thomas Plagemann testified as a financial expert in the solar industry about the impact RMP's proposed three-part rate will have on a residential solar customer. That analysis and the additional articles submitted in the Supplemental Response to RMP Data Request 2.1 are support for Vivint Solar's claim in Dr. Collins' testimony and elsewhere that the proposed three-part rate would destroy the solar industry in Utah.

### **RMP Data Request 2.3**

Please provide all documentation or other information reflecting the types of jobs that Vivint claims will be lost if Rocky Mountain Power's proposal is adopted. In responding to this request, please identify the extent to which (i.e. the percentage that) those expected job losses would impact full-time vs. part-time positions or independent contractors, and provide any documents or other information showing Vivint's estimates of the impact of the proposal on jobs, including the impact on specific positions or types of positions (i.e. managerial, sales, administrative, etc.) for the solar industry, if such information exists.

### **Supplemental Response to RMP Data Request 2.3**

In its initial response, Vivint Solar identified the types of jobs that will be lost and the percentage that would be full-time and part-time. Vivint Solar supplements the response as follows: Vivint Solar has approximately 1,600 employees in Utah and approximately 400 of those employees are field employees, warehouse employees, sales managers, installation technicians, foremen, electricians, and office support staff. Based on the Utah Solar Jobs Census fact sheet from March 2017 (link below), there are 4,408 total solar jobs in Utah, of which 3,266 are installation employees and 753 are sales/distribution employees. If the solar industry fails, these jobs will no longer be part of Utah's economy, which supports Vivint Solar's estimate of 3,000-4,000 jobs that will be lost if the Commission imposes RMP's three-part rate structure.

[http://www.thesolarfoundation.org/wp-content/uploads/2017/03/UT\\_March2017\\_FactSheet.pdf](http://www.thesolarfoundation.org/wp-content/uploads/2017/03/UT_March2017_FactSheet.pdf)

## **RMP Data Request 2.4**

On lines 40 through 41 of his Direct Testimony, Mr. Plagemann states “[t]he rooftop solar industry was essentially decimated, resulting in most companies (including Vivint Solar) withdrawing from [Nevada] and relocating employees.” Please provide any documents, research papers, studies, information or analyses relating to these claims.

## **Supplemental Response to RMP Data Request 2.4**

In addition to the articles provided in response to RMP Data Request 2.1, included here are additional articles specific to Vivint Solar.

[http://www.slate.com/articles/business/the\\_juice/2016/01/solarcity\\_and\\_vivint\\_pulled\\_out\\_of\\_nevada\\_is\\_solar\\_power\\_losing\\_at\\_the\\_state.html](http://www.slate.com/articles/business/the_juice/2016/01/solarcity_and_vivint_pulled_out_of_nevada_is_solar_power_losing_at_the_state.html)

<https://www.greentechmedia.com/articles/read/vivint-pulls-out-of-nevada-after-only-two-weeks-in-the-state>

<http://investors.vivintsolar.com/company/investors/Press-Releases/Press-Release-Details/2017/Vivint-Solar-to-Relaunch-Residential-Solar-Energy-Services-in-Nevada/default.aspx>

### **RMP Data Request 2.5**

Please provide the basis (including any documents or other information) for your claim that Rocky Mountain Power's proposed rate structure will "make it unlikely that any new solar customer would choose to purchase and install a rooftop solar energy system for economic reasons . . . [and] will eliminate customer choice," as stated in Mr. Plagemann's Direct Testimony at lines 192-194.

### **Supplemental Response to RMP Data Request 2.5**

Vivint Solar has no documents to provide. As stated in response to RMP Data Request 2.2, Witness Thomas Plagemann analyzed the effect of RMP's proposed rate structure as a financial expert in the solar industry and based on his experience in Nevada. Additionally, Vivint Solar provided its model to the Division in response to DPU 1.1 which it sent to RMP.

**RMP Data Request 2.6**

Please provide all documentation or other information showing how and what Vivint advises their customers or potential customers regarding the price of Rocky Mountain Power (or utility-provided) electricity versus the price of installing and using residential solar technology.

**Supplemental Response to RMP Data Request 2.6**

Vivint Solar has nothing further to provide. It indicated how it advises its customers and provided the confidential documents it attached in response to RMP Data Request 3.

### **RMP Data Request 2.7**

Please provide the documentation or other information necessary to show employment data reflecting the number of Vivint employees who were full-time, part-time, or who were employed as independent contractors from January 1, 2012 to the present.

### **Supplemental Response to RMP Data Request 2.7**

Vivint Solar continues to object to this data request and without waiving its objections states: previously, Vivint Solar provided a link to its SEC Form 10-Q filed March 16, 2017 with information about its workforce on page 8. This page shows that Vivint Solar has 3,001 employees. Of the 3,001 employees, Vivint Solar has approximately 1,600 employees in Utah and approximately 400 of those employees are field employees, warehouse employees, sales managers, installation technicians, foremen, electricians, and support staff.

## **RMP Data Request 2.8**

Please provide the documentation or other information necessary to show the amount of compensation paid to Vivint sales force employees, including the hourly rates, monthly and yearly salaries, and any commissions paid from January 1, 2012 to the present.

### **Supplemental Response to RMP Data Request 2.8**

In spite of objections and without waiving them, Vivint Solar provided its publicly filed SEC Form 8-K and 8-K Exhibits, filed on May 09, 2017. Without waiving its objections, Vivint Solar compensates its sales employees primarily on a per watt basis based off of the per watt installed solar system size. For the quarter ending March 31, 2017, the responsive documents show that Vivint Solar's cost per watt was \$2.98. Additionally, as shown in Vivint Solar's investor presentation slide 7 below, which accompanied the 8-K filing on May 09, 2017, Vivint Solar's cost per watt breakdown for the first quarter 2017 was as follows (link below):

- General and Administration - \$0.39/watt
- Sales - \$0.65/watt
- Installation (including equipment) - \$1.94/watt

Slide 7 shows Vivint Solar's cost per watt breakdown and "Sales" costs dating back to the Fourth Quarter of 2014. (**Vivint Solar did not begin offering rooftop solar systems in Utah until early 2015.**)

For the quarter ending March 31, 2017, all Vivint Solar's sales and marketing expenses cost the company \$0.65 per watt. This means that for an average 7.0 kW residential PV system, Vivint Solar spent approximately \$4,500 on sales and marketing.

[http://s2.q4cdn.com/820306591/files/doc\\_presentations/Q1/VSLR\\_Q1\\_2017.pdf](http://s2.q4cdn.com/820306591/files/doc_presentations/Q1/VSLR_Q1_2017.pdf)



**RMP Data Request 2.9**

Please provide the documentation or other information necessary to show the commission structure Vivint employs and the commission amounts Vivint pays or has paid to compensate its sales force for solar installations from January 1, 2012 to the present.

**Supplemental Response to RMP Data Request 2.9**

Without waiving previous objections, see Supplemental Response to RMP Data Request 2.8. Vivint Solar compensates its sales employees primarily on a per watt basis based off of the per watt installed solar system size.

### **RMP Data Request 2.10**

Please provide the documentation or other information necessary to show what Vivint has told or shown to its customers about the period of time in which they will be able to recoup their costs for purchasing solar power equipment and installation costs in the state of Utah. In responding to this Data Request, please provide all brochures, handouts, flyers, or other documents reflecting any such information ever used by Vivint or its contractors in this state.

### **Supplemental Response to RMP Data Request 2.10**

Vivint Solar has no further documentation to provide other than what it provided in response to RMP's Data Request 3 in RMP's first set of data requests to Vivint Solar.

## **RMP Data Request 2.11**

Please provide the documentation or other information showing the cost to install solar panels and the associated system supplied by Vivint to residential customers and showing the payment options Vivint's customers are given to either pay for the system or pay to use the system in this state.

## **Supplemental Response to RMP Data Request 2.11**

Without waiving its objections, Vivint Solar provides the following information:

See Vivint Solar's response to RMP Data Request 2.8 above for a breakdown of Vivint Solar's costs of installation per watt for a solar system. For example, if Vivint Solar installed a solar system in March 2017, it would have cost Vivint Solar approximately \$1.94 per watt for the installation and equipment, \$0.39 per watt for general and administration, and \$0.65 per watt for sales and marketing, for a total of \$2.98 per watt. This means that to acquire a customer, procure the equipment, and install an average 7.0 kW residential PV system, Vivint Solar spent approximately \$20,680.

The \$2.98 per watt is an upfront cost number and does not reflect the long-term costs to service a customer, and does not include state sales tax on equipment purchased. Historically, for even sales of residential PV systems, Vivint Solar agrees to provide operations and maintenance for at least 10 years, and warranty and customer support for 20 years. These costs vary by period and customer type.

Currently, Vivint Solar only offers customers in Utah cash or financed options to purchase a solar energy system. If a customer elects to finance their system, the payment terms, interest rate, and lender fees vary depending on that customer's contract with the third-party financing company.

Currently, Vivint Solar offers customers in Utah a price between \$3.20 and \$3.80 per watt. The final price depends on several factors, including but not limited to: (i) sun exposure, (ii) roof type, (iii) system size, (iv) equipment selection, (v) cash down payment; (vi) selected financing, (v) structural and electrical upgrades, and (vi) other variances based on location, home, or roof replacement options. This means that for an average 7.0 kW residential PV system where the customer purchases for cash with basic equipment, the purchase price would be approximately \$3.20 per watt or approximately \$22,400. Accordingly, Vivint Solar's operating margin on the sale of such average system is approximately \$1,100 after taking into account state sales tax; *provided* that such operating margin does not take into account long-term servicing costs, as described above.

**RMP Data Request 2.12**

Does Vivint provide or has it ever provided its sales force with suggested topic lines or scripts to utilize when making sales pitches to potential customers regarding the purchase of solar power? If so, please provide all documentation relating to any suggested topic lines or scripts.

RMP did not ask for supplemental information for this Data Request

### **RMP Data Request 2.13**

Please provide the documentation or other information necessary to show the profit margins Vivint earns or has earned on solar installations before owner or management compensation from January 1, 2012 to the present. Your response to this information should provide sufficient data to determine Vivint's actual costs to purchase or manufacture materials for a residential solar system and Vivint's sale or use price for that system. Recognizing that different systems will be priced differently based on size and configuration please provide sufficient information to determine profit margins per panel or per system, including but not limited to any work-ups Vivint has or has done of "typical" systems.

### **Supplemental Response to Data Request 2.13**

Vivint Solar continues its objections and does not waive them. Please see SEC Form 8-K and the Supplemental Response to RMP's Data Request 2.8 and 2.11.

**CERTIFICATE OF SERVICE**

I hereby certify that on August 7, 2017, I sent a true and correct copy of foregoing Supplemental Responses of Vivint Solar to RMP’s Second Set of Data Requests in Docket No. 14-035-114 by email to the following:

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