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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

REBUTTAL TESTIMONY OF RICHARD COLLINS

ON BEHALF OF
VIVINT SOLAR, INC.

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

DATED this 25th day of July, 2017.

/s/Stephen F. Mecham________
Representing Vivint Solar, Inc.

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 testimony in this docket?

A. Yes. I submitted testimony on June 8, 2017.

<u>SUMMARY OF TESTIMONY</u>

Q: What is the purpose of your rebuttal testimony?

A: I rebut the testimony of the witnesses for the Division of Public Utilities (the "Division") and the Office of Consumer Services (the "Office") and comment on some of the other intervenors' testimony. The gist of the Division's and the Office's testimony is that they are concerned about the possible subsidization of Net Energy Metered ("NEM") residential customers by nonparticipating residential customers ("non-NEM"). As a result, they recommend either restrictions on or changes to the NEM program and a transition to a "post net metering" regulatory regime, which might require changes to the current law in the state of Utah. Both the Division and the Office want to see an eventual end to the NEM program as it is currently constructed and a rapid move to a different regulatory regime.

Q: What specifically are you recommending?

I am recommending that the Commission reject the overall recommendations of the Division because they are based on the faulty premise that the NEM program results in detrimental impacts on the residential class and Rocky Mountain Power's ("RMP") system as a whole. The Division claims that the program is inherently unsustainable and results in inequities between NEM and non-NEM customers and therefore these inequities should be curtailed. If the Commission accepts the recommendations of the Division, the solar industry in Utah will be severely harmed and both NEM and non-NEM customers will be negatively impacted now and in the future. The Office is also leery of the NEM program and wants to eventually end the current NEM program and institute regulatory reform to better protect non-NEM customers in the future. The Office does not see the need to make drastic changes to the NEM program at this time and recommends an additional study and information gathering period before implementing the regulatory change.

Q: Should the Commission decide this case, based on whether its decision harms the solar industry in Utah?

A: The Commission's perspective in deciding this case should include the general public interest, which includes: (i) the interests of the ratepayers, both NEM and non-NEM, and (ii) the interests of the utility by keeping it financially healthy enough to provide safe and reliable service. The Commission should also take a broader perspective and consider the interest of both present and future ratepayers and consider how their decisions will impact the general public in terms of jobs and opportunities for consumer choice. The reason that the Commission should be concerned with the future viability of the solar industry in Utah, and the NEM program in particular, is that there is substantial unrefuted evidence on the record that the NEM program will lead to future benefits for all RMP ratepayers and citizens living in the State of Utah. RMP's 2015 IRP clearly shows that the higher penetrations of distributed generation will lead to a reduction in the present value revenue requirement ("PVRR") by about $706 million dollars over a 20-year horizon. RMP's unacknowledged 2017 IRP identifies about $400 million dollars of PVRR savings over a similar 20-year horizon. These savings are significant and are in the public interest, which means, in this case, if the Commission adopts policies and new regulatory regimes that decidedly harm or eliminate the solar industry in Utah it will harm or eliminate these substantial benefits. Implementing such myopic policies runs directly counter to the long-run interests of the ratepayers and the citizens of Utah. The solar industry is a source of thousands of jobs and is dependent on fair treatment from state policymakers, regulators, and the Commission. Normally, the Commission should not adopt a regulatory policy that only benefits a particular industry; however when that industry's financial viability has a direct positive impact on all ratepayers and the general public, then the Commission should take that industry's interests into account when making a decision.

Q: What are the major problems with the Division's analysis?

A: There are two main, and in my opinion fatal, problems with the Division's analysis and its subsequent conclusions and recommendations. First, the Division appears to start out with a false narrative about the impact that the NEM program has on other ratepayers. The Division believes there is an inherent subsidy embedded in the program, which creates an unacceptable inequity amongst ratepayers. The Division reaches this conclusion by limiting its analysis to the insufficient one year test period that was ordered by the Commission. In order to reduce or eliminate this perceived subsidy, the Division is advocating for changes in the NEM program that will effectively destroy the underlying economics of the NEM program. Second, the Division has not critically analyzed the data on which it makes its analysis of the differences between NEM and non-NEM residential customers. The Division takes the results of the load and production profile studies performed by RMP as representative of the NEM class as a whole. Yet, from a statistical perspective, the RMP load study lacks the requisite number of observations on which to make reliable statistical inference on the population as a whole. If one cannot conclude, with some statistical surety, that the sample data represents the actual population, then one cannot draw conclusions using that data. Given these two conceptual fatal errors in the Division's analysis, the Commission should disregard their recommendations to make changes to the current NEM program.

Q: Could you explain in more detail why the Division's analysis of the NEM program starts off with a false narrative and conclusion.

A: The Division has limited its analysis of benefits and costs to the 2015 test year. By doing so it follows the Commission prescription in Phase One of this docket for analyzing the NEM program, but violates the essential tenets of a good and reliable cost-benefit analysis. No textbook or academic economist would approve of a one year test period analysis of costs and benefits for a project or investment, where the impacts clearly extend over multiple years. If one is required to look at only one year's worth of costs and benefits, no dam would ever get built; there would be no long-term investments made by businesses or anyone for that matter. As stated in my direct testimony, it is my professional opinion that the Commission made a grave error in their decision to limit the analysis of costs and benefits to a single test year. The Commission has misconstrued the cost-benefit analysis of the NEM program, as required by the legislature, with a cost of service allocation study that decides how best to apportion costs between different customers and customer classes. The legislature wanted the Commission to evaluate the benefits and costs of the NEM program, and if costs exceeded benefits, set rates to remedy the problem. The Commission's required analytical framework does not allow for a fair determination of the first requirement, an evaluation of costs and benefits.

<u>CRITIQUE OF THE DIVISION'S TESTIMONY</u>

Q: Would you provide a critique of the Division's direct testimony?

A: Yes. The Division sponsored two expert witnesses, Dr. Artie Powell, manager of the Division's Energy section and Stan Faryniarz, an outside consultant who is an energy economist and power supply planning and management specialist. Mr. Faryniarz specializes in cost of service and power procurement. The two witnesses reviewed RMP's compliance filing and concluded it complied with the Commission's November 7, 2015 Order and the criteria set forth in that order. The two witnesses adopted different perspectives and tried to meld their testimonies into compatible recommendations, which creates confusion on what the Division is actually recommending.

Q: Can you provide a brief synopsis of the Dr. Powell's testimony?

A: Yes, Dr. Powell reviews the RMP's Compliance filing and its request for six explicit Commission findings and provides a brief opinion of RMP's explicit requests. Dr. Powell then reviewed the Commission's past Orders that are relevant to this proceeding and provide guidance on what evidence the Commission was seeking to make a determination on the costs and benefits of the NEM program as required by Utah Code Ann. 54-15-105.1(1). He also provides an analysis of the Company's request to segregate NEM customers into a separate class. Finally, Dr. Powell makes a recommendation to establish a lower cap on NEM program participants and recommends several changes to the NEM program to address the problems he identified.

Q: What was the Division's opinion on the six explicit findings that RMP requested of the Commission?

A: First, the Division agrees that RMP's request for a Commission finding that their counter factual cost of service ("CFCOS"), the actual cost of service ("ACOS") and the net metering breakout cost of service studies comply with the November 2015 Commission order. Second, RMP asked the Commission to find that based on these analyses listed above, that the costs of the program exceed the benefits and the Division states that "Given the framework adopted by the Commission, the Division concludes that the costs do exceed the benefits." Third, RMP asked the Commission to find that the unique usage characteristics of NEM customers justifies segregating them into a distinct and separate rate class. The Division believes the evidence is "mixed" on this matter and the two Division witnesses have differing conclusions on this matter, but the final Division recommendation is that it might not be unreasonable to create a separate class, however, the separation should only be done in the next general rate case (GRC). Fourth, RMP asked the Commission to find that the current rate structure for NEM customers is unjust because it does not reflect the costs imposed on the system and unfairly shifts costs from NEM customers to non-NEM customers. The Division supports RMP's request and states that the program puts unwarranted upward pressure on retail rates even when RMP's cost are relatively flat or declining. However, it provides no empirical evidence for this assertion and ignores the findings in RMP's 2015 and 2017 IRP. Fifth, RMP asks the Commission to approve, as just and reasonable, RMP's proposed Schedule 136 and

Schedule 5 for residential customers that include a three-part tariff structure including a separate customer class, which includes a higher customer charge, a demand charge, and lower volumetric rates. The Division agrees with this request, conceptually, but recommends the adoption of an additional time of use (TOU) option to allow for customer choice. The Division recommends the adoption of these rate structures in these proceedings with the final rate elements being set in a GRC. I strongly disagree with the Division's recommendation that a new tariff for NEM customers is in the public interest, which I will elaborate on below. The last request is for a waiver of Utah Admin R 746-312-12 pursuant to Utah Admin. R. 746-312-3(2) for changes to the application fee. The Division does not oppose the request for the waiver and neither does Vivint Solar.

Q: Why do you disagree with the Division's recommendation to adopt a three-part tariff with a demand charge?

A: I strongly disagree with this proposed rate design because it violates the recommendations made by Bonbright, which Dr. Powell explicitly cites in his testimony. Dr. Powell cites, on line 215 of his direct testimony, Bonbright's concern about ratemaking policies; "unless rate-making policies are sufficiently stable to permit a consumer to predict with reasonable confidence what his charges will be …. a cost-price system of rate making will be self-defeating when viewed as a means of securing a rational control of demand." Yet, a residential tariff with a demand charge does not give consumers a way to predict what their charges will be. Just one brief period when several appliances are being used along with air conditioning will lead to an unreasonably high electric bill. Additionally, RMP's current billing system fails to provide NEM and non-NEM customers the required level of energy usage transparency to help them understand their individual peak demands and the downstream impacts to their monthly bill. As Vivint Solar and other intervenors have noted, it is much easier to monitor and understand energy use than capacity use.

Q: Are there other rate design criteria that are being violated by the three-part tariff endorsed by the Division?

A: Yes, Dr. Powell cites three primary rate design objectives: (i) the revenue requirement criteria; (ii) the fair-apportionment objective; and (iii) the optimum-use or consumer-rationing objective. The three-part tariff, with a demand charge, can possibly meet the first two objectives, but will fail miserably with respect to the third primary objective, the consumer-rationing objective. Specifically, this objective tries to encourage the efficient use of public utility services and yet a tariff with a demand charge will discourage NEM customer participation, which will lead to higher PVRR in the future for all ratepayers. The three-part tariff, with a demand charge, also violates other guiding principles the Division uses for establishing reasonable rate designs such as simplicity and correct price signals that "will incent customers to make appropriate decisions about energy use including energy conservation" (lines 245-246 of Dr. Powell's direct testimony). Any tariff with a demand charge is not simple for residential consumers to understand and does not encourage energy conservation due to the fact that the energy charge of the three part tariff is significantly lower.

Q: Are there other inconsistencies between Bonbright's recommendations for good rate making and the Division's recommendation?

A: Yes, Dr. Powell responds to the question on whether rate making is dynamic by noting that the public interest is likely better served through the application of meaningful guidelines or principles, rather than adhering to rigid pricing rules or structures (lines 202-204 of Dr. Powell's direct testimony). Dr. Powell further states "as Bonbright explains the partial harmony between customers and investors of public utilities, 'justifies a public service commission in going far toward the *acceptance of the long-run interests of consumers as its sole responsibility*'" (lines 205-207, italics added). Yet his testimony is devoid of any discussion of the long-term benefits of a NEM program and NEM customers, even though RMP's planning documents (2015 and 2017 IRPs) show substantial benefits associated with the NEM program and NEM customers.

Q: But the IRP is just a generic planning document that must be filed biannually, it is not a document that can be used to evaluate short run investment decisions or cost apportionment between classes, correct?

A: No, that is incorrect. The IRP Standards and Guidelines were set up to provide RMP with the pertinent information necessary to make efficient investment decisions. The Standards and Guideline were designed to allow regulators the opportunity to evaluate RMP's investment decisions to make sure they were in the best interests of ratepayers rather than the best interests of RMP's shareholders. This was particularly true for investments that would not necessarily benefit RMP's shareholders but would benefit ratepayers. The IRP was primarily aimed at forcing RMP to invest in demand-side resources, when they were more beneficial to the ratepayer, rather than a more costly supply-side, even though supply-side provided greater profit potential to the investors. The IRP gives the Commission a regulatory tool to ensure that RMP makes efficient investments, particularly ones they are not inclined to make. As noted by Vivint Solar and other intervenors, utilities view distributed generation as direct competitors and will actively discourage such competition. The Division and the Commission should look at RMP's 2015 and 2017 IRPs and their various scenarios and results when evaluating different potential ways to meet consumers' needs while reducing revenue requirements and rates.

Q: How do you know what the intent of the Commission was in establishing the IRP Standards and Guidelines?

A: I was the primary staff member who drafted the order that established the Standards and Guidelines and worked closely with the Commissioners to be sure that it reflected their intent. They intended to use this document as a way to evaluate RMP's investments during a rate case. If RMP decided to invest in particular resources that were outside the recommendations of the acknowledged IRP, they did so at their own peril. If the investments selected turned out to have higher costs than other investments identified in the IRP, then RMP might not collect the full costs of those investments.

Q: What was the Division's position on placing a cap on participants in the NEM program?

A: The Division recommended that a cap be placed on the NEM program, based on the number of participants in the program as of January 1, 2018. Dr. Powell asserts that the current NEM program puts undue upward pressure on rates and states that this is unsustainable in the long run. Unfortunately, he does not present any empirical evidence to back this assertion.

Q: What is the Division's position on creating a separate class for NEM participants?

A: Dr. Powell states that "It is axiomatic that a net metering customer uses the utility's system differently than a typical residential customer. It is *not* yet clear to the Division exactly how that different use impacts the utility's costs…. typical measures, such as load factor, do not appear to warrant splitting NEM customers into their own class" (lines 272-274, italics added). So the Division admits that it does not know with certainty how the NEM program impacts RMP's costs or whether a separate class for NEM customers is justified. Dr. Powell, however, suggests that traditional measures do not capture the full spectrum of customer impacts and thus a separate class may be appropriate.

Q: What other factors did Dr. Powell analyze when comparing NEM and non-NEM customers?

A: Dr. Powell compared different averages such as the mean, median and modes when comparing NEM and non-NEM customers. He compared the different load profiles between NEM and non-NEM customers and found that NEM usage is higher in the early morning hours, lower during the day and slightly higher during the evening. This reflects the fact that NEM customers are generating power during the day and consuming a large portion of that solar generated power, onsite and behind the meter. The NEM customer will start to ramp up their demand for utility power as its solar power generation fades with the sun during the evening. However, the Division admitted that it does not know what the impact on the utility's costs would be as a result. Therefore, it is unknown what the impacts will be if the Commission agrees to segregate the NEM customers into a separate class. The Division's outside consultant believes there is not enough of a difference between NEM and non-NEM customers to warrant a separate class, but acquiesces to Dr. Powell's view and would not oppose the consideration of a separate class.

Q: Do you disagree with the analysis that Dr. Powell provided on the differences between the NEM and non-NEM customers?

A: No, not generally. Dr. Powell uses the data and conclusions drawn from RMP's load and solar production studies, but does not address or analyze whether that output of RMP's study was representative of the NEM class as a whole. As previously discussed, RMP's study lacked an adequate sample size particularly when the study relied upon stratified usage levels. Furthermore, the study did not weather normalize the results in a year that had very atypical weather. These critical weaknesses of the production study do not allow one to make solid statistical inferences about the general population. Having only thirty–six observations without any adjustments for weather normalization render the output of the study suspect, at best. Even with solid analytical logic for comparing two groups, if the data that you are using is suspect then you simply cannot draw any definitive conclusions. So, while I do not take issue with the logic of Dr. Powell's analysis of the difference between NEM and non-NEM customers, I cannot support the conclusions he draws from this analysis. Unfortunately, the Division did not address or analyze the statistical significance of the load or production profile studies.

Q: What conclusions of Dr. Powell's analysis of the differences between NEM and Non-NEM customers do you disagree with?

A: Dr. Powell makes a case that the load factor of NEM customers is lower than the load factor for non-NEM residential customers and concludes that "generally speaking, customers with a low load factor are costlier for the company to serve on a per kilowatt basis" (line 398). This is only true in a very general way. For example if a low load factor customer is not demanding power at the times of system peak and using power primarily during off-peak periods, then that low load factor customer is in fact less costly for RMP to serve. Each NEM customer who drops their consumption during a good portion of the peak period, even though they might be low load factor customers, may indeed be less expensive to serve than if they were not part of the NEM program. The real comparison should not necessarily be between NEM and non-NEM customers, but comparing the costs of serving NEM customers with and without their distributed power generation. If it is less costly to serve a NEM customer with generation than the same customer without generation, then distributed generation will help bring down costs for that customer and the system as a whole.

Q: Can you evaluate the testimony of the Division's outside expert witness Stan Faryniarz?

A: The Division's outside consultant took a decidedly different approach to evaluating the current NEM program and came up with a more measured and appropriate approach to dealing with the current NEM program. In some cases, his analysis seems to contradict the Division's ultimate recommendations. I agree with many of Mr. Faryniarz's conclusions and recommendations.

Q: Will you please specify which findings and recommendations of the Division's outside expert you agree with?

A: Yes, I will. Mr. Faryniarz's very first recommendation states, "Based on my analysis and findings described below, it is not necessary, for now and at the current level of penetration, to separate NEM customers into their own class" (lines 90-93 of his direct testimony). Vivint Solar very much agrees with this recommendation and believes that NEM customers should stay within the residential class for the foreseeable future. He also finds that "Traditional NEM excess energy compensation, at full retail rates, is not sustainable in the long-run with very high rates of DG penetration" (lines 101-102). Vivint Solar emphasizes that Mr. Faryniarz's statement would only hold true as he stated at very high rates of solar penetration and if the costs truly outweigh the benefits, in the long-term. RMP's current solar saturation level does not come close to broaching that level and thus the current NEM program is sustainable for the foreseeable future. Mr. Faryniarz also finds that "Since the Company is using a one-year historic test-period for its cost-benefit analyses as discussed from the Phase I Commission Order, it is likely that transmission, distribution, and environmental compliance avoided cost benefits may not be able to be properly captured" (lines 103-106). This is a key observation and finding, without properly evaluating these likely transmission, distribution and environmental compliance avoided costs, the Commission cannot effectively evaluate the long-term true benefits and costs of the NEM program. This is a fundamental weakness of the currently required analytical framework and it either should be taken into account by the Commission when making any decision on the short-term analysis of the benefits and costs of the NEM program or the Commission should alter their analytical framework to include all benefits and costs, including those realized in the long-term.

Q: Are there other findings and recommendations made by Mr. Faryniarz that you agree with?

A: Actually, Mr. Faryniarz took a very balanced approach to RMP's NEM program and I agree with almost all of his recommendations. He recommends opening a separate docket to explore the benefits and costs of DG on the distribution system, he recommends that administration and billing costs associated with NEM be assigned to NEM customers, and that transformer costs should not be included in a customer charge, but rather collected in an interconnection fee. He suggests that the transformer allocator in the NEM breakout analysis double counts customers; he recommends that the ultimate rate design for NEM customers should be implemented gradually, that a rate pilot study be ordered to gather data on time of use rates before implementing such rates, and finally that the determination of an equitable export rate that includes the long run costs and benefits is key to maintaining a sustainable NEM program. I find that these recommendations are eminently reasonable and the natural conclusion drawn from these recommendations is that there is no immediate threat to other ratepayers or the system from the current NEM program. There is no need at this time for a separate NEM class and that the one year historical test period does not capture all the benefits and costs of the NEM program. The other conclusion I draw from Mr. Faryniarz is that more information is required before the Commission makes any permanent changes to the NEM program, including: (i) a pilot program on TOU rate design, (ii) more information of load and production profiles of NEM customers; and (iii) more information on long-term costs and benefits of the program.

Q: Why is there such a large difference in the recommendations of the Division's outside expert witness and the Division's final policy recommendations?

A: I am not sure why there is such a discrepancy. It appears the Division staff believes there is a subsidy flowing from non-NEM customers to NEM customers, which is viewed as unfair and therefore unsustainable.

Q: Do you believe the NEM program creates a subsidy that is unfair and unsustainable?

A: No. The evidence on the record does not support the notion that there are inherent inequities in the NEM program when viewed from the correct perspective or that it is unsustainable in the near future. However, there are inequities in the current structure of residential rates. As cited in my direct testimony, most NEM customers are larger than average users of electricity; as such they pay more than their fair share of the costs of the residential customers. With a customer charge that is limited to only customer related costs and a volumetric rate, the fixed costs of the system are incorporated into the kWh charge. The more kWh you consume, the more fixed costs you pay. For most of these fixed costs, they should be shared equally amongst customers. The NEM program actually provides a remedy for this subsidy. Furthermore, as an economist, I believe that when evaluating a program one must look at efficiency first and equity second. Just because a program might create some inequities does not mean that it should be opposed. If the program leads to improvements for all ratepayers even if it creates inequities, the program should be approved. Economists call this a “Pareto” optimal reallocation. If no one is worse off and some are better off then such an allocation of resources is preferable. There may be a rare case when equity trumps efficiency, but it would have to be a case where the efficiency gains are small and the inequities are so large that the social discord of the inequities negates the efficiency gains. I think the Division has put equity considerations ahead of efficiency considerations and it has clouded their thinking and analysis.

<u>CRITIQUE OF THE OFFICE’S TESTIMONY</u>

Q: What testimony has the Office of Consumer Services provided to the Commission?

A: The Office presented testimony from three witnesses, Michelle Beck, the head of the

Office, an outside consultant, James Daniel and Danny Martinez, a utility analyst for the Office.

Q: What were the conclusions of the Office with regard to the NEM program?

A: The Office concludes that the NEM program will eventually require changes and should be phased out with a new "post metering" regime to be established by the Commission in a GRC. It recommends a transition period for existing NEM customers as well as a gradual transition for new NEM customers. The Office's witnesses cite a lack of good information on which to draw definitive conclusions about the program and requests that further studies be performed, so that after a GRC, the Commission can make corrective changes to the NEM program, if required. The Office rejects RMP's contention that drastic changes need to be made immediately and deems that their solution of a three-part tariff, with a demand charge and other proposed changes, are not in the public interest and punitive.

Q: What were the conclusions and recommendation made by the Office's outside consultant?

A: Mr. Daniels reviewed and evaluated RMP's compliance filing ordered by the Commission and made the following conclusions and recommendations. He accepts RMP's analysis that NEM customers have "different load characteristics and usage patterns than residential customers that do not have DG. Because of these differences, the current net metering NEM program, which applies the current residential rate to the residential DG customer's net energy usage, does not recover the cost of serving the NEM customers" (Line 70-74 of his direct testimony). He recommends that the new three-part rate Schedule 5 for residential NEM participants be rejected for the following reasons: a new rate schedule should not be adopted outside of a rate case because it is both piecemeal ratemaking and the 2015 cost information used to develop the new Company proposed NEM program is stale and cannot be relied upon to give accurate information needed for a new program or a new rate schedule. To further exacerbate the problem, Mr. Daniels notes that the cost functionalization, classification, and allocation methodologies used in the 2015 COSs are based on the results of RMP's prior general rate case which was in 2013. Thus, the Company's analysis is relying on data that is over four years old. In addition, the Company did not consider the impact of this new program on existing or future NEM participants. He also concludes that RMP's projected "exponential growth does not warrant their proposed quick fix change to the program given the fundamental problems with their proposal. Other rate designs such as time of use rates should be considered in lieu of their three-part demand charge tariff" (lines 86-88 of his direct testimony).

Q: Do you agree with Mr. Daniels' conclusions on RMP's compliance filing?

A: I agree with many of Mr. Daniels' conclusions and disagree with others. For example, I disagree with his conclusion that NEM customers' load factors and usage characteristics are sufficiently different to warrant his inference that the NEM class does not recover its costs. Unfortunately, he did not review or critically analyze the Company's methodology or processes used to reach RMP's conclusions on load and usage characteristics. He admits that he did not make a comprehensive review of the COS but only reviewed it in a general way (lines 137-138) and he further qualifies his confidence in the cost of service studies citing the fact that the data used is "stale" and seemingly unworthy of making crucial rate making decisions. He states that "given that rates have not been reset since

RMP's 2013 general rate case, the level of possible subsidization between other customers and NEM program customers is uncertain." (lines 153-154.)

I agree with his overall conclusions that there is no immediate need to implement the Company's proposed Schedules 5 and 136 because the level of penetration has not approached a critical stage. Mr. Daniels notes that in "response to UCE data request 9.6, RMP shows that the number of DG interconnection applications has dropped off significantly so far in 2017. In fact, in some months in 2017, the number of DG applications is lower than the number of DG applications for the same month of 2016" (lines 268-270). I agree that changes to rates for NEM customers in the absence of a GRC are piecemeal ratemaking and violate the prohibition against single item rate cases. A comprehensive look at the RMP's revenues and costs are necessary before changing rates. I approve of his recommended course of action set forth below.

> "The Commission should not approve RMP's proposed Schedule Nos. 5 and 136 in this proceeding. Instead, the Commission should rule that RMP has complied with its November 10th Order in conducting the prescribed cost of service studies to determine the costs and benefits of the net metering program, pursuant to section (1) of the Net Metering Statute. And the Commission should consider providing additional direction regarding a transition into a new rate design for residential DG customers, but rule that the final determination under section (2) of the Net Metering Statute -- i.e., establishing and implementing a new rate design and calculating new charges and/or tariffs can only be accomplished within RMP's next general rate case" (lines 201-209).

In addition, the Commission should consider Mr. Daniels' recommendation that any movement to a new rate schedule should be done gradually and consideration of existing NEM participants bill impacts are of critical importance, he notes that under the proposed new Schedule 5 tariff that existing NEM customers could see their bills increase by up to 1000%. (lines 246.) Although, I strongly disagree with changing rates for existing NEM customers, if by chance the Commission decides to pursue this change it should be done very gradually and over many years. I agree with his recommendation that TOU rates should be studied as a possible solution to any inequities or inefficiencies in the current or future NEM program.

Q: What are the fundamental conclusions and recommendations made by the Director of the Office, Michele Beck?

A: Ms. Beck recommends that the Commission find RMP's filing compliant with the Commission's November 15 Order. She recommends that the Commission reject RMP's request for a finding that current NEM rates are unjust and unreasonable. Furthermore she finds that RMP's proposal for drastically changing the NEM program with its proposed rate tariffs that include a demand charge is not in the public interest and that there is no compelling reason to change actual rates for NEM customers in this proceeding. She agrees with the Company that the current NEM customers do not cover their costs and that in the long run the NEM program is not sustainable. She concludes that even with different usage patterns between NEM and non-NEM residential customers a separate class for NEM customer is not necessary. The Office does not oppose RMP's request for a waiver of Utah 86 Admin. R. 746-312-13 to change the application fee, but they should be made contingent on the recommendations of witness Martinez. She recommends an approval of a new lower cap and suggests 10% of the

2007 peak demand or a time certain that would approximate this level of penetration. She agrees to the request for a waiver to the change in the application fee. She recommends that the Commission in this proceeding make strides to transition to a new program to accommodate distributed generation that would include a move to a TOU rate. The Commission should outline a plan that would adopt a new compensation rate for exported power and a transition plan that would provide some grandfathering of existing NEM customers and a gradual transition to the new rate for new post NEM customers.

Q: Could you please provide a critique of Michelle Beck's testimony?

A: Ms. Beck provides a measured perspective on the NEM program. However, the Office's acceptance of the Company's assertion that the NEM class is not covering its costs without any critical analysis of their methodology and attendant assumptions is inadequate and may be due to a lack of resources. Yet this acceptance of RMP's assertion lays the basis for the Office's conclusion that there is a subsidy flowing from non-NEM customers to NEM customers and for the need to reform the program. If the Office did review and analyze RMP's COS methodology, they did not include it in their testimony. Ms. Beck did analyze the proposed three-part tariff and came to an informed conclusion that demand charges are not appropriate for residential customers. Her conclusion that the current NEM program is not sustainable in the long run with very high levels of penetration is also a reasonable conclusion as well as her recommendation for an orderly transition to a new distributive generation regime.

Q: Did Ms. Beck make any recommendations for a new rate design under her "post net metering" regime?

A: She recommends that the Commission adopt a new rate structure that includes a mandatory TOU consumption rate for NEM customers that includes a facilities charge and an updated consumer charge that includes the added cost of the new meter. She recommends that a separate export rate should apply to excess generation and be determined in a manner similar to Schedule 37 avoided costs proceedings. The export rate should include additional costs and benefits associated with distributed generation. I question her recommendation for a Commission determined rate design in this proceeding. I believe that requiring a mandatory TOU rate design and a facilities charge is premature. The current record simply does not have the evidentiary support to effectively evaluate the pros and cons of TOU or determine whether it is an appropriate structure for cost recovery. The facilities charge has had little or no discussion or analysis in this docket and should not be considered in this case. She recommends an hourly or less interval to determine how much energy is being exported and that distributed generation that is simultaneously consumed by the NEM customers should be treated as “behind the meter”. Although, I believe that a more gradual move from monthly netting of energy to daily netting would be more appropriate, a move to shorten the netting interval might not be too detrimental to the solar industry. As far as I know, if an hourly netting period is implemented it would be unique among investor-owned utilities in the United States. Such a major change would require access to data not currently available for residential customers, and require a major shift for the solar industry. Her proposal to move from a kWh to a dollar banking of credits should also be investigated as a way to better compensate future NEM customers for their excess generation.

Q: Does the Office recommend a transition period for this move to a new post net metering regime?

A: Yes, it does. It proposes a twelve-year grandfathering period for existing NEM customer and a set dollar compensation for exported energy starting at nine cents and transitioning to a formulaic rate at the end of twelve years. The Office attempts to segment existing NEM customers, new transitioning NEM customers and post NEM DG customers in order to lessen the impacts of its proposed regulatory change. I believe that this is a good faith attempt at trying to be fair to this class of customers. However, existing NEM customers have made substantial investments and some have entered into lease agreements that have 20-year periods. A change in regulatory policy for these customers could result in substantial losses. I recommend that the Commission grandfather these customers for twenty years. Perhaps a slightly shorter period could be extended for the transitional NEM customers. The nine cents fixed rate should also be reconsidered as it will not allow firms in the solar industry to be able to make sales and could lead to the demise of the industry. I believe that it is incumbent on the regulatory community to recognize these financial agreements and extend the grandfathering period to account for these commitments.

Q: What do you recommend for a solution to the potential long-term problem of net metering?

A: Well, first, I recommend that the Commission keep the NEM program as is in the near future. The preponderance of the evidence on the record indicates that the subsidy as measured in the test year is negligible at current penetration rates. The Commission should reset the cap at the Office's recommended ten percent of the 2007 peak load to protect against any issues that may occur at high levels of penetration of NEM customers. Furthermore, the Commission should order that any new NEM customers must agree to participate in a load and production profile study which will require placing monitoring equipment on their solar systems. The study should have a large enough sample to provide solid statistical inference on the NEM population as a whole. This sample should include at least one observation per usage strata for each county. The study should include multiple years of data and weather normalize the results particularly if only one year's data is used. The Commission should also order a new proceeding that will look at the long run costs and benefits of the NEM program; this will provide the necessary information to effectively evaluate the pros and cons of the program. It should also start a proceeding to determine the appropriate export rate for NEM customers, which incorporates the findings in the proceeding docket. This may take place in a single docket with a phase one looking at costs and benefits and phase two designing an export rate for NEM customers or new rate structure for the residential class that includes both NEM and non-NEM customers. This process will allow the Commission more information to be collected on the NEM program and a better procedure to come up with a long-term solution that will be fair to all ratepayers and the utility.

Q: Does this conclude your rebuttal testimony?

A: Yes.

CERTIFICATE OF SERVICE

I hereby certify that on July 25, 2017, I sent a true and correct copy of the pre-filed rebuttal testimony of Richard Collins for Vivint Solar, Inc. in Docket No. 14-035-114 by email to the following:

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