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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** **Utah Clean Energy – Initial Comments**

Pursuant to the *Notices of Comment Period and Scheduling Conference* issued by the Commission in the above-captioned proceeding on November 21, 2014, Utah Clean Energy submits these initial comments regarding the specific questions outlined therein and reviewed below.

BACKGROUND

The current docket was created at the conclusion of Rocky Mountain Power's ("the Company") 2014 general rate case, in which a "net metering facilities charge" was, ultimately, the only contested issue. Because the current docket is an outgrowth of that rate case and the evidentiary deficiencies therein, Utah Clean Energy begins these comments with a review of Commission findings and lessons learned, as well as Utah's net metering statute.

The Company offers net metering service to residential and non-residential customers, pursuant to Utah Code Ann. § 54-15-101, *et seq.*, under its Electric Service Schedule No. 135 ("Schedule 135"). According to Utah Code Ann. § 54-15-102, a "net metering program" is a

program administered by a utility whereby a customer with on-site electricity generation (that meets specific criteria) may:

(a) generate electricity primarily for the customer's own use;
(b) supply customer-generated electricity to the electrical corporation; and
(c) if net metering results in excess customer-generated electricity during a billing period, receive a credit as provided in Section 54-15-104.[1]

Section 54-15-104 describes how credit for excess generation, if any, may accrue over the course of a monthly billing cycle to offset the next month's bill.[2]

In the 2014 Legislative Session, the statute was amended to direct the Commission to evaluate the costs and benefits of the Company's net metering program and make a rate determination (including the option to make no changes) in light of that evaluation. Specifically, the statute directs the Commission to:

(1) determine, after appropriate notice and opportunity for public comment, whether costs that the electrical corporation or other customers will incur from a net metering program will exceed the benefits of the net metering program, or whether the benefits of the net metering program will exceed the costs; and
(2) determine a just and reasonable charge, credit, or ratemaking structure, including new or existing tariffs, in light of the costs and benefits.[3]

In its Report and Order in Docket No. 13-035-184, the Commission explained its interpretation of this mandate. The Commission stated:

> We interpret Utah Code Ann. § 54-15-105.1 as delegating to the Commission the responsibility to gather and evaluate relevant facts, opinions and public comments, and to determine whether the costs of PacifiCorp's net metering program will exceed the benefits of the net metering program, or *vice versa*… [W]e interpret Utah Code Ann. § 54-15-105.1 as directing a determination under subsection (1) before the determination under subsection (2) is made.[4]

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[1] Utah Code Ann. § 54-15-102(11) (2014).
[2] "If net metering does not result in excess customer-generated electricity during the monthly billing period, the electrical corporation shall bill the customer for the net electricity, in accordance with normal billing practices." Utah Code Ann. § 54-15-104(2) (2014).
[3] Utah Code Ann. § 54-15-105.1 (2014).
[4] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 58.

In other words, before the Commission may make a rate determination regarding net metering customers, it must first investigate (through a public process) and determine the costs and benefits of the Company's net metering program.

In the 2014 general rate case, the Company proposed adding a monthly facilities charge of $4.65 to Schedule 135 for residential net metering customers as part of its broader cost of service and rate design proposal.[5] The Commission denied the Company's proposal, in light of Utah Code Ann. § 54-15-105.1 (the "net metering statute"), because of 1) inadequate evidence of net metering program costs and 2) insufficient evidence of net metering program benefits.[6] The Commission then established a process (this docket) for fulfilling its obligations under § 54-15-105.1.[7]

The Commission gave some direction, in the form of its findings in the rate case, on appropriate net metering program cost considerations. First, the Commission concluded that, "[s]imply using less energy than average, but about the same amount as the most typical of PacifiCorp's residential customers, is not a sufficient justification for imposing a charge, as there will always be customers who are below and above average in any class. Such is the nature of an average."[8] Although this finding applies much more broadly, it is nevertheless relevant to the net metering issue where customers' behind-the-meter decisions may be scrutinized.

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[5] The Company filed its general rate case on January 3, 2014, prior to the 2014 legislative session. At that time, Utah's net metering law prohibited the imposition of an additional fee for net metering customers unless "the governing authority, after appropriate notice and opportunity for public comment: (a) determines that: (i) the electrical corporation will incur direct costs from the interconnection or from administering the program that exceed benefits, as determined by the governing authority, resulting from the program; and (ii) public policy is best served by imposing a reasonable fee or charge on the customer participating in the net metering program rather than by allocating the fee or charge among the electrical corporation's entire customer base." Utah Code Ann. § 54-15-105 (2013) (*Repealed*). The current net metering law (§ 54-15-105.1) took effect during the general rate case proceedings, and the Commission attempted to fulfill its obligation pursuant to § 54-15-105.1 in that forum. Nevertheless, as described further herein, the record was insufficient to do so as directed by the statute.

[6] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), pages 60-69.

[7] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 69.

[8] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), pages 67-68.

Additionally, the Commission directed parties to evaluate costs uniquely attributable to the net metering program. In the rate case, the Commission found that the record before it lacked evidence distinguishing "costs net metered customers *uniquely cause*," making the determinations called for under the net metering statute impossible.[9] In the face of arguments from the Company that net metering customers are a clearly distinguishable subgroup among the residential class, the Commission found that it, "cannot determine from the record in this proceeding that this group of customers is distinguishable on a cost of service basis from the general body of residential customers."[10] The Company's assertion was not supported by any empirical data.[11] In summary, net metering cost/benefit analysis needs to be based on empirical evidence unique to net metering customers.

ANALYTICAL FRAMEWORK FOR EVALUATING NET METERING COSTS AND BENEFITS

Introduction

In the current docket, the Commission intends to establish an "appropriate analytical framework" for making the required determinations under the net metering statute. To that end, the Commission has asked for comments on a series of questions. Utah Clean Energy will answer them in order:

- Question 1. We next invite comments by interested parties on whether the traditional costs and benefits test equations (e.g., the utility cost test, the total resource cost test, the ratepayer impact measure test, and the participant test) and metrics (e.g., benefit to cost ratio) used to evaluate utility-sponsored demand side management programs can and should be applied to examining the costs and benefits of PacifiCorp's net metering program. In our order in Docket No. 09-035-27, we approved the use of such tests for the evaluation of utility-sponsored small-scale renewable resource programs. We request

[9] *See* Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 63 (emphasis added).
[10] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 67.
[11] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 62. For example, facilities charge proponents did not present evidence demonstrating that usage levels or load characteristics of net metered customers were materially different from typical residential customers, nor did proponents show statistically significant data regarding net metering customers' contributions to distribution peaks, system coincident peak or non-coincident class peaks. *Id.* at 62-63.

comment on the applicability of some or all of these tests for examining the costs and benefits of PacifiCorp's net metering program.

- Question 2. We request comment on or description of any other type of analysis for examining the costs and benefits of PacifiCorp's net metering program.
- Question 3. We request that interested parties consider the consistency of any proposed analysis with the statutory definition or requirements of the net metering program.
- Question 4. We also request parties comment on whether the types of analyses to be used will vary depending on whether the analysis examines residential or non-residential net metered customers.[12]

Question 1. Whether the traditional costs and benefits test equations and metrics used to evaluate utility-sponsored demand side management programs can and should be applied to examining the costs and benefits of PacifiCorp's net metering program.

In recent years, the increasing popularity of small-scale, distributed generation – like rooftop solar PV installations – has resulted in efforts to quantify the impact of these new sources of electricity. Distributed solar mimics the characteristics of other demand-side resources by producing a portion of a customer's electricity on site and therefore reducing their overall electricity purchases. The Commission's consideration of whether traditional costs and benefits tests for demand-side resources should be applied to examining the costs and benefits of PacifiCorp's net metering program is well timed given the growth of distributed generation.

In February 1994, recognizing the need to quantify the value of demand side resources and evaluate the cost-effectiveness of energy efficiency measures, the Commission issued a directive to develop performance standards for demand side resources in Docket No. 92-2035-04, *In the Matter of Rate Making Treatment of Demand-Side Resources and the Analysis of Regulatory Changes to Encourage Implementation of Integrated Resource Planning*. In response to this directive, the Performance Standards Subcommittee outlined recommended performance standards for demand side resource programs in "Demand Side Resource Cost Recovery

[12] Docket No. 14-035-114, *Notices of Comment Period and Scheduling Conference* (issued November 21, 2014), page 3-4.

Collaborative, Final Report to the Commission, Appendix VII."[13] This report recommended the adoption of five cost-effectiveness tests, derived from the California Standard Practice Manual (SPM), to evaluate DSM programs: the Utility Cost Test, the Participant Cost Test, the Ratepayer Impact Measure Test, the Total Resource Cost Test, and the PacifiCorp Total Resource Cost Test.[14]

The 1995 report did not address the applicability of these tests to resources which were nascent at the time, such as renewable on-site generation, and in its order approving Docket No. 07-035-T04 (issued April 2 2007), the Commission recognized the need to revise the report due to changes in demand side resource acquisition, for small-scale renewable generation.[15] The Commission directed the Company, The Division, and the DSM Advisory Group to make recommendations on the existing demand side management guidelines, resulting in the 2009 "Utah Demand Side Management and Other Resources Benefit and Cost Analysis: Guidelines and Recommendations." The 2009 report found that the recommendations made in the 1995 report were still generally valid, but recommended several updates in consideration of changes in the demand side resource environment.

The Utah DSM Advisory Group determined that all five cost-benefit tests remained useful in understanding program effectiveness, and recommended that the Utility Cost Test should serve as the threshold test in determining program prudence.[16] The Utility Cost Test, described in more detail below, captures revenue requirement impacts of a demand-side resource

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[13] *Available at:* http://www.psc.state.ut.us/utilities/electric/09docs/0903527/042709exD.pdf

[14] Governor's Office of Planning and Research, State of California, *California Standard Practice Manual: Economic Analysis of Demand-Side Programs and Projects* (2002), *available at*: http://www.calmac.org/events/spm_9_20_02.pdf.

[15] Docket No. 09-035-27, Rocky Mountain Power and Utah Demand Side Management Advisory Group, *Utah Demand Side Management and Other Resources Benefit and Cost Analysis Guidelines and Recommendations*, page 3 (hereinafter *2009 DSM Cost Analysis Recommendations*).

[16] *2009 DSM Cost Analysis Recommendations*, page 4.

compared to the utility's alternative (in the absence of the program). The DSM advisory group also determined that "absent more appropriate economic tests, small-scale renewable resources may be evaluated on the same basis as energy efficiency and load management. The Commission may approve small-scale renewable resource projects that fail one or more of the economic tests but are determined to be in the public interest."[17]

As described later in our comments, we recommend that the Commission continue to use the five cost tests, with the Utility Cost Test as the threshold test for evaluating the cost effectiveness of the Company's net metering program.

Review and critique of the five tests.

Each of the five DSM cost-effectiveness tests is designed to evaluate the impact of a demand side management program from the perspective of a different user. Based on the variables chosen to represent the costs and benefits for each of these tests, the cost-effectiveness of a given measure is determined in the form of a benefit to cost ratio. If the resulting ratio is greater than one, it means that the measure is cost-effective from a particular perspective (because the benefits accrued from the program exceed its costs). A benefit to cost ratio less than one reflects higher costs than benefits from a particular perspective.

Participant Cost Test (PCT). This test evaluates the economics of a program from the perspective of participating customers. It compares the savings accrued by the participating customers, in terms of bill reductions, against net costs incurred for the program. PCT is largely influenced by the level of incentives, as higher incentives enable a benefit to cost ratio which is greater than one, providing a net economic benefit to program customers.[18]

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[17] *2009 DSM Cost Analysis Recommendations*, pages 5-6.

[18] State of Nevada Public Utilities Commission, *Nevada Net Energy Metering Impacts Evaluation (*Energy and Environmental Economics, Inc. 2014), *available at:*

Utility Cost Test (UCT). The utility cost test also known as the Program Administrator Cost Test (PACT) measures the cost-effectiveness of a program from the utility's perspective by directly capturing the revenue requirement impact of a demand side resource.[19] This test includes program implementation costs incurred by the utility and compares them against the costs which would be borne by the utility but for the program under consideration. If benefits exceed costs, the revenue requirement impacts (or total costs to the utility) are minimized as a result of the program.

Ratepayer Impact Measure (RIM). This test, also known as the Non-Participant Test, evaluates a program from the average customer's perspective. It measures overall distributional impacts of a program,[20] but does not measure the cost-effectiveness of the program.[21] It compares utility costs to benefits (like the UCT), however costs also include the utility's lost revenues. A RIM test result lower than one indicates that, due to the program, average utility rates may be increased in the subsequent rate case because revenue will decrease as a result of the energy savings.

The RIM test is the most problematic among the five cost-effectiveness tests. As indicated above, it does not actually measure cost-effectiveness. For example, even when a program earns a lower RIM result, it may still be the most cost-effective means of meeting load because the full array of long-term investment options considered in utility resource planning

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http://puc.nv.gov/uploadedFiles/pucnvgov/Content/About/Media_Outreach/Announcements/Announcements/E3%20PUCN%20NEM%20Report%202014.pdf?pdf=Net-Metering-Study.

[19] *2009 DSM Cost Analysis Recommendations*, page 14.

[20] Daykin, E., Aiona, J., & Hedman, B., *Whose Prespective? The Impact of the Utility Cost Test.* (The Cadmus Group, Portland).

[21] *2009 DSM Cost Analysis Recommendations*, page 16.

may not have been included in the avoided costs used to evaluate the program.[22] Furthermore, *any* utility investment will increase utility rates compared to no investment and, in that sense, all utility investments should therefore "fail the RIM test."

In addition, in the context of distributed generation, lost revenues should not be considered new incremental costs created by a net metering program. Rather, they are simply a result of the need to recover existing costs from fewer sales. The same thing holds true for other demand-side programs. Since lost revenues are more like sunk costs, they should not be used to assess future resource investments as they would be incurred regardless of whether the project is undertaken or not.[23]

Total Resource Cost Test (TRC). The TRC test captures the economic efficiency of a program over the utility's service territory.[24] The costs included in the TRC test are the full costs borne by the utility, including administrative costs of the program, as well as the costs incurred by customers directly participating in the program. The benefits included in this test are the avoided supply costs utilizing the net program savings impacts (savings net of the changes in energy use that would have occurred in the absence of the program).[25] If the program under consideration passes the TRC test, i.e. the resulting ratio is greater than one, this indicates that the program is less costly than the alternative (supply-side) option, and the service territory will receive a net economic benefit from the program.

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[22] State and Local Energy Efficiency Action Network, *Analyzing and Managing Bill Impacts of Energy Efficiency Programs: Principles and Recommendations* (Synapse Energy Economics, Inc. 2011), available at: https://www4.eere.energy.gov/seeaction/sites/default/files/pdfs/ratepayer_efficiency_billimpacts.pdf.

[23] Public Service Comission of Mississippi, *Net Metering in Mississippi* (Synapse Energy Economics, Inc. 2014), *available at:* http://psc.utah.gov/utilities/electric/14docs/14035114/261424Exhibit%20B%20to%20Homes%20Report%20-%20Net%20Metering%20in%20Mississippi%2010-9-2014.pdf.

[24] *Id.*

[25] *2009 DSM Cost Analysis Recommendations*, page 15.

Many states in the country currently rely on the TRC as means to determine the cost-effectiveness of demand side resource programs because it indicates whether a supply side or demand side resource is less costly, regardless of who is paying for the resource. However, in the state of Utah and in several other states,[26] the UCT serves as the threshold test for DSM cost-effectiveness evaluations as the UCT accurately compares the costs borne by the utility against the supply-side alternatives.[27] Utilizing the UCT helps determine which programs have the ability to lower the utility's costs, and therefore more consistently compares demand-side resources against utility resources. Therefore, Utah Clean Energy agrees with the recommendation to use the UCT as the threshold test.

Societal Cost Test (SCT). The SCT is a variation of the TRC test that attempts to quantify societal benefits, including avoided externalities and economic development benefits from a program.[28] Externalities considered in the SCT may include increased system reliability, avoided environmental costs, and non-energy benefits (such as an increase in the cost of carbon, decreased criteria pollutant emissions, adaptation to climate change, increased comfort in buildings, increased jobs, etc.). In many cases, when calculating the Net Present Value (NPV) of a program using the SCT, a different discount rate (usually lower) is also used. The SCT uses a lower discount rate so that the societal benefits in later years are not unduly discounted.[29]

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[26] Daykin, E., Aiona, J., & Hedman, B., *Whose Prespective? The Impact of the Utility Cost Test.* (The Cadmus Group, Portland).

[27] Daykin, E., Aiona, J., & Hedman, B., Whose Prespective? The Impact of the Utility Cost Test. (The Cadmus Group, Portland).

[28] State of Nevada Public Utilities Commission, *Nevada Net Energy Metering Impacts Evaluation (*Energy and Environmental Economics, Inc. 2014), *available at:* http://puc.nv.gov/uploadedFiles/pucnvgov/Content/About/Media_Outreach/Announcements/Announcements/E3%20PUCN%20NEM%20Report%202014.pdf?pdf=Net-Metering-Study.

[29] *Id.*

Recommendation. Utah Clean Energy recommends that all five DSM cost tests can be used to provide information about the costs and benefits of PacifiCorp's net metering program, and that the Utility Cost Test provides the most relevant picture of the total impact of PacifiCorp's net metering program. It is critical to consider, when using traditional cost-effectiveness tests, that the benefits utilized for a particular test represent benefits from a specific, defined perspective, and do not represent the entire benefits of the Company's net metering program. The value of utilizing traditional cost-effectiveness tests lies in evaluating a program from a number of different perspectives with well-established and commonly-used methods. The Commission's obligations under 54-15-105.1(2), 54-3-1 and 54-3-8 to establish just and reasonable and non-discriminatory rates remain critical considerations throughout this process.

Question 2. Comments on or description of any other type of analysis for examining the costs and benefits of PacifiCorp's net metering program.

Utah Clean Energy recommends the traditional cost tests (designed to show cost-effectiveness as a ratio) as a useful tool for evaluating net metering from different perspectives. In this section, Utah Clean Energy will offer some practical advice for utilizing traditional cost-effectiveness tests as applied to net metering analysis specifically.

Use a transparent, accessible model.

It is the Commission's stated intention to establish an appropriate analytic framework for performing the cost/benefit analysis required by Utah's net metering statute. Utah Clean Energy recommends that such an appropriate framework, consistent with the net metering statute's concern with public process, must be a tool that not only the utility has access to, but that other parties may use in dockets before the Commission. Indeed, the Commission has stated:

> In a further phase of this docket, a general rate case or other appropriate proceeding, the Commission will examine the costs and benefits that result from applying data to the

> approved analytical framework, as such results are *presented by interested parties*, and ultimately make the required determination under [Utah's net metering statute].[30]

The analytical framework should include the following considerations, with the capability to test sensitivities, and to be adjusted, as reasonable and necessary when circumstances change over time:

- Discount rate
- Technology life-span
- Utility load forecasts
- Market penetration levels of net metered distributed resources
- Utility data necessary for conducting cost/benefit tests[31]

Net metering is different from other demand-side resources in a number of ways that are significant for modeling, derived primarily from the fact that net metering is a state policy rather than a utility sponsored incentive program. Two of these differences, which are relevant for cost-effectiveness modeling, are notable here. First, as a statutorily enacted program (rather than a utility-sponsored incentive program), incentives, which are a typical component of demand-side cost-benefit analysis, are not a necessary consideration in net metering analysis. In the current analysis, there is no incentive. While the Company has a solar incentive program (which has undergone cost-effectiveness testing), that program is not based in statute, operates independently of the net metering program and is unrelated to Utah's net metering law.

The lack of utility incentives is an important modeling consideration, particularly when utilizing traditional cost tests. With the exception of the Company's limited solar incentive program, the utility is not actually procuring the distributed resource, it is not necessary to use the utility's cost of capital as a discount rate. Especially when the net metering customer is

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[30] Docket No. 14-035-114, *Notices of Comment Period and Scheduling Conference* (issued November 21, 2014), pages 2-3 (emphasis added).

[31] Utah Clean Energy is not recommending that confidential or sensitive business information be made public as part of an analytical framework. Rather, the framework should have the capability to receive and process all necessary utility data for running the cost-effectiveness tests.

making their investment based on factors such as future benefits (social, environmental or public health) or the current inflation rate, it is appropriate to use a discount rate that is more representative of the interests involved.

Second, net metering customers are able to export energy to the Company's grid. This is unique to customers with on-site generation and raises the question whether to consider all generation connected to the net meter, or just the generation that is exported back to the grid (above what is consumed on-site). This question will be addressed in response to Question 3, below.

Cost and Benefit Components.

There are a surprising and growing number of reports and meta-analyses regarding the types of costs and benefits properly considered in net metering evaluations.[32] Some offer more technologically or socially advanced lists of benefits while others are more limited. The following is a summary of a number of the numerous reports available today:

Category	**Benefit/Cost**
Grid services	Avoided energy generation
	Avoided system losses
	Avoided generation capacity
	Avoided transmission capacity
	Avoided distribution capacity
	Ancillary services (e.g., voltage control, regulation reserves, contingency reserves, flexibility reserves)
Financial services	Fuel price hedge

[32] *Methods for Analyzing the Benefits and Costs of Distributed Photovoltaic Generation to the U.S. Electric* System, National Renewable Energy Laboratory (2014); *A Regulator's Guidebook: Calculating the Benefits and Costs of Distributed Solar Generation*, Interstate Renewable Energy Council, Inc. (October 2013), *available at*: http://www.irecusa.org/2013/10/experts-propose-standard-valuation-method-to-determine-benefits-and-costs-of-distributed-solar-generation/; Lazar, J., Colburn, K., *Recognizing the Full Value of Energy Efficiency (What's Under the Feel-Good Frosting of the World's Most Valuable Layer Cake of Benefits)* (Regulatory Assistance Project, September 2013), *available at*: http://www.raponline.org/document/download/id/6739; *A Review of Solar PV Benefit and Cost Studies*, Rocky Mountain Institute Electricity Innovation Lab (April 2013), *available at*: www.rmi.org/elab_emPower.

	Market price response
Security	Reliability and resilience
Environmental	Carbon pollution and impacts
	Criteria pollutants
	Water use
	Land use
Social	Economic development
	Public health

Among the studies Utah Clean Energy reviewed, there is high agreement that avoided utility costs (in the "grid services" category) should be considered in net metering analysis, with less consensus on other factors. Environmental costs, because relatively easy to quantify, seem to be the most utilized category of benefits after grid services.

To the extent certain benefits are not considered in cost/benefit analysis, they may be appropriately considered as the Commission undertakes setting just and reasonable rates, not just for net metering customers but all customers, pursuant to Utah Code Ann. § 54-3-1. When the rate design segment of this proceeding, or a subsequent rate case proceeding is reached, the Company should be allowed to recover the costs of its prudent investments through just and reasonable rates, and the rate design must send appropriate price signals to encourage consumer behaviors that reduce overall costs on the system.

Question 3. Consider the consistency of any proposed analysis with the statutory definition or requirements of the net metering program.

Excess Customer Generated Electricity.

One of the issues that was particularly muddled in the rate case was what (or how much) customer-generated power contributes to the accounting of the "costs of a net metering program," i.e., all generation or just generation in excess of that consumed on-site. The Utah

statute, as this Commission has recognized,[33] makes it clear that just the generation in excess of that consumed on site is relevant to the net metering program and therefore relevant to net metering cost/benefit analysis.

As described above, the Utah statute defines a net metering program as a utility sponsored program whereby a customer with on-site generation may generate electricity primarily for their own use; supply "customer-generated electricity" to the utility; and receive credit against their bills for "excess customer-generated electricity" that accrues over the course of a monthly billing period (as described in § 54-15-104).

"Customer-generated electricity" and "Excess customer-generated electricity" are both statutorily defined terms. "Customer-generated electricity" is defined as electricity generated by a customer that exceeds their consumption (at any given moment) and is supplied to the utility,[34] and "*excess* customer-generated electricity" refers to the amount of customer-generated electricity in excess of consumption that may accrue over the course of a monthly billing cycle, as measured at the utility's meter.[35] Customer-generated electricity that exceeds consumption, whether instantaneous or aggregated for billing purposes, is the only electricity generation that is relevant under Utah's net metering statute.

The Commission recognized this point in its *Report and Order* in Docket No. 13-035-184. In addressing an alternative proposal from the Company to consider the "costs" of net metering as the power net metering customers produce multiplied by the Company's retail rate, the Commission stated:

> If PacifiCorp intends this alternative view of net metering program cost to apply the retail rate to total net metered customer generation, it is not readily apparent how the

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[33] *See infra*, note 36.
[34] *See* Utah Code Ann. § 54-15-102(2) (2014).
[35] Utah Code Ann. § 54-15-102(6) (2014).

> production and consumption of net metered power on the customers' side of the meter harms or causes costs to other residential customers. Further, such an approach does not appear to be consistent with the statutory definition governing charges or credits for "net electricity." Indeed, the Net Metering Code excludes the amount of the net metered customers' production and consumption behind the metering in the definition of electricity eligible for credit.[36]

In order to identify the costs of the Company's net metering program - the costs specific and attributable to the net metering program - it is necessary to limit the examination of costs to those associated with customer-generated electricity that exceeds consumption.

Just and Reasonable Rates.

In the rate case, the Company expressed concern over "fixed cost" recovery, and proposed a net metering facilities charge to address that concern. Nevertheless, fixed cost recovery is not a net metering-specific issue by any means. That is why Utah Code Ann. § 54-15-105.1(2), which directs the Commission to determine just and reasonable rates for net metering customers, consistent with the Commission's obligation to set just and reasonable rates for all customers (under Utah Code Ann. § 54-3-1), is a critical consideration both in this part of the net metering proceeding as well as subsequent endeavors.

The Commission must consider practicable options for designing and implementing rate designs for all customers that facilitate prudent fixed cost recovery concerns while simultaneously resulting in fair, equitable, cost-justified and just and reasonable rates. Because demand response, energy efficiency and distributed solar generation all happen behind the meter, net metering analysis should not occur without consideration for the impacts of all other behind-the meter decisions customers make that may have more substantial impacts to the Company's system than net metering.

[36] Docket No. 13-035-184, *Report and Order* (issued August 29, 2014), page 64.

The rate decisions the Commission ultimately implements for all customers need to be consistent with the objective of valuing and rewarding smart customer choices; giving fair value for the Company's services while also allowing customers to receive fair value for the benefits their energy choices bring to the Company and other customers. This new frontier should be considered seriously. Smart and engaged energy efficient and distributed solar customers are the type of customer we want to encourage, rather than undermine, in order to reduce long-term costs and risks. This type of customer is increasingly important as we transition to a cleaner, smarter energy future and as the utility transitions to an energy services utility.

Question 4. Comments on whether the types of analyses to be used will vary depending on whether the analysis examines residential or non-residential net metered customers.

Utah Clean Energy recommends that the analysis include both residential and non-residential net metering. The types of analyses described above can be used for all types of retail net metering customers, not just residential. The largest components of the value analysis, i.e. avoided energy costs, and avoided generation and transmission capacity costs will be virtually the same across customer classes. As always, there is a trade-off between accuracy and simplicity. For example, residential solar installations tend to be on angled roofs, providing more direct incidence of sunlight, provided the roof is oriented to the south.

The orientation of the home is out of the control of the installer, so residential installations may not always have optimum orientation. Non-residential installations are often on flat commercial roofs, reducing tilt angles to about 10 degrees, but allowing optimum orientation. Because the extent of solar installations in Utah is still relatively small, it is possible for the initial characterization of the solar resources in the State to encompass all installations. Indeed, the Company should have collected this data as systems were installed. The solar

resource load factor is unlikely to vary a great deal between residential and non-residential applications, allowing for a more simplistic analysis.

While most of the value component results will be essentially the same between residential and non-residential, the value of potentially avoided distribution costs will likely be greater for non-residential distribution circuits due to the higher correlation of the solar generation profile with the commercial load profile.

There is remarkable similarity in load profiles for commercial customer classes across the country. The same is true for residential customer classes. However, the distribution system is not homogeneous. There are many distribution circuits with high proportions of residential loads, and many with high proportions of commercial loads, as well as many with mixed load profiles. The greater the load share of commercial loads on a given circuit, the greater the benefit provided by distributed solar resources to that circuit. The analyses should consider the relative proportions of commercial and residential loads on the distribution circuits to capture the appropriate cost savings.

Finally, and perhaps most importantly, the cost side of the cost-benefit equation is different for commercial customers. Commercial, including irrigation rates, recover a large portion of the revenues through a demand charge; however the demand charge is largely unaffected by the installation of solar. A study commissioned by Arizona Public Service, performed by Navigant Consulting, found that monthly peak demands, and thus demand revenue, was reduced by about 9% (of the AC capacity of the on-site solar system) on average throughout the year for a typical customer.

In practical terms, for the analyses discussed above, there is very little “lost revenue” that would be considered a cost for commercial customers. At the time of the rate case in 2014, approximately 46% of net metered load belonged to customers with demand charges, and 41% to

residential customers. The remainder were sited on Schedule 23, Small General Service customers for which it was unclear which type of charge was applicable.

PROCESS RECOMMENDATIONS

Utah Clean Energy appreciates the Commission's stated goal, "The Commission envisions that a collaborative process including technical conferences will be a key feature in this step of the docket." [37] We further appreciate the scheduled technical conferences in this docket. These technical conferences will offer the opportunity to share technical information and analytical framework, so that even if the parties do not agree, at least there is a shared understanding and less likelihood of miscommunications in written testimony.

Intervenors and the Utah regulatory community have a strong precedent of collaboratively and effectively addressing complex technical and regulatory issues. For example, shortly after Utah Clean Energy was founded in 2001, it had the opportunity to be involved in a collaborative stakeholder and regulatory process that eventually led to the development and implementation of the Company's demand-side resources tariff rider and a subsequent suite of cost-effective demand side resources. This process included a series for workshops and technical sessions, and an outside firm, the Tellus Institute, conducted analysis. The analysis of the costs and benefits of the net metering program and eventual exploration of potential rate designs is similarly complex, but there are a variety of experts within the Company and across the country may provide important technical information to inform this docket.

Utah Clean Energy concurs with the Commission's scheduling order and hopes that much of the information sharing and learning about technical issues, alternative methods of analysis,

[37] Docket No. 14-035-114, *Notices of Comment Period and Scheduling Conference* (issued November 21, 2014), page 2.

benefit categories, etc. can be done through a series of technical conferences that will be useful for all intervenors.

As a starting point, Utah Clean Energy suggests the following topics generally, with more specific sub-topics and presenters to be determined prior to each technical conference:

- A review of NEM cost/benefit analytical frameworks that have been used. These methods can be discussed generally without specific data.
- A series of technical conferences on cost and benefit categories and how to gather and utilize utility data in cost-effectiveness tests.
- A technical conference on technologies that drive peak demand in the residential and commercial sectors.
- A technical conference on rate designs.

To help facilitate information sharing, Utah Clean Energy recommends a facilitated process for technical conferences and workshops. This would not only help provide for a more collaborative process but also help achieve productive outcomes from these conferences. If the utility and regulators agree, Utah Clean Energy is happy to discuss funding opportunities and provide assistance with the selection of appropriate facilitators.

Furthermore, once an analytical framework is determined, Utah Clean Energy suggests that an independent, third-party be selected to conduct cost/benefit analysis of net metering pursuant to the recommendations of the stakeholder groups (if consensus emerges) or the Commission's evidentiary findings. This third party could be selected through an RFP process, perhaps issued by the Division of Public Utilities. Further, as discussed above, it would be ideal if the analytical tool is made publically available (subject to confidentiality as appropriate), to enable parties to run their own analysis and test sensitivities.

Dated this 6th day of February, 2015.

RESPECTFULLY SUBMITTED,

Utah Clean Energy

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