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Date: February 6, 2014

Subject: In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program. Docket No. 14-035-114

Introduction and Background

On August 29, 2014, the Public Service Commission of Utah (Commission) opened Docket No. 14-035-114, In the Matter of the Investigation of the Costs and Benefits of PacifiCorp's Net Metering Program, and issued a Notice of Technical Conference to be held on November 5, 2014.

Following on the November 5, 2014 technical conference, on November 21, 2014, the Commission issued Notices of Comment Period and Scheduling Conference (Notice). The Commission referred to its Order in Docket No. 13-035-184¹ wherein the Commission declined to implement PacifiCorp's (Company) proposed net metering facilities charge. The Order references the following provision from Utah Code Ann. § 54-15-105.1:

The governing authority shall:

- (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 cost and benefits.

¹ Rocky Mountain Power General Rate Case.

At page 2 of the Notice the Commission stated its intent “to establish the appropriate analytical framework for making the required determinations under Utah Code Ann. § 54-15-105.1. Such a framework will include the types of analyses that must be performed, the components of costs and benefits to be included in the analyses, and the sources and time period of data inputs.” The Commission further stated that the costs and benefits that result from applying data to the approved analytical framework will be determined in a general rate case or other appropriate proceeding.²

The November 21, 2014 Notice included the invitation for interested parties to provide comments in December 2014, on “PacifiCorp’s plan and schedule for performing a load research study on residential net metered customers”.³

A further opportunity was provided for comments and reply comments on February 6, 2015 and February 20, 2015, respectively. Specifically, parties are invited to comment on the following:

- 1) 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. Also, the applicability of some or all of these tests, or description of any other type of analysis, for examining the costs and benefits of PacifiCorp’s net metering program.
- 2) Consider the consistency of any proposed analysis with the statutory definition or requirements of the net metering program.
- 3) Whether the types of analyses to be used will vary depending on whether the analysis examines residential or non-residential net metered customers.

Accordingly, the Office of Consumer Services (Office) offers the following comments regarding the issues identified by the Commission for February 6, 2015 comment.

Discussion

Determination of Costs and Benefits

As a general principle the Office asserts that the evaluation of net metering costs and benefits must be limited to those that are quantifiable. Parties advocating that a particular benefit or cost should be attributed to net metering must provide evidence of that benefit

² The Commission states its intent to “ultimately make the required determination under Utah Code Ann. § 54-15-105.1(2) (*i.e.*, whether a charge, credit or other ratemaking structure is just and reasonable in light of the costs and benefits of the net metering program).

³ Notice page 3.

and its quantifiable value. It would not be appropriate to require the Company to prove benefits it does not believe exist.

Further, the Office supports the evaluation of costs and benefits based on the net metering customer's total use of the system, rather than simply using its net energy consumption. That is, to the extent the data is available, both the exports to the system and the imports from the system should be considered in the analysis.

Additionally, the cost and benefit analysis must recognize the investment in current facilities that were necessary prior to the customer's decision to begin net metering. Such accounting of existing facilities is important especially if net metering is assigned a benefit due to its potential ability to offset future investment in system resources. The Office suggests that the Commission must always keep in mind the question of who pays for the existing infrastructure costs.

Process for Determining Externalities and Values

In discussions regarding the determination of benefits provided by net metering, particularly solar photovoltaic systems, some parties have suggested that social and environmental costs (externalities) should be included. The Office asserts that the determination of the inclusion of any externalities in a cost benefit analysis as well as the attendant values to be attributed to those externalities must be developed in a robust process conducted outside of this docket. If these potential benefits are only examined and applied in the net metering context, some interested parties might be excluded, the result would certainly yield unintended consequences and would almost certainly yield sub-optimal decisions about future resource decision. If and when externalities and their values have been determined they must be consistently applied to all resources in all forums where the value of resources are considered, e.g., IRP, new resource decisions, avoided costs, etc..

The Office believes that it will likely require significant time and effort to make a determination of externalities and attendant values that should be applied, hence our consideration of a separate process for that determination. The Office maintains that this docket should move forward on its current schedule and not be delayed while the determination of externalities and values are developed.

Further, the Office believes it would be helpful to the process if the Commission would define up front its intentions regarding the evaluation of externalities. The Office is uncertain if utilizing externality values would require specific legislation or in what form the Commission is willing to pursue such an evaluation. The Office believes that efficiency and fairness would best be served for the Commission to clearly indicate what path, if any, must be followed if any party would like to pursue the inclusion of externality values. This allows parties to contract for the appropriate experts, if such testimony is going to be

fully evaluated, or to avoid wasted expense on experts whose testimony will not be helpful to the process.

Office Response to Commission's November 21, 2014 Notice

- 1 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.

Office Response: The Office proposes that Demand Side Management (DSM) cost-effectiveness tests (DSM tests) are inappropriate to evaluate benefits and costs of net-metering. There are two major reasons for this recommendation. First, residential net-metering customers fundamentally differ from other residential customers that participate in DSM programs in that they are not only reducing energy consumption, but are energy producers as well. Second, DSM tests lack the input sets to evaluate the value of residential customer generation or the value of the grid to net-metering customers as was shown in Docket 07-035-T14. The Office recommends that the Commission develop independent criteria to comprehensively evaluate the impacts, both benefits and costs of net-metering customers.

Differentiating Net-Metering Customers

Residential net-metering customers differ from other residential customers because they both consume and produce electricity. They represent a minority of Rocky Mountain Power's (Company) residential customers. The Institute of Electric Efficiency (IEE) has reported that residential net-metering customers utilize grid services for the following: ⁴

- Balancing supply and demand in sub-second intervals to maintain a stable frequency (i.e. regulation service)
- Reselling energy during hours of excess generation and delivering energy during hours of deficit generation.⁵
- Providing the energy needed to serve the customer's total load during times when on-site generation is inoperable due to equipment maintenance, unexpected physical failure, or prolonged overcast conditions. (i.e. backup service)

⁴ "Value of the Grid to DG Customers, IEE Issue Brief, September 2013, updated October 2013, p. 2.

⁵ According to the Net Metering Tariff, Schedule 135, Residential and Small Non-Residential Customer shall be credited for such net energy with a cumulative kilowatt-hour credit. The credit will be deducted from the customer's kilowatt-hour usage on the customer's next monthly bill thus offsetting the customer's next monthly bill at the full retail rate of the customer's rate schedule.

- Providing voltage and frequency control services and maintaining high AC waveform quality.

These characteristics require different evaluation methods than current DSM tests provide. If the costs of these specialized services are not directly assigned to the residential net-metering customer causing those costs, then they would be borne by all residential customers. DSM tests are unable to measure the impact of this type of potential cost shifting.

Net – Metering Evaluation Gaps

The Commission adopted the Utah Demand Side Management and Other Resources Benefit and Cost Analysis Guidelines and Recommendations (2009 Report) in Docket 09-035-27. The Company prepared the 2009 Report in response to Commission orders in Docket Nos. 07-035-T04 and 07-035-T14.⁶ Within the 2009 Report, parties recommended 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 approved the use of traditional DSM tests for small-scale renewable projects with a caveat. Specifically, the order at page 15 reads:

“We concur with the recommendation to evaluate small-scale renewable resources, such as solar photovoltaic projects, on a similar basis as energy efficiency and load management until other economic tests are available. Thus, all five tests will be performed. Should any of the tests, fail, the Company and parties may present arguments, and we shall consider, whether the program is in the public interest for reasons other than economic efficiency.” (Italics added)

The 2009 Report indicated that “the Company and the DSM Advisory Group will continue to stay abreast of development/refinement of economic tests for small-scale renewable programs and may revise the recommendations as warranted.”⁷ To date, no alternative evaluation methods for Net-Metering have been developed or refined. The Commission understood that DSM Tests lack the ability to measure small-scale renewable resources such as utility sponsored solar photovoltaic projects, specifically residential Net-Metering. Hence, the Commission authorized developing appropriate cost-effectiveness criteria and guidelines regarding cost-

⁶ In Docket No. 07- 035-T04, we directed the Company, the Utah Division of Public Utilities (“Division”), and the Demand Side Management (“DSM”) Advisory Committee to work on recommendations for the Commission’s consideration to clarify the overall DSM program design, approval, implementation, and evaluation processes. In Docket No. 07-035-T14, we directed the Company to include recommendations on appropriate cost-effectiveness criteria and guidelines for a solar program in its recommendations regarding cost-benefit definitions and assessments.

⁷ See March 6, 2007 Order, Docket 07-035-T04, p. 2.

benefit definitions and assessments for small-scale renewable resources. (see Docket No. 17-035-T14 Order dated August 3, 2007, page 7)

An example of using alternative cost-effectiveness methods occurred in Docket 07-035-T14, the Solar Incentive Program (Program). The Company did not provide a benefit-cost analysis since the Program was a pilot. However, parties expressed concerns about the Program's cost-effectiveness if the Program became permanent. The Division of Public Utilities (Division) filed a memo on June 15, 2007 outlining concerns about the Program's cost effectiveness. At that time, the Division analyzed the Program as if it were designated a DSM program. The Division indicated that if the Program were designated as a DSM program, "it appears unlikely that the program would pass the Total Resource Cost Test (TRC) and the Participant Cost Test (PCT)..." In the same memo the Division stated:

"Supplementary benefit-cost analysis information regarding the program was subsequently provided by the Salt Lake City Million Solar Roofs Partnership (Partnership). The Partnership's analysis evaluates program cost-effectiveness under a number of different assumptions and scenarios. The analysis shows that the program is cost-effective *if total participant capital costs are not included, if avoided energy and capacity costs are included, if capacity payments are adjusted to reflect the value of PV power coincidental with peak load shape, and if a social discount rate is used.*" (Italics Added)

The italicized section states how the Program could be deemed cost effective. However, it should be noted that many of the analytical inputs used in the Partnership's analysis are not included in DSM tests.

Parties at that time recognized that the Solar Incentive Program would not be approved based on the traditional use of DSM Tests and put forward other evaluation criteria to assess cost-effectiveness. The Commission stated further:

"The Company recommends including discussion of the appropriate cost-effectiveness criteria and guidelines for a solar program to the scope of work for the DSM Advisory Group. We agree and direct the Company, Division and DSM Advisory Group to include recommendations on appropriate cost-effectiveness criteria and guidelines for a solar program in its recommendations regarding cost-benefit definitions and assessments as required in Docket No. 07-035-T04."

To date, the use of DSM tests to evaluate solar projects or in the net metering context have not been fully vetted. The Commission itself has recognized that other evaluation criteria were necessary to justify the Program's cost effectiveness. Furthermore, inputs for variables measuring avoided costs, generation compensation, and contribution to peak are not part of the DSM input set. Yet

these metrics are fundamental to evaluate the value of net-metering customers to the Company's system. Lastly, DSM tests lack the ability to study the impacts of net-metering at the class level. As solar projects affect industrial, commercial and residential classes, class specific analysis is needed to understand intra-class impacts of net-metering programs. Thus, the Office recommends to the Commission that metrics should be developed within this docket to evaluate Net-Metering and the use of the DSM cost benefit tests should be discontinued.

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

Office Response: The Office asserts that its recommendations regarding the use of only quantifiable benefits and quantifiable costs are consistent with the statutory definition and requirements of net metering. The Office further asserts that any proposed analysis must be consistent with and compatible with other regulatory processes defined in statute. For example, any analysis that is selected for evaluating the benefits of net metering must include recognition of the role of the Integrated Resource Plan (IRP) in determining resource need and the value of specific resources to the system. Only through that recognition will the Commission be able to determine "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".

Net Metering – Integrated Resource Planning Perspective

PacifiCorp prepares an Integrated Resource Plan (IRP) in order to insure that the Company will have adequate resources to meet customer demand including a 13% planning reserve margin over a 20 year planning horizon. In recent IRPs, the Company's analyses have shown significant resource deficits at the time of system peak demand (the peak hour) when only relying on current Company owned resources. For example, the 2015 IRP capacity load and resource balance shows a peak hour deficit of 1,155 MW in 2015 with the peak hour deficit growing to 2,200 MW in 2024. To meet these deficits the Company can build additional resources, purchase power on the market or find ways to reduce demand (such as DSM). The IRP process determines what combination of these options is the least cost, least risk solution to solve the capacity deficit.

Outside the hours with a capacity deficit, the Company has more than enough resources to meet demand. In other words, the Company's system is long on energy but short on capacity. Therefore, from an IRP perspective, a resource is more valuable if it can be available to meet peak hour demand, can reduce the Company's capacity deficit and can help the Company avoid the need to build or buy resources in the future.

Net metering resources should also be evaluated from this IRP perspective. More benefit should be assigned to a net metering resource when it can help in reducing the Company's capacity deficit. If a net metering resource primarily provides off-peak-hour energy, its benefits to the system from an IRP perspective are much less.

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

Office Response: There would likely be some differences in an analysis of the costs and benefits of net metering between residential or non-residential net metered customers. Part of this relates to the manner in which rates are designed. Non-residential rate designs include demand and energy charges in addition to a monthly customer charge, whereas residential rate design only includes a customer charge and an energy charge. From the Office's perspective, only the costs that do not vary by customer size are included in the customer charge; all other fixed costs associated with generation, transmission and distribution are embedded in the energy rate. This appears to be a point of confusion. Many of the comments directed to the Commission related to a residential net metering surcharge have either stated or implied that the Company collects all (or most) of its fixed charges through the customer charge included on all residential customer bills. To facilitate a better understanding for docket participants as well as the general public the Commission should make clear what components are included in Rocky Mountain Power's customer charge, either in this docket or in future general rate cases when customer charges are established.

Final Comments

The Commission has stated its intent that a framework developed through this docket "will include the types of analyses that must be performed, the components of costs and benefits to be included in the analyses, and the sources and time period of data inputs." The Office asserts that any formula that is developed in this docket must be flexible to allow for future changes as additional information becomes available, costs are adjusted, rate designs change, etc.

Office Recommendations

To assist parties in providing more meaningful input the Office recommends that the Commission:

- 1) Consider only quantifiable costs and benefits and require that the parties who propose the inclusion of any particular cost or benefit provide supporting evidence.

- 2) Do not evaluate externality costs within this docket. Such evaluation must be done in a standalone evaluation that provides opportunity for all interested parties to participate in a robust evaluation with a clear understanding that the outcome would be applied consistently in all appropriate regulatory processes.
- 3) Provide its view on the authority required to apply externality costs to this docket as well as other resource decisions.
- 4) Do not continue the practice of using DSM cost benefit tests to evaluate solar or net metering resources.
- 5) Ensure that any analysis is consistent both with the requirements of the net metering statute as well as existing regulatory processes in place.