BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

Application of Rocky Mountain Power to Establish Export Credits for Customer Generated Electricity	**)** **)** **)** **)** **)**	**Docket No. 17-035-61** **DPU Exhibit 1.0 DIR-PH I**

DIRECT TESTIMONY – PHASE ONE

OF

ROBERT A. DAVIS

ON BEHALF OF THE

UTAH DIVISION OF PUBLIC UTILITIES

March 22, 2018

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Introduction

Q: Please state your name and occupation.

A: My name is Robert A. Davis. I am a Utility Analyst in the Energy Section of the Division of Public Utilities (Division) at the Utah Department of Commerce.

Q: What is your business address?

A: My business address is 160 East 300 South, 4th Floor, Salt Lake City, Utah, 84114.

Q: On whose behalf are you testifying?

A: The Division.

Q: Please summarize your educational and professional experience.

A: I earned a Master's Degree in Business Administration with Master's Certificates in Finance and Economics from Westminster College in May of 2005. I am a Certified Valuation Analyst (CVA) by the National Association of Certified Valuators and Analysts (NACVA). I have attended the NARUC Rate School, MSU/IPU Advanced Regulatory Studies Program, and Depreciation Fundamentals by the Society of Depreciation Professionals. I am a participant in the Northern Tier Transmission Group Cost Allocation Committee, a member of the LBNL/WIEB Technical Advisory Committee for Utility Rate Design, a member of the NREL DER-PV Ratepayer Impact Tool Advisory Committee, and have attended several regulatory seminars and conferences. I have been employed by the Division since May of 2012.

Prior to my present position, I was employed at the Utah State Tax Commission

in the Centrally Assessed Property Tax Division-Utilities Section where I valued telecommunication, energy, and airline companies for property tax purposes. Prior to working in the Property Tax Division, I was an Electronic Engineering Technician at Fairchild Semiconductor.

Q: Please describe the responsibilities of your current position.

A: My responsibilities include accounting, financial, and economic analysis of regulated energy related matters with an emphasis towards renewable energy and storage. I have testified before the Public Service Commission of Utah (Commission) on numerous occasions in connection with those duties.

Purpose and Summary of Testimony

Q: What is the purpose of your testimony in this proceeding?

A: My testimony reviews Rocky Mountain Power's (RMP) proposed Load Research Study (LRS) plan and offers the Division's recommendation. Mr. Charles Peterson, on behalf of the Division, will review the statistical design of RMP's LRS.

Recommendation

Q: Will you please offer your recommendation to the Commission?

A: Yes. The Division has reviewed RMP's load research design and attended various workshops and question-and-answer sessions with other interested parties in this matter. Although each party has its own interests in this matter, the Division believes RMP has designed the LRS to capture the necessary data needed to support the scope of work for this phase of the docket and provide the necessary data for Phase Two. The

Division recommends the Commission approve RMP's LRS for Phase One of this docket.

Docket Background

Q: Will you provide a brief history of this docket?

A: Yes. On September 29, 2017, the Commission issued its order approving the parties' settlement stipulation for Docket No. 14-035-114.[1] The record for Docket No. 14-035-114 is voluminous and will not be repeated here.[2] The settlement terms grandfathered current net metering customers (Schedule 135) as of November 15, 2017 until December 31, 2036. A new program, the Transition Customer Program (Schedule 136), began on November 15, 2017, and will continue pending the outcome of this docket where the export credit rate will be determined for customer generation into the future.[3]

The settlement terms required RMP to file an application with the Commission requesting a docket to determine an export credit rate for customer generation. The Commission opened Docket No. 17-035-61 on December 4, 2017. The parties agreed to bifurcate the docket into two phases during the first scheduling conference held on December 11, 2017. The first phase is the LRS. The second phase uses the LRS data to

[1] See Commission Order Approving Settlement Stipulation, Docket No. 14-035-114, September 29, 2017, https://pscdocs.utah.gov/electric/14docs/14035114/297036140351140ass9-29-2017.pdf.
[2] See https://psc.utah.gov/2016/06/20/docket-no-14-035-114-2/.
[3] Current net metered customers (Schedule 135) will remain on the old Net Metering Program (i.e., $ for $) until the end of 2036. Transition customers (Schedule 136) will be grandfathered until 2032 under the current Schedule 136 tariff. New customers at the conclusion of this docket, and all customers at the conclusion of their respective grandfather period will be compensated at the export credit rate for any energy put to the grid.

design an export credit rate for customer generation.[4]

Scope of Work for Phase One

Q: What is the scope of work for Phase One?

A: Phase One should result in sufficient information about customer generation and its timing to allow the creation of an export credit structure and rate for excess customer generation. Two elements of information will help value excess customer generation: (1) how much energy is being exported from the customer to the distribution grid; and (2) the time of day the energy is being exported to the distribution grid. This information will allow the Commission to determine the value of excess customer generation using other indicators of value, such as market prices, avoided costs, and the like. In the process of gathering this data, it may also be prudent to collect additional information on the full requirements usage. This information is reasonably easy to obtain as part of the study and may aid in the design of the customer generation export credit.

Proposed Load Research Study Plan

Q: Will you summarize the proposed LRS?

A: Yes. Distributed generation technology operated by most private generation customers is primarily solar photovoltaic (PV). The proposed LRS for this docket exclusively studies PV generation. Like other distributed generation technologies, PV has its own

[4] Commission Phase I and Phase II Scheduling Orders, December 12, 2107 and January 16, 2018, respectively, https://pscdocs.utah.gov/electric/17docs/1703561/2984151703561posoanohanoptsc12-12-2017.pdf, and https://pscdocs.utah.gov/electric/17docs/1703561/2991841703561ptsonopwhanoh1-16-2018.pdf.

characteristics. PV typically starts producing energy in the morning as the sun begins to rise, peaks mid-day, and ramps down in the early evening hours as the sun sets. PV generation is variable with weather, heat, orientation, and terrestrial attributes. Because these factors do affect the output of customer owned PV, and the LRS is a study of actual output, it is expected that variation in the sample will include these factors in the same way that variation in these factors exist in the total population of customer PV.

The purpose of this LRS, as mentioned above, is to determine how much and when energy is put to the grid by customer generation, regardless of the weather, orientation, or other attributes. RMP will randomly select seventy customers from the existing grandfathered Schedule 135 customers following a four-stratification schema and install generation meters at those sites. These stratified production meters will provide generation data in 15-minute intervals over each 30-day billing period for twelve months. Transition Program customers have profile meters that provide delivery and export data in 15-minute intervals captured over the same period.[5] RMP's LRS design has a precision of +/- 10 percent at the 95 percent confidence level, which exceeds industry standards.[6] The LRS data, along with other customer data, will be used

[5] At the time of this writing there are 13 connected Transition Program customers with many connections in progress. RMP assumes that there will be numerous Transition customers when the LRS goes live in January of 2019.

[6] The Public Utilities Regulatory Policy Act (PURPA) defines a minimum *Accuracy Level* of +/- 10 percent at the 90 percent confidence level. 1992 Code of Federal Regulations (CFR), Title 18, Chapter 1, Subchapter K, Part 290.403, Subpart B.

to determine how much energy is put to the distribution grid and when.

Q: What is the other customer data you are referring to?

A: The other customer data consists of mathematically derived full requirements usage and feeder/circuit data where available. These will be discussed in more detail below.

Q: Is RMP's proposed LRS adequate?

A: Yes. For the purpose of this docket, the Division concludes that RMP's proposed LRS is adequate. The data gathered from the proposed LRS along with other currently available data, will aid the parties in the design of a reasonable export credit rate for customer generation.

Q: Is RMP's LRS based on sound statistical theory?

A: RMP provided a description of its study design including sample design and size formulas to interested parties. Mr. Peterson has reviewed RMP's proposal and will provide analysis of the proposal's statistical design. In summary, the Division concludes that RMP used widely-accepted, mathematically-based statistical methods to design its LRS, with a proper sample size.

Statistical studies can be costly, either financially or through complete destruction of samples. The financial costs involved with studying the entire population of over 24,000 private generation customers prohibits doing so. This study is critical to the outcome of this docket; however, the Division is concerned that associated costs must remain reasonable while in the pursuit of an adequate study. The type of sampling proposed by RMP can control or limit the costs of the study while providing statistically

significant results. This type of analysis is done frequently by RMP for other load research studies. The Division concludes that RMP's proposed LRS and the associated costs appear reasonable.

Future Use of LRS Data

Q: How will the data from the LRS be used?

A: The generation data will be captured at 15-minute intervals over each 30-day billing period from the proposed seventy Schedule 135 customers (grandfathered net metering customers), beginning January 1, 2019 and will be collected over the course of twelve months. Export and delivery data will be captured during the same intervals from Schedule 136 customers (Transition Customers). The Division understands there are currently thirteen transition customers interconnected at the time of this writing. The Division has expressed concern to RMP that there may be too few transition customers interconnected by January 1, 2019 to ensure an ample record of export and delivery data. RMP's response to Division data request DPU 3.4 confirms that export and delivery data will be available from the randomly selected Schedule 135 customers should there not be enough transition customers.

Q: Does the Division support RMP's mathematical derivation of full requirements usage?

A: Yes. Unlike the net metering case, Docket No. 14-035-114, where interested parties were concerned about how private generation customers were using the grid, this docket studies how much energy and when customer generation is hitting the grid. The net metering docket used customer usage as its design criteria for the LRS in that

docket. The LRS in this docket is designed around the Direct Current (DC) installed capacity of the system because the study is concerned with energy exported to the grid.

Interested parties need to understand how much energy and at what time of day the energy hits the grid, as mentioned above. To design an export credit, the utility must understand the timing of customer generation exports to the utility's system. Understanding full requirements usage for exporting customers may help explain that difference between periods of net customer export and import. One method available to determine full requirement usage is through mathematical derivation using generation, export, and delivery data from the sample customers.

Mr. Elder's direct testimony, Figure 1, illustrates the mathematical process.[7] A customer's full requirement usage can be derived as the sum of delivered energy plus generated energy less exported energy, [delivered + (generated – export)].

Although full requirements usage may not be an integral part of the study, the Division understands that full requirements usage data is useful in defining how private generation customers use the system. In the instances where utility-side distribution metering is not available, the full requirements usage may become useful to better understand these customers' interaction with the utility's system. RMP's proposal to use available feeder/circuit data and mathematical derivations is reasonable.

Q: Do you have any final thoughts regarding Phase One of this docket?

[7] RMP witness Kenneth Lee Elder Jr, Direct Testimony, February 15, 2018, line 146.

A: Yes. The Division concludes that the LRS data, combined with feeder/circuit data,[8] and mathematically derived full requirements usage, should provide interested parties with the data and information needed to proceed with Phase Two of this docket.

Properly compensating RMP's customers for exported generation is a new task for regulators. The proposed LRS is an adequate and important first step in properly setting a compensation rate.

Conclusion

Q: Please summarize the Division's recommendations.

A: The Division has reviewed RMP's load research design and concludes that its design is sound and practical. Although each party has its own interests in this matter, the Division believes RMP has designed the LRS in a manner sufficient for interested parties to propose, and the Commission to adopt, a customer export credit rate in Phase Two of this docket. The Division recommends that the Commission approve RMP's Load Research Study.

Q: Does this conclude your direct testimony?

A: Yes it does.

[8] The Division is aware that RMP does not have the necessary metering on the utility side for every feeder and circuit where the LRS metering may be installed. RMP has the ability to install temporary metering in some locations and actively installing metering through the STEP Advanced Metering Program in some locations.