Rocky Mountain Power
Docket No. 16-035-____
Witness: Michael G. Wilding

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF UTAH

ROCKY MOUNTAIN POWER

Direct Testimony of Michael G. Wilding

November 2016

Q. Please state your name, business address and present position with PacifiCorp, dba Rocky Mountain Power ("the Company").

A. My name is Michael G. Wilding. My business address is 825 NE Multnomah Street, Suite 600, Portland, Oregon 97232. My title is Manager, Net Power Costs.

Qualifications

Q. Briefly describe your education and business experience.

A. I received a Master of Accounting from Weber State University and a Bachelor of Science degree in accounting from Utah State University. I am a Certified Public Accountant licensed in the state of Utah. Prior to joining the Company, I was employed as an internal auditor for Intermountain Healthcare and as an auditor for the Utah State Tax Commission. I have been employed by the Company since February 2014.

Q. Have you testified in previous regulatory proceedings?

A. Yes. I have filed testimony in proceedings before the public utility commissions in Utah, Wyoming, Idaho, California, and Oregon.

Purpose of Testimony

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

A. My testimony presents and supports the Company's net power cost ("NPC") analysis of the net metering program (the "Program") for the 12-month period from January 1, 2015 through December 31, 2015 ("Study Period").

Q. Have you provided detailed support for the NPC analysis of the Program with your testimony?

A. Yes. Exhibit RMP___(MGW-1) includes a detailed NPC analysis of the Program for the Study Period.

Net Power Cost Analysis of the Net Metering Program

Q. Please provide an overview of the framework the Company used in its NPC analysis of the Program.

A. The framework of the NPC analysis of the Program calculated the NPC benefits of the Program by assuming a system with no private generation from net metering customers. To do this, the Company first projected the change in generation and market transactions that would have taken place if net metering customers had not generated any power, i.e., took full requirements service from the Company. Next, the Company multiplied the actual costs of generation and market transactions by the incremental changes in generation and market transactions to estimate the net benefit to the system resulting from private generation. The actual costs are taken from the 2015 Adjusted Actual NPC ("Actual NPC") as reported in the Docket No. 16-035-01 ("2016 EBA"). Finally, the integration costs approved by the Commission in Docket No. 12-035-100 (the "QF Docket") were deducted from that amount.[1]

[1] *See* Docket No. 12-035-100, Order on Phase II Issues, at 34 (Utah P.S.C. August 16, 2013). In the QF Docket, the Commission approved, among other things, solar integration charges the equivalent of 65 percent and 50 percent of wind integration charges for fixed solar and tracking solar resources, respectively, from the Company's 2012 Wind Integration Study (the "Phase II Order").

Q. Please describe the Company's NPC analysis for the Program during the Study Period.

A. Using the Company's Generation and Regulation Initiative Decision Tools ("GRID") production cost model to calculate energy changes in system generation and market transactions, the NPC analysis involved comparing the results of two GRID studies. The first GRID study is the Company's Utah Schedule 37 filing dated April 30, 2015 ("Base Study"). The second GRID study increases Company system load by 58 gigawatt-hours ("GWh"), which is the estimated amount of energy needed to replace generation from Utah net metering customers (the "No NEM Study"), as discussed in the testimony of Company witness Mr. Robert M. Meredith. In other words the No NEM Study removed private generation from the GRID analysis, but made no other changes. Table 1 below shows the difference in energy between the Base Study and the No NEM Study by NPC component for system generation and market transactions.

TABLE 1

Change in Generation/Market Transactions (GWh)

NPC Component	Base Study	No NEM Study	Change	Percentage Change
System Balancing Sales	(7,427)	(7,404)	22	39%
System Balancing Purchases	3,841	3,858	17	30%
Coal Generation	37,729	37,746	17	29%
Natural Gas Generation	12,890	12,891	1	2%
Total	**47,033**	**47,090**	**58**	**100%**

The Company's NPC analysis of the Program is calculated on a monthly basis applying the percentage change (the weight) of the energy to the 2015 actual unit costs of each NPC component. The No NEM Study showed energy changes to the following NPC components: (i) system balancing purchases/sales ("market

transactions"), (ii) coal fuel expense, and (iii) natural gas fuel expense. Therefore, the benefit of NEM on a dollar per megawatt-hour basis ("$/MWh") is the weighted aggregate of the market transactions, coal fuel expense, and natural gas fuel expense less the avoided integration costs. The $/MWh benefit is then multiplied by the estimated NEM generation to arrive at the total NPC benefit.

Q. Have you provided any other exhibits to your testimony that are related to the NPC analysis of the Program?

A. Yes, the following exhibits also support the NPC analysis of the Program:

- Confidential Exhibit RMP___(MGW-2): Base GRID Study, the Company's Utah Schedule 37 filing dated April 30, 2015.
- Confidential Exhibit RMP___(MGW-3): No Net Metering Study.
- Exhibit RMP___(MGW-4): 2015 Actual Net Power Costs.

Q. Please summarize the results of the NPC analysis.

A. Based on the NPC analysis, and as discussed in more detail below, the Company estimates that, for the Study Period, system NPC would increase by approximately $1.3 million if the Company were required to supply the energy that was otherwise generated by net metering customers. This overall result is the aggregation of the NPC calculations the Company conducted over 12 monthly periods. To demonstrate the NPC analysis of the Program for each month, I will walk through the analysis using January 2015 (the first month of the Study Period) as an example.

Determining the Necessary Energy From Each Source

Q. Please describe how the Company determined the amount of energy to include in the No NEM Study to account for the assumed condition that there was no private generation.

A. The Company estimated the amount of energy generated by net metering customers and prepared a production profile as discussed in the testimony of Mr. Meredith. According to that methodology, the Company determined that private generation under the Program and avoided line losses was approximately 58 GWh during the Study Period. The Company used this figure to establish the overall energy it would need to include in the No NEM Study. For January 2015, Mr. Meredith calculated the amount of private generation that would need to be replaced in the No NEM Study to be 1,989 MWh.

Q. How did you use the energy estimates prepared by Mr. Meredith?

A. The energy estimates and production profile from net metering customers were run through the GRID model for the No NEM Study. In that study, the GRID model determined how to replace energy otherwise provided by private generation using market transactions (both decreased sales and increased purchases), coal generation, and natural gas generation. As an example, the change in production between the Base Study and the No NEM Study for January 2015 is shown in Table 2 below:

TABLE 2

Change in Generation/Market Transactions (MWh)
January 2015

NPC Component	Base Study	No NEM Study	Change	Percentage Change
System Balancing Sales	(404,773)	(404,517)	256	12.87%
System Balancing Purchases	504,036	505,213	1,177	59.19%
Coal Generation	3,481,839	3,482,350	510	25.66%
Natural Gas Generation	740,550	740,595	45	2.28%
Total	**4,321,653**	**4,323,642**	**1,989**	**100%**

Market Transactions

Q. Please describe the market transactions component of the NPC Analysis.

A. The actual Palo Verde ("PV") monthly market price was used for the market transactions (or system balancing sales and purchases) component of the NPC analyses. The actual monthly PV price is shaped to the same profile as private generation and is calculated using the same ratio of heavy load hours ("HLH") and light load hours ("LLH"). For example, in January 2015, the actual PV market price was $25.54/MWh, based on approximately 85 percent HLH and 15 percent LLH.

Q. Were any adjustments made to the actual monthly PV market price?

A. Yes. The actual monthly PV market price must be adjusted because the change in market transactions occurred in multiple markets. To make this adjustment, I first compared the unit cost of the change in market transactions between GRID studies to the Base Study PV price (the Base Study PV price uses the same HLH/LLH ratio). For January 2015, the unit cost of the change between the Base Study and the No NEM Study was $22.85/MWh ($32,753 / 1,433 MWh) and the Base Study PV market price was $25.54/MWh.

The change in the value of the market transactions between the Base Study and the No NEM Study for January 2015 was 89.5 percent of the Base Study PV market price ($22.85 / $25.54). Therefore, the same percentage is applied to the actual monthly PV market price adjustments and results in a Program benefit related to market transactions of $22.89/MWh (Line 28 of Exhibit RMP_MGW-1).

Coal Fuel Expense

Q. Please describe the coal fuel expense component of the NPC analysis.

A. For coal generation, the Company used the actual unit cost of coal generation each month. The unit cost of coal generation was $19.60/MWh for January 2015, as shown on Line 32 of Exhibit RMP ___ (MGW-1).

Natural Gas Fuel Expense

Q. Please describe the natural gas fuel expense component of the NPC analysis.

A. For natural gas generation, the Company used the actual unit cost of natural gas generation each month. Thus, natural gas generation was $35.14/MWh for January 2015, as shown on Line 33 of Exhibit RMP ___ (MGW-1).

Integration Costs

Q. Please describe the effect of integration costs on the NPC analysis.

A. Integration costs represent the costs associated with integrating private generation from the Program into the Company's system, including additional reserves required due to the intermittency of that private generation. This represents an increase to NPC when a customer adds private generation. Likewise, if private generation is removed from the system, there would be no need for integration and

additional reserve requirements, decreasing NPC. Consistent with the Commission's Order in the QF Docket, the Company used solar integration costs in the NPC analysis of $2.83/MWh.[2]

NPC Analysis Results

Q. What are the results of the NPC analysis for January 2015?

A. For the month of January 2015, the NPC analysis resulted in a net benefit of $19.49/MWh or $38,772 as shown in Table 3[3] below.

TABLE 3

January 2015 NPC NEM Analysis

Utah Net Metering Generation (MWh)	**1,989**				
	A	B	C	D	D
NPC Component	**Change (MWh)**	**Percentage of Total Change**	**2015 Actual NPC ($/MWh)**	**2015 Actual NPC Weighted ($/MWh) (Column B X Column C)**	**NPC Benefit of Solar (Column A X Net Metering Solar Generation)**
System Balancing Sales	256	12.87%	$ 22.89	$ 2.95	
System Balancing Purchases	1,177	59.19%	$ 22.89	$ 13.55	
Coal Generation/Fuel Expense	510	25.66%	$ 19.60	$ 5.03	
Natural Gas Generation/Fuel Expense	45	2.28%	$ 35.14	$ 0.80	
Integration Costs				$ (2.83)	
Total	1,989	100%		**$ 19.49**	**$ 38,772**

Q. What is the cumulative benefit of private generation under the Program for the 12-months of the Study Period?

A. Assuming an estimate of 58 GWh of power from private generation under the Program that would need to be replaced, NPC would increase by $22.28/MWh or

[2] Docket No. 12-035-100, Order on Phase II Issues, at 34 (Utah P.S.C. August 16, 2013).
[3] Figures shown in Table 3 are rounded and electronic workpapers supporting the calculation have been provided with the filing.

$1.3 million as seen in Lines 39 and 40, respectively, of Exhibit RMP___(MGW-1).

Q. Does this conclude your direct testimony?

A. Yes.