

September 23, 2016

Mr. Will Rosquist
Administrator, Regulatory Division
Montana Public Service Commission
1701 Prospect Avenue
PO Box 2022601
Helena, Montana 59620-2601

Re: Docket No. D2016.5.39
QF-1 Avoided Cost Rate Filing
PSC Set 3 Data Requests (023-027)

Dear Mr. Rosquist:

Enclosed for filing is a copy of NorthWestern Energy's responses to the PSC Set 3 Data Requests in Docket No. D2016.5.39. It has been hand delivered to the Montana Public Service Commission and the Montana Consumer Counsel this date. It has also been e-filed on the PSC website, emailed to counsel of record, and sent via First Class Mail to the remainder of the service list.

Should you have questions please contact Joe Schwartzenberger at (406) 497-3362.

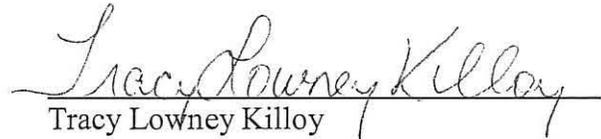
Sincerely,

Tracy Lowney Killoy
Administrative Assistant

CERTIFICATE OF SERVICE

I hereby certify that a copy of NorthWestern Energy's responses to the PSC Set 3 Data Requests (023-027) in Docket No. D2016.5.39, the QF-1 Avoided Cost Rate Filing, has been hand-delivered to the Montana Public Service Commission and the Montana Consumer Counsel this date. It has also been e-filed on the Commission website, emailed to counsel of record, and sent via First Class Mail to the attached service list.

Date: September 23, 2016

A handwritten signature in cursive script that reads "Tracy Lowney Killoy". The signature is written in black ink and is positioned above a horizontal line.

Tracy Lowney Killoy
Administrative Assistant
Regulatory Affairs

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NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-023 Regarding: Response to VS-009
 Witness: Bushnell

Please identify the language in Docket D2015.7.59, Final Order 7450a, in which the Commission adopted and approved the use of a production cost model to estimate avoided costs.

RESPONSE:

The following is NorthWestern's response to Data Request VS-009:

The Montana Commission first adopted calculations of avoided cost based upon production costing models beginning in 1981 (Docket No. 81.2.15) and most recently on August 5, 2016 (Docket No. D2015.7.59).

NorthWestern's response does not claim that "the Commission adopted and approved the use of a production cost model to estimate avoided costs" in Docket No. D2015.7.59, and plain reading of the Order does not indicate such. However, a plain reading of Order No. 7450a does indicate that the Commission approved Montana-Dakota Utilities' proposed tariff, which was calculated using a production cost model.

NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-024 Regarding: Derivation of Electricity Pricing Differentials
 Witness: Hansen

- a. Please specify completely the mathematic relations between forecast Mid-C, NorthWestern purchase, and NorthWestern sale prices. Fully describe all variables and parameters included in these specifications, e.g. forecasted electricity prices, tariff rates, loss functions, discount sharing factors, and stochastic parameters.
- b. Please provide workpapers to illustrate the derivation of NorthWestern purchase and sale prices from forecast Mid-C prices over the 25-year term contemplated in this docket. Excel files with active functions are preferred, but if these are not available, Excel-readable PowerSimm files showing all relevant input and output variables and parameters will be accepted.
- c. Please provide rationale to support your specification of the mathematic relation between Mid-C prices and NorthWestern's purchase and sale prices.

RESPONSE:

- a. The formulas below demonstrate the mathematical relationships between the prices.

$$\text{NorthWestern Purchase Price} = \text{Mid-C_Price} - 30\% * ((\text{NWE_Trans_Price} + \text{BPA_Trans_Price}) + (\text{NWE_Loss_Rate} + \text{BPA_Loss_Rate}) * \text{Mid-C_Price})$$

Where:

Mid-C_Price = Forecast price at Mid-Columbia

NWE_Trans_Price = Price to transmit energy on NorthWestern's transmission system

BPA_Trans_Price = Price to transmit energy on BPA's transmission system

NWE_Loss_Rate = Losses incurred when transmitting energy on NorthWestern's transmission system

BPA_Loss_Rate = Losses incurred when transmitting energy on BPA's transmission system

NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-024 cont'd

$$\text{NorthWestern Sale Price} = \text{Mid-C_Price} - 45\% * ((\text{NWE_Trans_Price} + \text{BPA_Trans_Price}) + (\text{NWE_Loss_Rate} + \text{BPA_Loss_Rate}) * \text{Mid-C_Price})$$

Where:

Mid-C_Price = Forecast price at Mid-Columbia

NWE_Trans_Price = Price to transmit energy on NorthWestern's transmission system

BPA_Trans_Price = Price to transmit energy on BPA's transmission system

NWE_Loss_Rate = Losses incurred when transmitting energy on NorthWestern's transmission system

BPA_Loss_Rate = Losses incurred when transmitting energy on BPA's transmission system

- b. See the "PSC-024b" folder on the attached CD.
- c. The basis adjustment from Mid-C is used to estimate the price differential between Mid-C and Montana. NorthWestern has historically been able to procure energy in Montana at a discount, or negative basis, to the Mid-C price. If the energy generated in state is sold out of state, it must be "wheeled" or transmitted out of state, with an associated cost for the transmission. Energy generated in Montana typically crosses two transmission systems – NorthWestern's and Bonneville Power Administration's ("BPA") – in order to get to the Mid-C market. Parties with generation in Montana are incented to sell at a discount to the Mid-C price because their alternative is to pay the full transmission costs to get that power to market. These market dynamics have typically led to transactions in Montana at a negative basis to the Mid-C price. NorthWestern's experience indicates that a basis adjustment of -\$3.00/MWh is representative of the market for around-the-clock purchases in the intermediate term. The 30% factor used in the calculation was chosen to result in a basis for NorthWestern purchases of approximately -\$3.00 in the recent years.

We used a higher factor (45%) for the sales discount to Mid-C. This is because NorthWestern is typically selling in low demand hours, so the likelihood of finding purchasers with load in Montana is reduced. In these times, NorthWestern either has to discount the sales price further to sell in Montana, or purchase transmission to deliver power off system. Purchasing transmission from Montana to Mid-C would cost approximately \$10/MWh at current prices, so the 45% factor results in a basis of approximately -\$4.50.

NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-025 Regarding: Response to PSC-019
 Witness: Bushnell

- a. Would it be reasonable to use NWE's response to PSC-019(c) to update the WI-1 tariff?
- b. If the answer to part (a) of this question is no, please explain why it is preferable to used dated cost information in the WI-1 tariff when more current cost information is available.

RESPONSE:

- a. NorthWestern is not proposing any changes to the WI-1 Tariff in this proceeding.

 However, if the WI-1 Tariff were to be updated, a calculation similar to that provided in the response to Data Request PSC-019c would be appropriate. The only change to that calculation would be to update commodity costs to reflect the latest price forecasts available.

- b. See the response to part a, above.

NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-026 Regarding: Response to PSC-020
 Witness: Bushnell

In response to PSC-020(a), you state NWE did not propose to update the CR-1 tariff because the CR-1 tariff no longer has any effect on QF-1 rates. Would it be reasonable to eliminate the CR-1 tariff and any references to it in the standard QF-1 tariff? If not, please explain.

RESPONSE:

NorthWestern is not proposing any changes to the CR-1 Tariff in this proceeding.

The current CR-1 Tariff is incorporated within some existing contracts; therefore, it would be preferable to close the tariff, grandfathering existing agreements which incorporate its provisions.

NorthWestern Energy
Docket No. D2016.5.39
Application for Approval of Avoided Cost Tariff Schedule QF-1

Montana Public Service Commission
Set 3 (023-027)

Data Requests received September 9, 2016

PSC-027 Regarding: Valuation of QF-1 Power
 Witness: Hansen

- a) Does NorthWestern model the value of QF-1 power the same as it models the value of power from its own or proposed resources? For instance, does NorthWestern model the value of its proposed resources at zero under Long-2 conditions?
- b) Please describe your accommodation in modeling practice, if any, to PURPA's "rates shall not discriminate" provision. (18 CFR § 292.304 (a)(1)(ii)).
- c) If NorthWestern has ever modeled the value of its own or proposed resources in similar fashion to its QF-1 proposal in this proceeding, please provide evidence.

RESPONSE:

- a. NorthWestern uses the same process for evaluating resource acquisitions regardless of whether they be Company-owned or third party-provided with the exception of calculations in accordance with Order 69, which is limited to qualifying facilities.
- b. See the response to part a, above.
- c. See the "PSC-027c" folder on the CD attached to Data Request PSC-024 for an example of how NorthWestern modeled the proposed Ryan Dam upgrade project in a similar fashion to its QF-1 proposal in this proceeding other than for the implementation of Order 69. NorthWestern also has used a similar process in evaluating Community Renewable Energy Project proposals from project developers other than for the implementation of Order 69.