

Montana Public Service Commission



Brad Johnson - Chairman
Travis Kavulla - Vice Chairman
Kirk Bushman - Commissioner
Roger Koopman - Commissioner
Bob Lake - Commissioner

April 8, 2016

Mr. Joe Schwartzberger
Regulatory Affairs Department
NorthWestern Energy
11 East Park
Butte, MT 59701

RE: Data requests in Docket No. D2015.8.64

Dear Mr. Schwartzberger,

Enclosed please find data requests of the Montana Public Service Commission to NorthWestern Energy numbered PSC-047 through PSC-055 in the referenced Docket. Please begin the response to each new numbered data request on a new page. Please provide responses by April 20, 2016. If you have any questions, please contact me at (406) 444-6191.

Sincerely,

A handwritten signature in black ink, appearing to read "Neil Templeton".

Neil Templeton
Regulatory Division
Montana Public Service Commission

Enclosures

Service Date: April 8, 2016

DEPARTMENT OF PUBLIC SERVICE REGULATION
BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MONTANA

IN THE MATTER OF the Petition of) REGULATORY DIVISION
Greycliff Wind Prime, LLC To Set Terms) DOCKET NO. D2015.8.64
and Conditions for Qualifying Small Power)
Production Facility Pursuant to M.C.A.)
§ 69-3-603)

DATA REQUESTS PSC-047 THROUGH PSC-055 OF THE
MONTANA PUBLIC SERVICE COMMISSION
TO
NORTHWESTERN ENERGY

PSC-047

Regarding: Electronic Files
Witnesses: LaFave, Hansen

To the extent not already provided in the update to PSC-012(a), please provide Excel-readable files of all exhibits, supporting files, and inputs to PowerSimm.

PSC-048

Regarding: Interconnection Network Upgrades
Witness: LaFave

Please explain the effect of assuming a 5% contribution of capacity value on the cost of Interconnection Network Upgrades in Exhibit__(BJL-1).

PSC-049

Regarding: Thermal Asset Variable O&M and Fuel Prices
Witness: Hansen

At 3:7-10 you describe changes to levelized variable O&M and fuel prices at CU4.

- a. Please provide Excel readable files of all price strips used to verify these conclusions.
- b. Please describe and explain the methods used to forecast these price strips, and reference all other sources that you relied upon.

- c. If not addressed previously, please explain the cause of these changes in detail.
- d. Please describe the method used to estimate emissions costs for CU4 under carbon cost assumptions.
- e. Please describe the method used to estimate emissions costs for natural gas generators modeled in NorthWestern's 2015 Electricity Supply Resource Procurement Plan (2015 Plan).

PSC-050

Regarding: Natural Gas and Electricity Price Forecasts

Witness: LaFave or Hansen

- a. Please confirm that the PowerSimm natural gas and electricity price forecasts used to estimate avoided costs in revised supplemental response testimony are identical to the forecasts used in the 2015 Plan. If not, please explain.
- b. If not already provided, please provide Excel readable files of natural gas and electricity price forecasts used to estimate avoided costs in this instance.
- c. If not already provided, please provide Excel readable files of all natural gas and electricity price forecasts shown in the 2015 Plan, Vol. 1, Ch. 4.

PSC-051

Regarding: Avoided Cost Methodology

Witness: LaFave or Hansen

- a. Please confirm that your method in this case uses the variable cost at CU4 to estimate avoided cost when NorthWestern supply is long and the market price is above CU4 variable cost, and uses the market price to estimate avoided cost when supply is long and market is below CU4 variable cost. If not, please explain.
- b. Please calculate avoided cost using CU4 variable cost in all cases to estimate avoided cost when supply is long.
- c. Please calculate avoided cost using the market price in all cases to estimate avoided cost when supply is long.

PSC-052

Regarding: PowerSimm Modeling and Avoidable Resources

Witness: LaFave or Hansen

- a. Please confirm that the PowerSimm model used to estimate avoided costs in this case uses NorthWestern's current portfolio of resources for the base run rather than the "Economically Optimal Portfolio" (EOP) described in the 2015 Plan, Vol. 1, Ch. 12.
- b. Please estimate the avoided cost of the Greycliff resource using the EOP as the base case, under each of the following alternative assumption sets:
 - i.) The avoidable resource when supply is long is the curtailable resource with highest variable cost,
 - ii.) The avoidable resource when supply is long is the market, and
 - iii.) The avoidable resource when supply is long and the highest cost curtailable resource is less than market is the curtailable resource, while the avoidable resource when supply is long and the highest cost curtailable resource is greater than market is the market.

PSC-053

Regarding: Blended Market - CCCT Model

Witness: LaFave or Hansen

Please estimate avoided costs using the blended market – CCCT model approved in Docket No. 2012.1.3, Final Order 7199d, under the following assumptions:

- a. A 348 MW GE 7FA.05 ACC turbine installed in 2025 as described in the 2015 Plan;
- b. natural gas and electricity price forecasts identical to those used to develop your revised supplemental response testimony; and
- c. two calculations – with and without environmental attributes.

PSC-054

Regarding: Valuing Intermittency

Witness: LaFave

- a. Your avoided cost includes a deduction of \$1.99/MWh that apparently represents the levelized value of real-time market discounts from day-ahead, divided by expected annual Greycliff production. Does this day-ahead premium represent the value that customers receive in securing firm delivery contracts a day prior to expected need? If not, why else would a rational utility buy premium priced day-ahead power?
- b. Given that NorthWestern's customers are in general not expected to commit to using a specific volume of power on a day-ahead basis, why should they receive a premium associated with firm, day-ahead contracts?

- c. Avoided costs for wind power generally include price deductions related to intermittent production, in the form of higher regulation costs and lower capacity payments relative to thermal units. Please explain the origin of any additional costs that NorthWestern would incur through purchasing intermittent power from Greycliff.
- d. In your experience, do either day-ahead or real-time markets differentiate electricity products by source of generation?

PSC-055

Regarding: Valuing Intermittency

Witness: LaFave

- a. In your experience, are utility projections of day-ahead customer loads and utility supply resources, including wind resources, biased to protect the utility from the additional costs mentioned in your response to DR PSC-014(a)? If possible, provide data to support your response.
- b. Please describe the additional costs mentioned in DR PSC-014(a). Are these costs sufficient (on average) to exceed the discount associated with real-time purchases?
- c. Please consider this model: First assume that NorthWestern sets its schedule in the day-ahead markets based upon unbiased projections of customer load and available supply resources, including Greycliff. Next assume that all projections of customer load and supply resources excepting Greycliff are exactly correct in real-time. Then deviations of Greycliff from projection should net to zero in the long run, implying that real-time purchases and sales to meet load would net to zero in the long run, and therefore that Greycliff would impose no additional “real-time” related costs on the utility relative to its dispatchable resources. Do you confirm or deny this analysis? Please provide sufficient explanation to support your conclusion.