



April 25, 2016

Mr. Will Rosquist
Administrator, Regulatory Division
Montana Public Service Commission
1701 Prospect Ave.
P. O. Box 202601
Helena MT 59620-2601

RE: Docket No. D2015.8.64 – Greycliff Petition
Updated Responses to GWP-006(a) and (c), GWP-007 and GWP-010(a) and (c)
in GWP Set 1 Data Requests

Dear Mr. Rosquist:

Enclosed for filing are NorthWestern Energy's updated responses to Data Request GWP-006(a) and (c), GWP-007 and GWP-010(a) and (c) in the GWP Set 1 Data Requests (001-011).

They will be hand delivered to the Montana Public Service Commission and the Montana Consumer Counsel this day. They will also be e-filed with the PSC, emailed to counsel of record and mailed to the service list.

If you have any questions, please call Joe Schwartzenberger at (406) 497-3362.

Sincerely,

Pam LeProwse
Administrative Assistant
Regulatory Affairs

NorthWestern Energy
Docket No. D2015.8.64
Greycliff's Petition to Set Terms and Conditions

Greycliff Wind Prime, LLC
Set 1 (001-011)

Data Requests received November 25, 2015

GWP-006 RE: Witness: Luke P. Hansen
 Page: LPH-4
 Subject: PowerSimm Dispatch Assumptions

On Page LPH-4 of NWE's response testimony, you state that "PowerSimm™ first calculates the hourly dispatch of NorthWestern's supply portfolio and then compares the Greycliff energy production to that supply portfolio. Only after this comparison is made can the value of the Greycliff wind resource be calculated."

- (a) Please provide the hourly, monthly and annual demand levels, and the hourly, monthly and annual generator dispatch levels for NWE supply resource modeled in PowerSimm™.
- (b) Please provide the input fuel costs, emissions rates and costs, variable operating and maintenance costs, heat rates, and other parameters used by NWE in modeling its system using PowerSimm™ for purposes of estimating avoided cost in this proceeding.
- (c) Please provide the hourly, monthly and annual energy and/or capacity market prices used in the PowerSimm™ simulation for purposes of estimating avoided cost in this proceeding.
- (d) Please provide all workpapers, calculations and PowerSimm™ simulation output for your assessment and derivation of avoided cost in this proceeding.

RESPONSE:

- (a) NorthWestern has objected in part to this data request. See NorthWestern's Objections to Data Requests Served on November 25, 2015 filed on December 7, 2015. For the monthly and annual information, see the response to Data Request PSC-012a.
- (b) See the response to Data Request PSC-012b.
- (c) NorthWestern has objected in part to this data request. See NorthWestern's Objections to Data Requests Served on November 25, 2015 filed on December 7, 2015. For the monthly and annual information, see the response to Data Request PSC-012a.
- (d) See the response to Data Request PSC-012a.

NorthWestern Energy
Docket No. D2015.8.64
Greycliff's Petition to Set Terms and Conditions

Greycliff Wind Prime, LLC
Set 1 (001-011)

Data Requests received November 25, 2015

GWP-006 cont'd

UPDATED RESPONSE (April 25, 2016):

- (a) Pursuant to the Notice of Commission Action served April 18, 2016, NorthWestern and Greycliff reached a compromise regarding the data to be provided in response to this request. As a result, see the "GWP-006" folder on the attached DVD. Note that these files are too large to be opened in Excel. NorthWestern has accessed these files using Notepad++, a free software program that is available online. According to staff at Ascend Analytics, the files may also be opened using the Microsoft Access program.

- (c) See the updated response to Data Request GWP-007.

NorthWestern Energy
Docket No. D2015.8.64
Greycliff's Petition to Set Terms and Conditions

Greycliff Wind Prime, LLC
Set 1 (001-011)

Data Requests received November 25, 2015

GWP-007 RE: Witness: Luke P. Hansen
 Page: LPH-4
 Subject: PowerSimm Dispatch Assumptions

On Page LPH-7 of NWE's response testimony, you state that the "market forecasts for carbon dioxide, coal, natural gas, and electricity were also updated" for the avoided cost calculations.

Please provide the hourly, monthly and annual price series for electricity, natural gas, coal and carbon dioxide, as those series were used in external modeling and in the PowerSimm™ simulation and derivation of NWE's avoided cost estimate.

RESPONSE:

NorthWestern has objected in part to this data request. See NorthWestern's Objections to Data Requests Served on November 25, 2015 filed on December 7, 2015.

See the response to Data Request PSC-012b for monthly forward prices. Annual prices are simulated in PowerSimm™ using the monthly forward prices as a basis for the simulations. The annual prices are a weighted average of the monthly prices.

UPDATED RESPONSE (April 25, 2016):

Pursuant to the Notice of Commission Action served April 18, 2016, NorthWestern and Greycliff reached a compromise regarding the data to be provided in response to this request. As a result, see the "GWP-007" folder on the DVD attached to Data Request GWP-006. Note that this file is too large to be opened in Excel. NorthWestern has accessed it using Notepad++, a free software program that is available online. According to staff at Ascend Analytics, it can also be opened using the Microsoft Access program.

NorthWestern Energy
Docket No. D2015.8.64
Greycliff's Petition to Set Terms and Conditions

Greycliff Wind Prime, LLC
Set 1 (001-011)

Data Requests received November 25, 2015

GWP-010 RE: Witness: Luke P. Hansen
 Page: LPH-4
 Subject: PowerSimm Dispatch Assumptions

On Page LPH-4 of NWE's response testimony, you state that "PowerSimm™ first calculates the hourly dispatch of NorthWestern's supply portfolio and then compares the Greycliff energy production to that supply portfolio. Only after this comparison is made can the value of the 8 Greycliff wind resource be calculated." Please answer the following questions regarding this statement:

- (a) Please provide the hourly, monthly and annual demand levels, and the hourly, monthly and annual generator dispatch levels for each NWE supply resource modeled in PowerSimm™.
- (b) Please provide the input fuel costs, emissions rates and costs, variable operating and maintenance costs, heat rates, and other parameters used by NWE in modeling its system using PowerSimm™ for purposes of estimating avoided cost in this proceeding.
- (c) Please provide the hourly, monthly and annual energy and/or capacity market prices used in the PowerSimm™ simulation for purposes of estimating avoided cost in this proceeding.
- (d) Please provide all workpapers, calculations and PowerSimm™ simulation output for your assessment and derivation of avoided cost in this proceeding.
- (e) Please make a copy of the PowerSimm™ model and input dataset available for inspection and review. Greycliff and its consultants will enter into an NDA, if needed, in order to access and review proprietary software.

RESPONSE:

- (a) NorthWestern has objected in part to this data request. See NorthWestern's Objections to Data Requests Served on November 25, 2015 filed on December 7, 2015. See the response to Data Request GWP-006a
- (b) See the response to Data Request GWP-006b.
- (c) NorthWestern has objected to this data request. See NorthWestern's Objections to Data Requests Served on November 25, 2015 filed on December 7, 2015. See the response to Data Request GWP-006c.

NorthWestern Energy
Docket No. D2015.8.64
Greycliff's Petition to Set Terms and Conditions

Greycliff Wind Prime, LLC
Set 1 (001-011)

Data Requests received November 25, 2015

GWP-010 cont'd

- (d) See the response to Data Request GWP-006d.
- (e) NorthWestern cannot provide a copy of the model due to its contract with Ascend Analytics. However, Ascend Analytics has proposed to provide hosted access to the NorthWestern's PowerSimm model to all parties and the Commission staff according to the terms included in the attached proposal. If such hosted access is provided, the signing of non-disclosure agreements may be required by Ascend Analytics. Please refer to the response to Data Request PSC-012b for the input dataset.

UPDATED RESPONSE (April 25, 2016):

- (a) See the updated response to Data Request GWP-006(a).
- (c) See the updated response to Data Request GWP-006(c).

CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of NorthWestern Energy's updated responses to Data Requests GWP-006(a) and (c), GWP-007, and GWP-010(a) and (c) in the GWP Set 1 Data Requests (001-011) in Docket No. D2015.8.64 have 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 mailed to the remainder of the service list as follows:

Will Rosquist
Administrator, Regulatory Division
MT Public Service Commission
Box 202601
Helena, MT 59620-2601

Michael J. Uda
Uda Law Firm, P.C.
7 Sixth Street West
Power Block West, 4H
Helena, MT 59601

Patrick Pelstring
National Renewable Solutions
328 Barry Avenue, Ste. 100
Wayzata, MN 55391

Sarah Norcott
NorthWestern Energy
208 N. Montana Ave Suite 205
Helena, MT 59601

John Alke
NorthWestern Energy
208 N. Montana Ave Suite 205
Helena, MT 59601

Joe Schwartzenberger
NorthWestern Energy
11 E. Park
Butte, MT 59701

Pam LeProwse
NorthWestern Energy
11 E. Park
Butte, MT 59701

Date: April 25, 2016



Pam LeProwse
Administrative Assistant
Regulatory Affairs