

February 14, 2014

Ms. Kate Whitney  
Administrator, Regulatory Division  
Montana Public Service Commission  
1701 Prospect Avenue  
PO Box 202601  
Helena, MT 59620-2601

RE: NorthWestern Energy's Supplemental Testimony and Exhibits in Docket No. D2013.12.85 - NorthWestern Energy's Approval to Purchase and Operate PPL Montana's Hydroelectric Facilities, for Approval of Inclusion of Generation Asset Cost of Service in Electricity Supply Rates, for Approval of Issuance of Securities to Complete the Purchase, and for Related Relief

Dear Ms. Whitney:

NorthWestern Corporation d/b/a NorthWestern Energy ("NorthWestern") hereby submits to the Montana Public Service Commission ("Commission") the enclosed filing to supplement its Application for Approval to Purchase and Operate PPL Montana's Hydroelectric Facilities, for Approval of Inclusion of Generation Asset Cost of Service in Electricity Supply Rates, for Approval of Issuance of Securities to Complete the Purchase, and for Related Relief ("Supplemental Filing"). The Supplemental Filing consists of printed material and one CD.

On January 2, 2014, the Commission issued Data Request PSC-047 ("PSC-047") in this docket, which asked NorthWestern to provide PowerSimm model results for eight additional portfolios. As set out in the attachment to NorthWestern's Motion for Leave to Respond to Evergreen Economics' Memorandum ("Motion") filed with the Commission on January 29, 2014, NorthWestern and Commission Staff agreed to modify the scope of PSC-047 to limit and provide PowerSimm modeling results for only portfolio numbers 3, 7 and 8 described as follows:

3. *Current + 1 GE LMS 100 SCCT in 2018*
7. *Current + 1 GE LMS 100 SCCT in 2025 + 100 MW wind in 2025*

*8. Current + 1 GE 7FA.04 ACC in 2025 + 100 MW wind  
in 2025*

NorthWestern agreed that it would run three additional portfolios in stochastic modes and they would be based on the same set of carbon assumptions used in its 2013 Electricity Supply Resource Procurement Plan ("2013 Plan").

By Notice of Commission Action dated February 5, 2014, the Commission granted NorthWestern's Motion.

Accordingly, this Supplemental Filing consists of testimony and exhibits that include and support the additional modeling information as follows:

1. The Prefiled Supplemental Testimony of John D. Hines ("Hines Supplemental Testimony") summarizing the additional modeling results and the basis for these updates (printed material),
2. The Prefiled Supplemental Testimony of Joseph M. Stimatz ("Stimatz Supplemental Testimony"), which addresses in detail the additional modeling (printed material),
3. Exhibit\_\_(APP-4S) as a supplement to Exhibit\_\_(APP-4), NorthWestern's 2013 Plan, updating the 2013 Plan to reflect the additional modeling described above (included on the attached CD);
4. An electronic version of the Net Present Value Portfolio Costs tables on page JDH-6 of the Hines Supplemental Testimony and page JMS-4 of the Stimatz Supplemental Testimony (included on the attached CD) and,
5. An electronic version of the Stochastic Modeling Results table on page JMS-5 of the Stimatz Supplemental Testimony (included on the attached CD).

NorthWestern is filing an updated response to Data Request PSC-047 simultaneously with this Supplemental Filing.

An original and ten copies of this Supplemental Filing are submitted with this letter, three copies will be delivered to the Montana Consumer Counsel, and one copy will be mailed to the most recent service list in this docket on this date.

Whitney Letter  
February 14, 2014  
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Respectfully submitted,

Handwritten signature of Patrick R. Corcoran in blue ink, with the initials "BY Jd" written below it.

Patrick R. Corcoran  
Vice-President  
Government and Regulatory Affairs

Enclosures

**CERTIFICATE OF SERVICE**

I hereby certify that original and ten copies of NorthWestern Energy's Supplemental Testimony & Exhibits, in the Application for Approval to Purchase and Operate the Hydroelectric Facilities of PPL Montana, LLC in Docket No. D2013.12.85 filed on December 20<sup>th</sup> has been mailed to the most current service list in this Docket and e-filed on the Montana Public Service Commission's website. It has been emailed to the Counsel of Record.

Date: February 14, 2014



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**Docket No D2013.12.85**  
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**Service List**

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9 **PREFILED SUPPLEMENTAL TESTIMONY OF**  
10 **JOHN D. HINES**  
11 **ON BEHALF OF NORTHWESTERN ENERGY**  
12

13 **Witness Information**

14 **Q. Please state your name and business address.**

15 **A.** My name is John D. Hines. My business address is 40 East Broadway,  
16 Butte, Montana 59701.  
17

18 **Q. Are you the same John D. Hines who submitted prefiled direct**  
19 **testimony in this docket?**

20 **A.** Yes.  
21

22 **Q. What is the purpose of this supplemental testimony?**

23 **A.** Under an agreement with the Montana Public Service Commission  
24 (“Commission”), NorthWestern has performed additional portfolio  
25 modeling runs subsequent to the filing of my prefiled direct testimony in  
26 this docket. In my direct testimony, I referred to modeling results from  
27 NorthWestern’s 2013 Electricity Supply Resource Procurement Plan

1 ("2013 Plan"). The additional portfolio modeling has been provided as a  
2 supplement to the 2013 Plan ("2013 Plan Supplement"). My supplemental  
3 testimony explains that there are no fundamental changes to my prefiled  
4 direct testimony; in fact the conclusion that the acquisition of the hydro  
5 asset results in the lowest-cost, lowest-risk portfolio is in fact strengthened  
6 as a result of the additional modeling. The Prefiled Supplemental  
7 Testimony of Joseph M. Stimatz ("Stimatz Supplemental Testimony")  
8 describes the results of the additional stochastic modeling that was  
9 performed and provides the basis for my supplemental testimony.

10  
11 **Q. Please explain why NorthWestern developed the 2013 Plan**  
12 **Supplement and this supplemental testimony.**

13 **A.** On January 2, 2014, the Commission issued Data Request PSC-047  
14 ("PSC-047") in this docket (Docket No. D2013.12.85), which asked  
15 NorthWestern to provide PowerSimm model results for eight additional  
16 portfolios. As set out in the attachment to NorthWestern's Motion for  
17 Leave to Respond to Evergreen Economics' Memorandum ("Motion") filed  
18 with the Commission on January 29, 2014, NorthWestern and  
19 Commission Staff agreed to modify the scope of PSC-047 as follows:

20  
21 *"As a result of the January 24, 2014 discussion with Staff regarding*  
22 *this section of the Evergreen Memorandum and NorthWestern's*  
23 *response to MPSC No. PSC-047 we agreed to the following:*

1           For MPSC Data Request No. PSC-047, we agreed to limit and  
2           provide PowerSimm modeling results for only portfolio numbers 3, 7  
3           and 8, as modified below:

- 4
- 5           3.       Current + 1 GE LMS 100 SCCT in 2018
  - 6           7.       Current + 1 GE LMS 100 SCCT in 2025 + 100 MW wind in  
7               2025
  - 8           8.       Current + 1 GE 7FA.04 ACC in 2025 + 100 MW wind in 2025

9

10           Per our discussion, the three additional portfolios will be run in  
11           stochastic modes and will be based on the same set of carbon  
12           assumptions used in the 2013 Plan. This consistency will allow results  
13           of the additional modeling to be compared with the earlier modeling  
14           results as included in both the 2103 Plan and the Hydros application.”

15

16           By Notice of Commission Action dated February 5, 2014, the Commission  
17           granted NorthWestern's Motion.

18

19           Accordingly, the modified additional modeling information required by  
20           PSC-047 was filed by NorthWestern with the Commission on February 14,  
21           2014 under two dockets as follows:

- 22
- 23           1. A supplement to NorthWestern's 2013 Plan in Docket No. N2013.12.84  
24               to reflect the additional modeling described above; and,

1 2. A supplement to this docket, which includes the following:

- 2 a. Supplemental material to Exhibit\_\_(APP-4), NorthWestern's 2013  
3 Plan, updating the 2013 Plan to reflect the additional modeling  
4 described above;
- 5 b. The Stimatz Supplemental Testimony, which addresses in detail  
6 the additional modeling; and
- 7 c. This supplemental testimony summarizing the additional modeling  
8 results and the basis for these updates.

9

10 **Q. Have NorthWestern's conclusions as presented in your direct  
11 testimony changed as a result of the additional modeling?**

12 **A.** No. My prefiled direct testimony identifies NorthWestern's purchase of  
13 PPL Montana, LLC's 11 hydroelectric generating facilities and related  
14 assets ("Hydros") as the least-cost, lowest-risk portfolio compared to the  
15 current portfolio and current plus combined cycle (current plus CC)  
16 alternatives. This conclusion is unchanged. The Hydros portfolio  
17 continues to offer the least-cost, lowest-risk alternative when comparing  
18 long-term, risk-adjusted portfolio costs including the results for the  
19 additional three new portfolios.

20

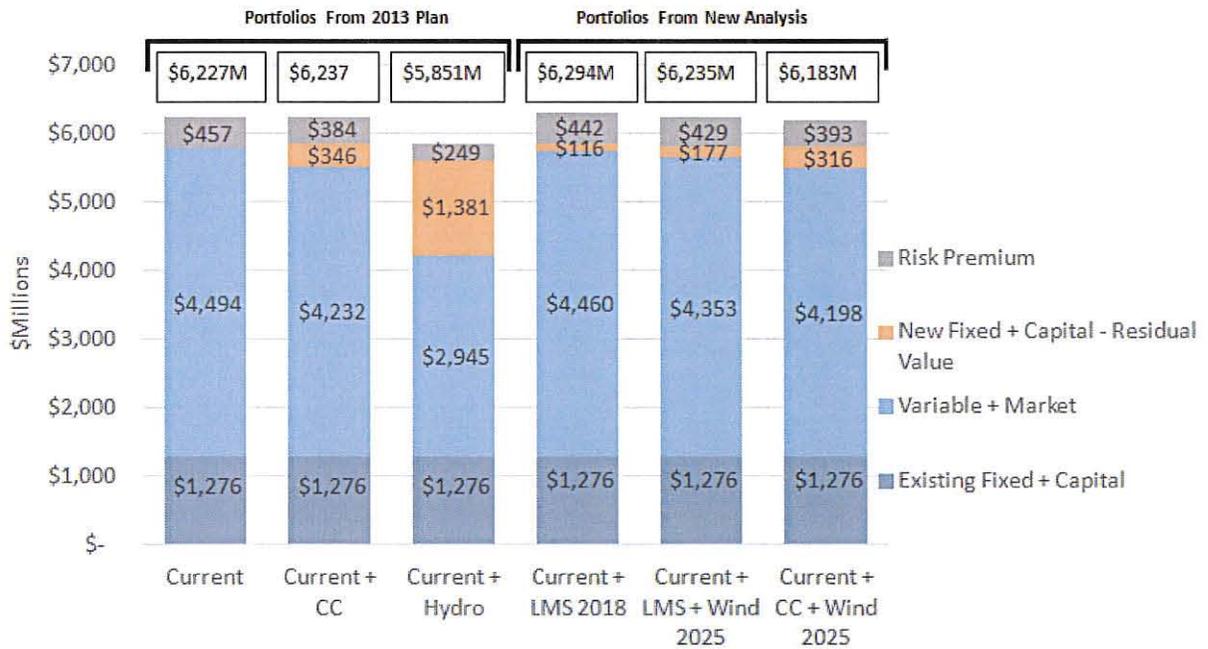
21 **Q. Do the results of the supplemental modeling require you to update  
22 information provided in your direct testimony? If so, please provide  
23 these updates.**

1 **A.** Yes, certain portions of my testimony must be updated to reflect the  
2 modeling results included in the 2013 Plan Supplement. It is important to  
3 note that these updates are minor modifications to calculations based on  
4 information provided in Table 2 of my prefiled direct testimony (on page  
5 JDH-37) and do not represent material changes to conclusions, or the  
6 ranking of the current plus hydro portfolio as the least-cost, lowest-risk  
7 portfolio.

8  
9 Table 2 on page JDH-37 has been updated to include the three additional  
10 portfolios that were modeled. (Slight updates were also made to the  
11 original portfolio analyses and these updates are explained in the Stimatz  
12 Supplemental Testimony and the 2013 Plan Supplement.) Note that due  
13 to the update, there are slight changes in numerical calculations in my  
14 direct testimony. The updated table is shown below:

15

**Table 2. 30-Year NPV Total Portfolio Costs, Risk Adjusted**



1 After considering the revisions made to Table 2, the conclusions in my  
 2 direct testimony beginning on page JDH-36 have only been reinforced by  
 3 the additional modeling performed.

4

5 **Q. Based on the results of the additional modeling that has been**  
 6 **performed, do any of these portfolios offer a lower-cost, lower-risk**  
 7 **alternative to the current plus hydro alternative?**

8 **A.** No, they do not.

9

10 **Q. Does this conclude your testimony?**

11 **A.** Yes, it does.

8 **PREFILED SUPPLEMENTAL TESTIMONY OF**  
9 **JOSEPH M. STIMATZ**  
10 **ON BEHALF OF NORTHWESTERN ENERGY**  
11

12 **Witness Information**

13 **Q. Please state your name and business address.**

14 **A.** My name is Joseph (Joe) M. Stimatz. My business address is 40 East  
15 Broadway, Butte, Montana 59701.  
16

17 **Q. By whom are you employed and in what capacity?**

18 **A.** I am employed by NorthWestern Energy ("NorthWestern") as the Manager  
19 of Asset Optimization in the Energy Supply Market Operations group.  
20

21 **Q. Are you the same Joseph Stimatz who submitted prefiled direct**  
22 **testimony in this docket?**

23 **A.** Yes.  
24

25 **Q. What is the purpose of this supplemental testimony?**

1 **A.** In my direct testimony, I referred to modeling results from NorthWestern's  
2 2013 Electricity Supply Resource Procurement Plan ("2013 Plan"). The  
3 2013 Plan has been supplemented ("2013 Plan Supplement") to include  
4 additional stochastic modeling. As described in the Prefiled Supplemental  
5 Testimony of John D. Hines ("Hines Supplemental Testimony"), the 2013  
6 Plan Supplement is included in this filing as an update to Exhibit\_\_(APP-  
7 4), the 2013 Plan, included with NorthWestern's Application in this docket.  
8 I am providing this testimony to describe the results of the additional  
9 modeling that has been performed.

10

11 **Q. Why did NorthWestern supplement the 2013 Plan?**

12 **A.** The Hines Supplemental Testimony explains the reason for the 2013 Plan  
13 Supplement.

14

15 **Q. What portfolios were originally modeled in the 2013 Plan?**

16 **A.** At NorthWestern's direction, Ascend Analytics modeled three cases: 1)  
17 existing resources in the supply portfolio plus market purchases to meet  
18 load requirements (the "Current" portfolio); 2) existing resources plus the  
19 addition of an effectively sized 239 MW (270 MW nominal capacity,  
20 adjusted for elevation in Montana) combined cycle plant (as defined in the  
21 2013 Plan) dispatched economically and supplemented with market  
22 purchases ("Current Plus CC"); and 3) existing resources plus the Hydros,  
23 supplemented with market purchases ("Current Plus Hydro").

1 **Q. What additional portfolios were modeled for the 2013 Plan**  
2 **Supplement?**

3 **A.** Three additional portfolios were modeled: 1) existing resources plus an  
4 LMS 100 gas-fired combustion turbine ("LMS 100") added in 2018,  
5 supplemented with market purchases ("Current Plus LMS 2018"); 2)  
6 existing resources plus an LMS 100 added in 2025, plus 100 MW of wind  
7 generation added in 2025, supplemented with market purchases ("Current  
8 Plus LMS Plus Wind 2025"); and 3) existing resources plus the effectively  
9 sized 239 MW combined cycle gas-fired plant described above added in  
10 2025, plus 100 MW of wind generation added in 2025, supplemented with  
11 market purchases ("Current Plus CC Plus Wind 2025").

12  
13 **Q. Were any updates made to the three original portfolios?**

14 **A.** Yes, there were two minor updates. First, the historical wind production  
15 data set that is used to model future wind production was expanded to  
16 include production data through December 2013. This allowed the  
17 modeling to utilize a full year of production from Spion Kop rather than the  
18 partial year that had been available in the summer of 2013 when the  
19 original modeling was developed. Second, the modeling of start-up costs  
20 for the combined cycle plant was adjusted. The original modeling  
21 accounted for start-up costs as a variable cost per MWh; the supplemental  
22 modeling depicts these costs on a cost per start basis with a  
23 corresponding reduction of variable cost per MWh. These updates

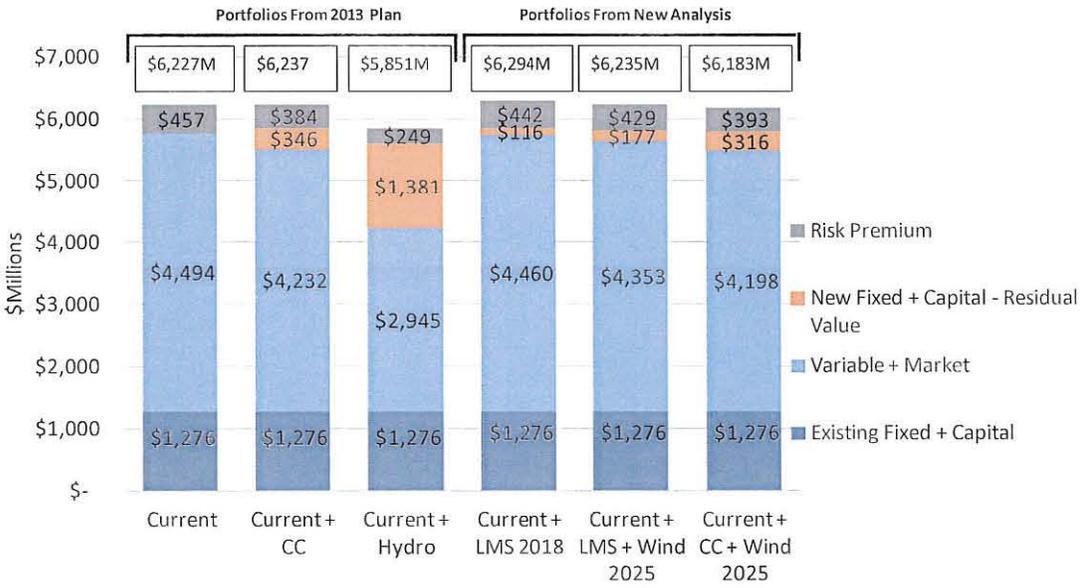
1 changed the risk-adjusted Net Present Value (“NPV”) of each of the  
 2 original portfolio costs by less than \$10 million. Please see the 2013 Plan  
 3 Supplement for more detail.

4

5 **Q. Please describe the results of the supplemental stochastic modeling.**

6 **A.** The Current Plus Hydro portfolio significantly outperformed all of the other  
 7 alternative portfolios. The chart below presents the results of the  
 8 modeling on a risk-adjusted NPV basis.

**Net Present Value of Portfolio Costs, 2015-2043**



9 In the chart, the six columns represent the six portfolio alternatives: the  
 10 Current portfolio, Current Plus CC, Current Plus Hydro, Current Plus LMS  
 11 2018, Current Plus LMS Plus Wind 2025, and Current Plus CC Plus Wind  
 12 2025. The “Existing Fixed + Capital” segment represents the fixed costs  
 13 and capital costs of the resources currently in the supply portfolio. The  
 14 “Variable + Market” segment of each column represents the variable costs

1 of existing resources in the supply portfolio, plus the variable costs of new  
 2 additions to the portfolio, plus the cost of market purchases. The "New  
 3 Fixed + Capital – Residual Value" segment represents the fixed costs and  
 4 capital investments of the new addition (the CCCT, LMS, Wind, or the  
 5 Hydros, depending on the portfolio), minus the NPV of the residual value  
 6 of the new resource at the end of the evaluation period. The "Risk  
 7 Premium" segment represents the quantification of the market price risk  
 8 for each portfolio.

9  
 10 The total risk-adjusted NPV of the costs is the sum of the segments for  
 11 each portfolio. The total NPV of costs is summarized in the table below in  
 12 order of least costly to most costly.

<b>Stochastic Modeling Results (\$Billions)</b>		
<b>Portfolio</b>	<b>NPV of Costs</b>	<b>NPV vs. Current + Hydro</b>
Current + Hydro	\$5.851	
Current + CC + Wind 2025	\$6.183	\$0.332
Current	\$6.227	\$0.376
Current + LMS + Wind 2025	\$6.235	\$0.384
Current + CC	\$6.237	\$0.386
Current + LMS 2018	\$6.294	\$0.443

13 Consistent with my prefiled direct testimony, on a risk-adjusted NPV basis,  
 14 the cost of the portfolio with the Hydros is lower than the Current and  
 15 Current + CC portfolios. The cost differences changed slightly from the  
 16 original models as a result of the minor updates described above. The

1 risk-adjusted NPV of the cost of the portfolio with the Hydros is \$332  
2 million lower than the portfolio that adds a combined cycle plant and wind  
3 in 2025, and \$443 million lower than the portfolio that adds the LMS in  
4 2018.

5

6 **Q. What conclusions do you draw from the supplemental stochastic**  
7 **modeling?**

8 **A.** The modeling further illustrates the value that the Hydros provide to  
9 NorthWestern's customers. The addition of these resources provides  
10 lower expected costs and lower risk than the alternatives.

11

12 **Q. Does this conclude your supplemental testimony?**

13 **A.** Yes, it does.