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**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA**

**IN THE MATTER OF The Complaint By
Oak Tree Energy LLC Against
NorthWestern Energy For Refusing To
Enter Into A Purchase Power Agreement**

DOCKET NO. EL11-006

**OAK TREE ENERGY, LLC'S
REBUTTAL TESTIMONY OF J. RICHARD LAUCKHART**

I. INTRODUCTION

1 Q. Please state your name and employment.

2

3 A. My name is J. Richard Lauckhart. I am an energy consultant.

4 Q. Are you the same J. Richard Lauckhart who provided Direct Testimony in this
5 proceeding?

6

7 A. Yes.

8 Q. Whose testimony are you rebutting in this case?

9

10 A. I am primarily rebutting the testimony of NorthWestern witnesses Bleau LaFave, Steven

1 Lewis, Dennis Wagner, Richard Green and Pamela Bonrud. I am also responding to the
2 testimony of Commission Staff witness Brian Rounds.

3
4 **II. SUMMARY OF TESTIMONY**

5
6 *Q. Please summarize your rebuttal testimony to NorthWestern witnesses in this case.*

7
8 A. As a whole, NorthWestern witnesses testify to the reasons that the SDPUC should not
9 approve the rate reflected in the Oak Tree Legally Enforceable Agreement (LEO). In
10 doing so, NorthWestern witnesses provide testimony on several aspects of the proposed
11 Oak Tree wind project that I will demonstrate are invalid. NorthWestern has provided
12 different information to its Board on its need for new capacity than they have provided to
13 the SDPUC and Oak Tree in this proceeding. Further, I have observed that when
14 NorthWestern wants the Montana Public Service Commission (MPSC) to approve
15 a wind project that NorthWestern will own in Montana, NorthWestern is very positive
16 about wind. However, when NorthWestern does not want to be required to purchase the
17 output of a wind project in South Dakota from an independent party seeking to sell its
18 output pursuant to the Public Utility Regulatory Policies Act of 1978 (PURPA),
19 NorthWestern is very negative about the prospects of acquiring wind generation to serve
20 its customers. The contrast in NorthWestern's views on wind in the two proceedings is
21 very enlightening. In summary, my testimony will demonstrate that the Oak Tree wind
22 project in South Dakota would be every bit as good for South Dakota ratepayers, if not
23 better than, the Spion Kop wind project that NorthWestern proposes to own will be to
24 Montana ratepayers.

25
26 While NorthWestern testifies in this proceeding in South Dakota that the avoided cost of
27 a wind plant would appear to be about \$35.85/MWh, NorthWestern has simultaneously
28 testified before the Montana PSC that the value of a wind plant in Montana is
29 \$75.52/MWh. There is no legitimate reason for such a large difference in the value of
30 wind between South Dakota and Montana. It is further noteworthy that the MPSC ruled
31 in October 2011 that an appropriate avoided cost to pay a wind plant would be
32 \$57.87/MWh when the wind plant gets to keep the Renewable Energy Credit (REC). *See*

1 Final Order 7108e, Docket D2010.7.77, at p. 26 (October 19, 2011) (attached hereto as
2 “Exhibit 1”). The MPSC determined avoided cost rate for wind would be consistent with
3 the price that Oak Tree has provided in its February 25, 2011 LEO/PPA. The MPSC’s
4 rate determination is particularly noteworthy because the MPSC was using new gas
5 prices that were only known after February 25, 2011, thus incorporating new information
6 regarding natural gas prices, which have fallen in the past year.

7
8 *Q. Please summarize your rebuttal testimony to Commission Staff witness Brian Rounds.*

9
10 *A. I will address some of the concerns that Mr. Rounds has with the price forecast developed*
11 *by Mr. Lewis. I will also address some of the concerns and questions that Mr. Rounds*
12 *has about the Black & Veatch model.*

13
14 **III. [SECTION REDACTED – CONTAINS CONFIDENTIAL INFORMATION]**

15
16 **IV. COMPARING NORTHWESTERN WIND TESTIMONY IN MONTANA WITH**
17 **ITS TESTIMONY IN SOUTH DAKOTA**

18
19 *Q. When did NorthWestern testify about its Spion Kop wind project in Montana?*

20
21 *A. NorthWestern’s prefiled testimony supporting its request to the MPSC to approve its*
22 *40MW Spion Kop wind project was filed in May 2011. See Docket D2011.5.41. The*
23 *evidentiary hearing in that docket was held on December 14 and 15, 2011. NorthWestern*
24 *filed its Initial Brief on January 20, 2012 and its Response Brief on January 27, 2012.*

25
26 *Q. What did NorthWestern say about the benefits of its proposed 40 MW ownership of the*
27 *Spion Kop wind project in Montana?*

28
29 *A. In NorthWestern’s Initial Brief filed on January 20, 2012¹ NorthWestern stated the*
30 *following:*

31
32 ...approval of the Application will benefit customers by:

- 33 • Reducing reliance on market purchases and therefore reducing exposure to
- 34 market price risk;
- 35 • Reducing exposure to fuel price uncertainty;
- 36 • Reducing exposure to the costs of potential environmental regulation;

¹ NorthWestern’s Initial Brief can be accessed at: <http://psc.mt.gov/Docs/ElectronicDocuments/pdfFiles/D2011-5-41IN12012057808B.PDF>

- Reducing exposure to the risk of increased cost of complying with Montana's Renewable Portfolio Standard ("RPS") within the statutory cost cap;
- Providing resource diversity;
- Providing relative price stability for a portion of the electricity supply portfolio plus the terminal value of the project; and
- Enhancing the financial health of the utility leading to a lower cost of capital.

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8 *Q. Did NorthWestern testify in the Spion Kop proceeding that the Federal Production Tax Credit would be expiring at the end of 2012 and that it would be important to line up new wind supplies that could be on line before that time in order to assure that ratepayers would get wind that reflects lower costs provided by Federal Tax Credits?*

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12
13 *A. Yes. NorthWestern made a big point of this matter in the Spion Kop proceeding. If ratepayers ultimately want wind, they will want wind whose cost has been reduced by the production tax credit.*

14
15
16
17 *Q. Has NorthWestern pointed this out in the Oak Tree proceeding?*

18
19 *A. No. However, Oak Tree has indicated that it needs the tax credits in order to make the Oak Tree wind project pencil out at the price included in the LEO/PPA. Clearly, what would be good for ratepayers in Montana, would also be good for ratepayers in South Dakota.*

20
21
22
23
24 *Q. Did NorthWestern ask Mr. Lewis to provide a forecast of spot market energy prices in the Spion Kop proceeding, D2010.7.77?*

25
26
27 *A. No. In fact, NorthWestern indicated that the cost of Spion Kop could be as low \$53.15 levelized over 25 years (not including the cost of integration). If Mr. Lewis had introduced the spot market price forecast methodology he has used in this Oak Tree proceeding in the Spion Kop proceeding, then Spion Kop at \$53.15/MWh would have appeared to be too costly.*

28
29
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32
33 *Q. Did Mr. Wagner testify in the Spion Kop proceeding D2010.7.77 that there are risks associated with the variability of the wind resource?*

34
35
36 *A. No.*

37
38 *Q. Did NorthWestern claim during the Spion Kop proceeding D2010.7.77 that the Spion*

1 *Kop wind farm would have no risks?*

2
3 A. No. NorthWestern acknowledged that the Spion Kop project would have some risks, but
4 that the many benefits of the wind project outweighed the limited risks. In this Oak Tree
5 proceeding, NorthWestern wants to focus on the risks of wind projects and ignore the
6 benefits of wind projects.

7
8 *Q. What is the cost of the Spion Kop project?*

9
10 A. The cost of the Spion Kop project is an unknown. NorthWestern has estimated that the
11 cost of the Spion Kop project is \$53.15/MWh levelized over 25 years (not including the
12 cost of integration). However, it is clear that this is only an estimate. I have reviewed
13 the contracts and the spreadsheet analysis that NorthWestern used to make this estimate.
14 I have testified before the MPSC that the spreadsheet estimate contains a number of
15 optimistic assumptions and that more realistic assumptions would greatly increase the
16 cost of the Spion Kop project to Montana ratepayers. Using the NorthWestern Energy
17 cost model for Spion Kop (which was provided in the Spion Kop proceeding in Montana)
18 and different input assumptions that I believe are reasonably possible; I have estimated
19 that the cost to Montana ratepayers of the Spion Kop project could be as high as
20 \$90/MWh.

21
22 *Q. Has NorthWestern indicated that it needs to assign additional costs to the Spion Kop*
23 *wind project over and above their estimated \$53.15/MWh?*

24
25 A. Yes. NorthWestern indicates that it is a small Balancing Authority with limited resources
26 to provide regulating reserves for wind resources. So, NorthWestern needs to assign a
27 \$14.99/MWh additional cost to the Spion Kop wind project.

28
29 *Q. Has NorthWestern agreed to limit the cost of the Spion Kop project to NorthWestern*
30 *ratepayers to \$53.15/MWh?*

31
32 A. No. In the Spion Kop proceeding in Montana, Chairman Kavulla asked Mr. Hines, Vice
33 President – Supply, if he would be open to a proposal to share any actual costs that might
34 be higher than \$53.15/MWh between ratepayers and NorthWestern shareholders. Mr.

1 Hines responded that he would react negatively to such a proposition. Docket
2 D2011.5.41. Tr. December 14 at p. 109, line 23, through p. 110, line 3.

3
4 *Q. Did the Oak Tree LEO PPA provide that NorthWestern ratepayers pay more than the*
5 *PPA price if actual costs to Oak Tree exceeded the PPA price?*

6
7 A. No. The price risk to ratepayers for Spion Kop is much greater than the price risk to
8 ratepayers under the Oak Tree LEO.

9
10 *Q. Is NorthWestern required to meet a Montana RPS percentage if the cost of the renewable*
11 *is greater than the cost of alternatives?*

12
13 A. No. These RPS targets in Montana are essentially the same as the RPS targets in South
14 Dakota.

15
16 *Q. Did NorthWestern testify in the Spion Kop proceeding, D2010.7.77 that the cost of the*
17 *Spion Kop project plus the integration cost was higher than the cost of spot market*
18 *power?*

19
20 A. No. Mr. Hines testified that it was very difficult to predict the price of spot market power
21 for 20 years, so NorthWestern compared the cost of Spion Kop to a “market sensitivity
22 scenario.” Docket D2011.5.41, Tr. December 14 at p. 114, line 22 through p. 115, line
23 4. He testified that the cost of Spion Kop plus the integration charge compares favorably
24 to the “market sensitivity scenario.” *Id.* Mr. Guldseth of NorthWestern Energy provided
25 the testimony on this “market sensitivity scenario.” *See* Guldseth Prefiled Testimony in
26 D2011.5.41 at p. TAG-8 (attached hereto as “Exhibit 2”). According to the table in Mr.
27 Guldseth’s testimony the full cost of Spion Kop was \$68.77/MWh while the cost of the
28 “sensitivity market scenario + RECs” was \$75.52/MWh. *Id.*

29
30 *Q. In this Docket, Mr. LaFave provides his Exhibit B JL-3 in which he shows the levelized*
31 *cost of “market power” (aka the avoided cost of Oak Tree) to be \$35.85/MWh. This*
32 *\$35.85/MWh avoided cost of Oak Tree wind is less than half the \$75.52/MWh avoided*
33 *cost that NorthWestern calculates for its Spion Kop wind project in Montana. What*
34 *would cause the cost of market power to be so much lower in this South Dakota*
35 *proceeding than it is in the Montana proceeding?*

36
37 A. There is no reasonable explanation. NorthWestern is simply manipulating to its
38 advantage the fact that there is uncertainty in the future. In Montana, when

1 NorthWestern desires to build and own a wind plant for its own rate base purposes, it
2 calculates the levelized cost of market power to be \$75.52/MWh. In South Dakota, when
3 NorthWestern doesn't want the power (in part because it will not be the owner of the
4 plant and cannot earn a return on the investment) NorthWestern hired a consultant to use
5 a completely different approach to determine the value of the wind power. This new
6 approach offered by NorthWestern in this Docket results in an estimate of the price of
7 market power that is approximately 47% of what is estimated for NorthWestern's
8 Montana utility during the same time period.

9
10
11 *Q. Is there any legitimate reason why spot market power in Montana would be less than half*
12 *of the cost of spot market power in South Dakota?*

13
14 *A. No. In both the Montana spot market and in the South Dakota spot market it is generally*
15 *gas fired generation that is on the margin. Mr. Lewis assumes that natural gas prices are*
16 *reasonably estimated at the AECO location for South Dakota price estimations.*
17 *Similarly, natural gas prices are reasonably estimated at the AECO location for Montana*
18 *price estimations. As I will demonstrate later in my testimony, the prime reason the*
19 *forecast by Mr. Lewis is so low is that Mr. Lewis has not performed a reasonable*
20 *estimate of natural gas prices. And NorthWestern did not ask Mr. Lewis to provide his*
21 *gas price forecast in the Spion Kop proceeding, Docket D2010.7.77, in Montana.*

22
23 *Q. Has the Montana PSC issued its Final Order in the Spion Kop proceeding?*

24
25 *A. Yes. That Order was issued on February 16, 2012 (attached hereto as "Exhibit 3" and*
26 *referred to herein as the Spion Kop Order).*

27
28 *Q. What did that Order say about the economics of the Spion Kop wind project?*

29
30 *A. I will first note that once again the MPSC rejected the gas price forecast methodology*
31 *used by Mr. Lewis in his prefiled testimony in this proceeding in South Dakota [Spion*
32 *Kop Order at paragraph 122].*

33
34 *Q. What else did the MPSC say about the economics of the Spion Kop wind project?*
35

1 A. The MPSC acknowledged that there were some uncertainties in the future, but based on a
2 robust analysis of reasonable possible futures, the MPSC concluded that: “Based on the
3 above economic analysis of cost estimates for Spion Kop and a range of alternatives, the
4 Commission finds that acquiring Spion Kop can contribute to just and reasonable rates
5 over the long-term and an electricity supply portfolio that is consistent with ...
6 Commission’s resource planning and procurement rules.” [Spion Kop Order at paragraph
7 130].

8
9 *Q. Did the MPSC express any concerns with the Spion Kop project economics?*

10
11 A. Yes. The MPSC recognized that because NorthWestern would “own” the Spion Kop
12 project rather than purchase its output under a PPA, NorthWestern ratepayers were at
13 greater risk than if the wind was provided pursuant to a PPA. The MPSC noted, for
14 example, that if the Spion Kop wind plant did not generate as much power as was
15 predicted, then the effective \$/MWh cost to Montana ratepayers would go up. [Spion Kop
16 Order at paragraph 130].

17
18 *Q. Would this type of ratepayer risk that the MPSC was concerned about be a risk that
19 South Dakota ratepayers would face under the OakTree LEO?*

20
21 A. No. The Oak Tree LEO provides for the same payment (in \$/MWh) to be made to Oak
22 Tree no matter how much the wind project produces in the way of MWh/year. So it is
23 Oak Tree that is at risk, rather than South Dakota ratepayers, if the Oak Tree project does
24 not generate its estimated annual output.

25
26 **V. MR. LEWIS**

27
28 *Q. What are your observations on the experience that Mr. Lewis has in gas price
29 forecasting?*

30
31 A. Mr. Lewis and I both worked at Puget Sound Power & Light (now Puget Sound Energy)
32 during the years 1990-1996. Mr. Lewis was a staff member in the Power Planning group
33 when I was Vice President of Power Planning during those years. Mr. Lewis was not a
34 gas expert. His expertise was in short term market scheduling/trading. I have looked at
35 the Exhibit SEL-1 to see what Mr. Lewis as done since 1996. From 1996-1999, Mr.

1 Lewis continued to work for Puget Sound Energy on the operating and trading alliance
2 that Puget had with Duke Energy. Mr. Lewis would not have been involved in long term
3 natural gas price forecasting in that endeavor. From 1999 to 2001, Mr. Lewis worked for
4 Seattle City Light, in part helping negotiate a ten year PPA with a gas fired resources.
5 Mr. Lewis indicates he also worked on a natural gas price hedge for Seattle City Light.
6 Typically, hedging activity uses futures markets to hedge prices. Gas price hedging in
7 the industry generally goes out about three years into the future since futures markets
8 generally are not liquid beyond three years. It does not appear to me that Mr. Lewis was
9 performing 20 year gas price forecasts in his work with Seattle City Light. From 2001 to
10 the present, Mr. Lewis was a Principal Consultant with Lands Energy Consulting. His
11 list of projects does not provide any indication that he performed any long term gas price
12 forecasting for those clients.

13
14 *Q. Mr. Lewis has testified in this proceeding that “Lands Energy has used this method [the*
15 *method Mr. Lewis uses in this proceeding] of price forecasting to advise numerous*
16 *clients on the wholesale markets and specifically to support resource management*
17 *decisions.” Did you seek to better understand who the clients were, what reports Lands*
18 *Energy provided to these clients, and how the client’s used the forecasts?*

19
20 *A. Yes. In our limited written discovery to Mr. Lewis we asked for this information.*

21
22 *Q. What did you learn from the answers Mr. Lewis provided to your questions?*

23
24 *A. We did not learn much. Although it is not entirely clear, Mr. Lewis appears to be*
25 *responding that someone else did the forecasting for Lands Energy and not Mr. Lewis.*
26 *Further, Mr. Lewis claims that he cannot disclose the names of the clients because that is*
27 *confidential information. Further, Mr. Lewis claims he cannot provide the reports given*
28 *to these clients because they are also confidential.*

29
30 *Q. Did Mr. Lewis ultimately provide some information on price forecasts that Land’s*
31 *Energy provided to any entity?*

32
33 *A. Yes. In response to an order granting Oak Tree’s Second Motion to Compel, Mr. Lewis*
34 *provided forecasts that Land’s Energy made for NorthWestern in Montana in the years*
35 *2007, 2008, and 2009. The gas price forecasts reflected in these forecasts appear to have*
36 *all been done via the methodology that has been rejected by the MPSC in two different*

1 orders as mentioned elsewhere in this testimony. There remains no evidence in this
2 proceeding that Lands Energy or Mr. Lewis provided long term gas price forecasts to any
3 other entity.

4
5 *Q. Previously you stated you did not learn much about Mr. Lewis's work for other clients, is
6 there anything you can say based on the information you have received from Mr. Lewis
7 thus far?*

8
9 *A. If these clients are not willing to disclose publicly that they used Lands Energy for these
10 natural gas price forecasts, the clients apparently do not feel comfortable letting people
11 know that they are relying on Lands Energy for these forecasts. Further, if Lands
12 Energy's reports to these clients are confidential, then the reports were never made
13 available to decision makers in a publicly noticed meeting and the forecasts could not
14 have been relied upon to justify decisions to third parties in an open and transparent
15 decision making process.*

16
17 *Q. Can you even be sure, without talking to the clients or seeing a report, that the forecasts
18 were anything other than short term forecasts used in trading activity rather than in
19 studies leading to acquisitions of long lived generation assets?*

20
21 *A. No.*

22
23 *Q. Why would it matter that these forecasts were used in trading activity as opposed to long-
24 term generation acquisition costs?*

25
26 *A. Trading activity generally has a much shorter term focus than 20 years. Resource
27 Planning activity would have the longer term focus. If the Lands Energy forecasts were
28 used for trading, it is likely they were not long term forecasts. In this proceeding, we
29 obviously need a long term forecast.*

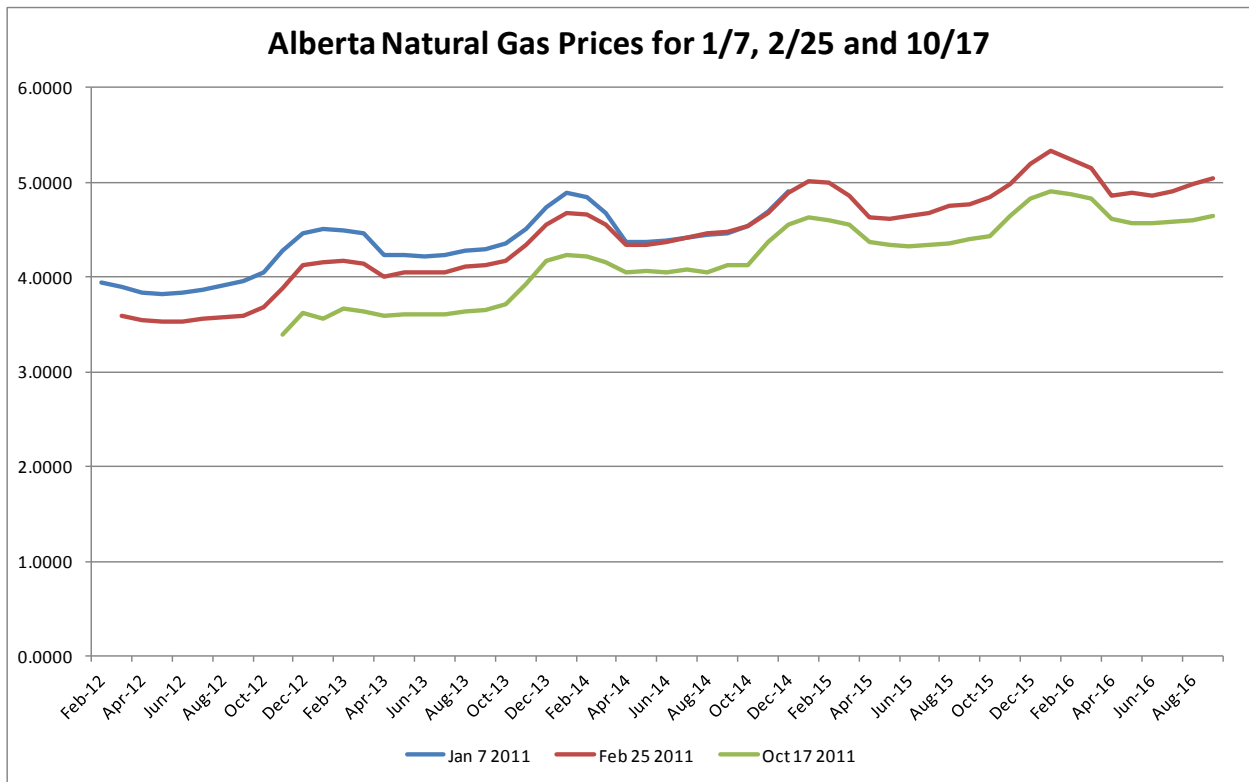
30
31 *Q. Did Mr. Lewis use a fundamentals based gas supply and demand model in developing his
32 long term forecast of natural gas prices?*

33
34 *A. No. As indicated in his testimony, he used a 48 month AECO futures strip dated October
35 17, 2011 through September 2015 and then escalated out the years from Oct 2015
36 through December 2031 by his estimate of the Gross Domestic Product ("GDP") inflation
37 rate.*

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Q. Why would Mr. Lewis pick a date in October rather than choose an AECO futures strip in the January or February timeframe to be consistent with the date that Oak Tree established its LEO?

A. That is a good question, but the answer would appear to be to cause his natural gas price forecast to be lower than it would otherwise be. Further, the use of a future strip on a single date is not a sound basis for setting a 20-year price forecast since the strip changes daily. We asked Mr. Lewis to provide the AECO strip on January 7, 2011 and February 25, 2011. The information he provided shows that the AECO strip on October 17, 2011 is materially lower than the AECO strip on January 7 and February 25, 2011. The information on the three dates is shown on the chart below.



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Q. Has this method ever been determined to be a legitimate method for forecasting natural gas prices?

A. Not to my knowledge. In fact, the Montana PSC specifically rejected this method in its October 19, 2011 Order in Docket No. 7108e, ¶ 64, at p. 22. The Montana Commission found it unreasonable to assume that there would be no “real” increases in natural gas prices from the period 2015-2031. The MPSC pointed out that EIA predicts that natural

1 gas prices will increase at a rate of 2.3% per year, from 2009 to 2035, in real terms (not
2 counting inflation). The MPSC also observed that the very same method used by Mr.
3 Lewis in this proceeding would result in a price forecast that would define the low end of
4 a range of gas price expectations from other gas price forecasting entities. For those
5 reasons, among others, the MPSC rejected the Lewis approach to forecasting natural gas
6 prices.

7
8 *Q. Do entities with reputations for preparing legitimate forecasts of natural gas prices use
9 fundamental based models that rely on estimates of the fundamentals of supply, demand,
10 and the transportation capacity to natural gas from supply sources to demand locations?*

11
12 *A. Yes. The Northwest Power Planning Council acknowledges this in their most recent
13 Power Plan for the Pacific Northwest. They state as follows:*

14 The Council's forecast of natural gas prices is informed by national level forecasts
15 of prices from other organizations that specialize in analysis of fuel commodity
16 markets. Such forecasts rely on estimates of the fundamentals of supply, demand,
17 and the transportation capacity to move natural gas from supply sources to
18 demand locations.

19
20 *Q. Please list those organizations that specialize in analysis of fuel commodity markets and
21 the models they use in making their forecasts.*

22
23 *A. I am aware of the following organizations that specialize in 20 year analysis of fuel
24 commodity markets and the models they use:*

- 25 • IHS_CERA (aka Cambridge Energy Research Associates) – GPCM
- 26 • Wood Mackenzie – GPCM
- 27 • Energy Information Administration (EIA) – National Energy Modeling System (NEMS)
- 28 • Delloitte – NARG
- 29 • Black & Veatch – GPCM
- 30 • Navigant-GPCM
- 31 • TransCanada-GPCM
- 32 • Exxon Mobil-GPCM
- 33 • Shell-GPCM
- 34 • Conoco Phillips-GPCM

35
36 *Q. There are several entities including Black & Veatch that use GPCM. What is GPCM?*

37
38 *A. GPCM is a fundamental based gas model developed and licensed by RBAC Inc.*

39 <http://rbac.com/ProductsServices/GPCMGasModel/tabid/80/Default.aspx>

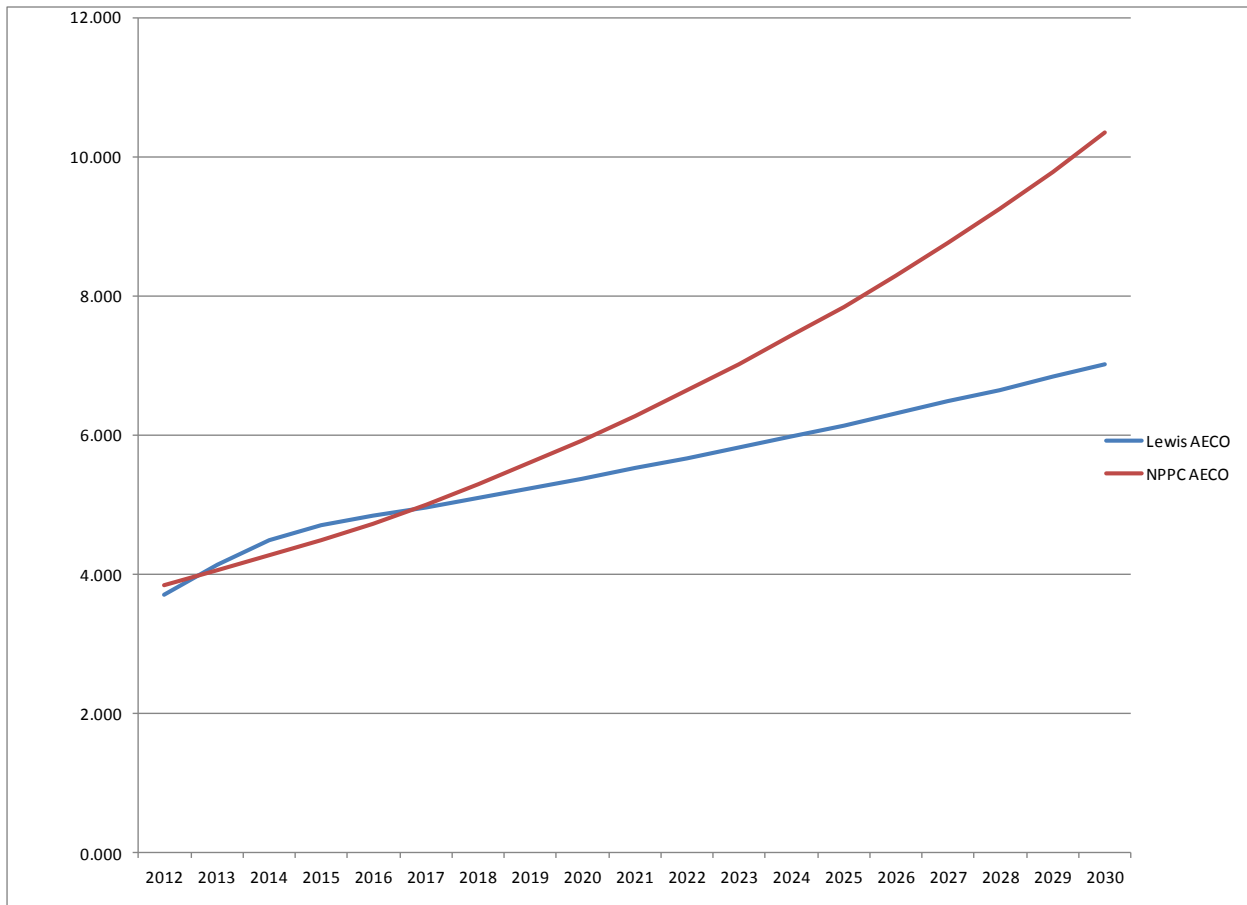
1 The website indicates there are 28 licensees that use the GPCM software to forecast
2 natural gas prices.

3
4 *Q. Could NorthWestern have chosen one of these organizations that specialize in analysis
5 of fuel markets to prepare a gas price forecast rather than asking Steve Lewis?*

6
7 *A. Yes. If NorthWestern had done so, it would have obtained a much more defensible 20-
8 year forecast of natural gas prices. And as the MPSC has indicated, NorthWestern would
9 have found that the Lewis forecast is on the low end of a range of legitimate gas price
10 forecasts.*

11
12 *Q. Did the Northwest Power Planning Council develop an update to its natural gas price
13 forecast at about the same time that Steve Lewis developed his forecast for this
14 proceeding?*

15
16 *A. Yes. The Northwest Power Planning Council (NPPC) updated their natural gas price
17 forecast on August 10, 2011. The chart below shows the Steve Lewis gas price forecast
18 and the Northwest Power Planning Council forecast in nominal dollars for the AECO hub
19 in \$/MMBtu.*



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It is noteworthy that the Lewis forecast and the NPPC forecast are nearly identical through 2016 when Lewis uses the AECO forward strip. However, after 2016 the forecasts diverge substantially. That is because the Lewis forecast assumes no “real” increase in natural gas price over that period while the NPPC assumed real increases in natural gas prices over that period.

Q. Are there problems with how Mr. Lewis converted his natural gas price forecast into a forecast of spot electricity prices?

A. Yes. Organizations that specialize in forecast spot market electricity prices not only need a forecast of natural gas prices, they also need to understand the fundamentals of the demand for and operating characteristics of power plants in the region that can be used to meet the demand. Further, these organizations need to estimate how environmental concerns will be impacting power supplies. For example, the U.S. Environmental Protection Agency (EPA) is putting considerable pressure on coal plants to “clean up” or

1 shut down. The cost of cleaning up emissions from a coal plant is considerable. It is
2 widely believed that many entities will be forced to shut down their coal plants and
3 replace them with natural gas fired resources. This not only increases the demand for
4 natural gas (which increases natural gas prices), but it also can remove low variable cost
5 coal generation from setting the margin for power on some light load hours. The
6 approach taken by Mr. Lewis does not reflect these realities.

7
8 *Q. Did Mr. Lewis include a forecast of carbon emissions prices?*

9
10 A. Mr. Lewis did not include any GHG emissions charge in his base forecast of spot market
11 prices. This conflicts with Mr. Hines's testimony in the Spion Kop proceeding that wind
12 was being added in Montana as a hedge against carbon legislation. D2011.5.41, Tr.
13 December 14 at p. 23, lines 1-4. Similarly, Mr. Guldseth testified in the Spion Kop
14 proceeding that it would be prudent for a regulator to factor in a risk of EPA regulating
15 green house gases when considering whether acquisition of wind resource is appropriate
16 or not. D2011.5.41, Tr. December 15 at p. 62, lines 1-20.

17
18 *Q. On page 6, line 24 of his testimony, Mr. Lewis claims that the Oak Tree PPA price is*
19 *\$5.20 higher than the forecast of spot market prices on a levelized basis over 20 years.*
20 *Have you investigated this claim?*

21
22 A. Yes. Mr. Lewis has made an erroneous calculation. First, he simply averages the Black
23 & Veatch hourly forecast of spot market prices for a year and assumes that is the value of
24 energy from Oak Tree. That would be the energy value of Oak Tree (on a \$/MWh basis)
25 if Oak Tree generated flat over the course of a year. However, Oak Tree will not be
26 delivering its energy flat over the course of a year. I have provided an expected hourly
27 pattern for the Oak Tree Energy. I then apply that hourly pattern to hourly spot market
28 prices. Some of the error in Mr. Lewis's calculation comes from the fact that he is not
29 doing hourly analysis and simply assumes the wind plant generates flat over the year.
30 Second, Mr. Lewis is not adding any capacity value in his calculation. Further, Mr.
31 Lewis has not added anything for the value of a REC.

32
33 *Q. Has NorthWestern typically valued the REC when it values a wind plant they would own?*
34

1 A. Yes, NorthWestern has testified that it estimates the 20-year levelized value of a REC to
2 be about \$7.48/MWh. [See, for example, D2011.5.41, Tr. December 15 at p. 54, lines 19-
3 25].

4
5 **VI. MR. WAGNER**
6

7 *Q. Mr. Wagner has testified that the Planning Reserve Margin for NorthWestern in South*
8 *Dakota is now determined by WAPA and hence NorthWestern no longer needs to carry a*
9 *15% Planning Reserve Margin because WAPA only requires NorthWestern to carry a*
10 *7.1% Planning Reserve Margin. Do you have comment?*

11 A. Yes. Through a FOIA request I asked WAPA for (1) a copy of any MISO study that
12 showed a need for a 7.1% Reserve Margin and (2) a copy of a document that indicates
13 how WAPA intends to use the results of the study. I was provided a copy of a study from
14 MISO. However, WAPA stated that there was no document that indicated what WAPA
15 does with the MISO study findings.

16 *Q. Did you ask WAPA if they set a Planning Reserve Margin requirement on their*
17 *customers like NorthWestern Energy in South Dakota?*

18 A. Yes. I was told that WAPA does not set a Planning Reserve Requirement on
19 NorthWestern in South Dakota. I further asked WAPA what would keep a utility from
20 deciding not to build new resources and instead just rely on the system to get power when
21 they need it. I was told that if a utility was short on supply and WAPA could arrange for
22 needed supply for that company, then WAPA would purchase the power and pass the bill
23 along to the utility. WAPA indicates that the threat of very high prices should incentivize
24 a utility to build adequate supply. Further, WAPA stated that if it could not obtain
25 sufficient power in the market and the WAPA area ends up needing to curtail power,
26 WAPA's public power customers would be quite upset if their loads were curtailed
27 because an investor owned utility like NorthWestern Energy had not provided sufficient
28 supply.

29 *Q. What do you perceive is the risk to NorthWestern in meeting its peak load if*
30 *NorthWestern does not provide a Planning Reserve Margin greater than 7.1%?*

1 A. The biggest risk would be if the Big Stone coal plant was off line during a peak load
2 situation. If this were to happen, NorthWestern would lose 106 MW of capacity.
3 NorthWestern would be at risk if it did not have sufficient reserves to cover the loss of
4 this much power. NorthWestern may be exposed to very high replacement power costs
5 or, even worse, be required to curtail customer loads. This would have substantial
6 economic costs to NorthWestern's ratepayers and could result in significant customer
7 impacts.

8 *Q. Is it normal for a utility to consult with its regulator on these matters before making a*
9 *decision on the level of Planning Reserves it should carry?*

10 A. That is the normal practice if a utility is not a part of a Reserve Sharing Agreement.
11 According to Mr. Wagner, NorthWestern is no longer a party to a Reserve Sharing
12 Agreement.

13 *Q. Mr. Wagner testifies that because NorthWestern has decided to build the Aberdeen Gas*
14 *Turbine plant it does not need capacity on the year that Oak Tree would come on line.*
15 *Please comment.*

16 A. It is my understanding that NorthWestern did not release a construction contract for the
17 Aberdeen plant until after February 25, 2011, so, technically, Oak Tree would have been
18 able to avoid part of the Aberdeen capacity. However, I believe that the SDPUC should
19 have concerns about the Aberdeen plant that go beyond this technicality.

20 *Q. Please describe your concerns.*

21 A. NorthWestern data indicates it will be short on capacity in 2013 even assuming the 50
22 MW Aberdeen gas turbine is then on line. However, because Mr. Wagner now proposes
23 to reduce the Planning Reserve Margin Requirement from 15% to 7.1%, then it appears
24 that NorthWestern will not be short in 2013 if the Aberdeen gas turbine is added. Clearly
25 the capacity provided by Oak Tree would be needed in 2013 if the Planning Reserve
26 Margin remains at 15%. I believe the SDPUC should be concerned about the unilateral
27 decision of NorthWestern to drop its Planning Reserve Margin to 7.1%. This places cost
28 and reliability risks on NorthWestern ratepayers.

29 *Q. Do you have other concerns?*

1 A. Yes. It is not clear why NorthWestern chose to build the Aberdeen plant. As Mr.
2 Wagner testified, NorthWestern chose to build the Aberdeen plant rather than negotiating
3 an extension of the Mid American Peak Purchase Agreement. Clearly the cost of peaking
4 from the existing Mid American Peak Purchase Agreement is considerably lower than the
5 fixed cost of the Aberdeen plant. It would seem that a more cost effective Resource Plan
6 would be to rely on 3 MW of peak capacity from the Oak Tree wind farm and to
7 purchase the balance of NorthWestern's peak capacity needs from MidAmerican.

8 *Q. What is the reason that Mr. Wagner gave for not purchasing capacity from*
9 *MidAmerican.*

10 A. Mr. Wagner claims that it was difficult to get transmission capacity.

11 *Q. Did you check into Mr. Wagner's claim that it was difficult to get transmission capacity?*

12 A. Yes, we asked questions about this claim and the answers provided were not sufficient
13 for one to conclude that needed transmission capacity could not have been procured. To
14 our knowledge, no entity has refused to provide the transmission that NorthWestern
15 needed to make purchases of peaking capacity from MidAmerican.

16 *Q. Mr. Wagner also indicated that the Aberdeen plant needed to be located in that area*
17 *because there was a reliability problem with that area. Did you check into that claim?*

18 A. Yes. We asked to see a transmission study that showed the Transmission area could not
19 meet NERC/FERC reliability criteria without the Aberdeen plant. We were told that no
20 such study exists.

21 *Q. Does the lack of such a study trouble you?*

22 A. Yes, because it is not normal to decide to spend ratepayer money to improve reliability to
23 levels that exceed the reliability criteria established by NERC/FERC. Prudent Utility
24 Practice would generally use NERC/FERC reliability criteria, or if more stringent
25 reliability criteria are proposed by the utility, generally they would seek approval from
26 their regulatory commission prior to deciding to use such more stringent reliability
27 criteria. There is no evidence that NorthWestern has discussed this matter with the
28 SDPUC.

1 **VII. MR. LaFAVE**
2

3 *Q. What do you have to say regarding the testimony of Mr. LaFave?*

4 A. Mr. LaFave relies on the forecast provided by Mr. Lewis. I have rebutted that testimony
5 and that rebuttal would apply to Mr. LaFave's testimony on avoided costs. In addition, I
6 have pointed out the inconsistencies between NorthWestern's testimony about wind in
7 the Montana proceeding regarding the Spion Kop wind project and its testimony in this
8 proceeding regarding the benefits, costs, and risks posed by acquiring wind resources.
9 That testimony would be further rebuttal to what Mr. LaFave has testified about in this
10 Oak Tree proceeding.

11 *Q. Mr. LaFave provides a list of formal communications that occurred between Oak Tree*
12 *and NorthWestern energy. He indicates that somehow this list of formal communications*
13 *demonstrates that Oak Tree has not created an LEO. Do you agree?*

14 A. No. A review of the communications demonstrates that NorthWestern was unwilling to
15 enter into a contract based on its Long Term Avoided Cost. FERC has anticipated that
16 utilities may refuse to do so, which is precisely why FERC set up the LEO process. That
17 is why we are in this hearing.

18 *Q. What was there in the communications that indicated that NorthWestern was unwilling to*
19 *enter into a contract based on its Long Term Avoided Cost?*

20 A. It is clear from these communications that NorthWestern was not willing to accept a price
21 of \$54.40/MWh because, in their opinion, this was above their Avoided Cost. The
22 avoided cost they were quoting was approximately \$20/MWh and this was a short-term
23 Avoided Cost, not a long-term Avoided Cost forecast.

24 *Q. Was Mr. LaFave aware that a wind plant could not be developed at an avoided cost of*
25 *\$20/MWh?*

26 A. Yes. Mr. LaFave was involved in the NorthWestern process that resulted in
27 NorthWestern seeking approval for the Spion Kop wind project in Montana.
28 NorthWestern claimed that the Spion Kop project at \$53.15/MWh was the lowest cost
29 wind resource in Montana that was available to NorthWestern [NorthWestern Initial

1 Brief in Docket D2011.5.41 at page 14]. Clearly Mr. LaFave knew that a PPA price of
2 \$20/MWh would not allow the Oak Tree project to be built.

3 *Q. Was the \$20/MWh a long term avoided cost?*

4 A. No. NorthWestern has taken the position in this proceeding “that long term estimates of
5 avoided costs are unreliable, and as of the date of this letter, NorthWestern has not
6 completed a 20 year avoided cost analysis. “ [February 1, 2012 letter from Sara Dannen
7 Corporate Counsel for NorthWestern Energy to Yvette Lafrentz and Michael J. Uda
8 (attached hereto as “Exhibit 4”].

9 *Q. Under the PURPA and FERC rules implementing PURPA, is it acceptable for a utility to*
10 *simply refuse to enter into a long term PPA by refusing to develop a 20-year avoided cost*
11 *analysis?*

12 A. No. FERC had concerns that utilities might do something like this, which is why FERC
13 developed the LEO concept.

14 *Q. Would it have made sense for Oak Tree to continue sending offers to NorthWestern*
15 *rather than sending its LEO letter on Feb 25, 2011?*

16 A. No. By its communications, NorthWestern had clearly sent the signal that it would not
17 be agreeing to any PPA with Oak Tree that would allow the Oak Tree project to proceed.

18 *Q. Was it important to get a PPA in place soon enough that the project could be “on-line”*
19 *by the end of 2012 in order to qualify for federal Production Tax Credits?*

20 A. Yes. That was very important to Oak Tree. Oak Tree could only develop its project at its
21 proposed price if Oak Tree was able to get the Production Tax Credits.

22 *Q. Was NorthWestern aware that Oak Tree needed to have its project on line in order to get*
23 *the Production Tax Credits?*

24 A. Yes. NorthWestern had already been discussing the importance of getting its Spion Kop
25 wind project on line by the end of 2012 in order to get the federal Production Tax Credits.
26 NorthWestern’s \$53.15/MWh estimate of the cost of Spion Kop assumed that
27 NorthWestern would get the federal Production Tax Credits. Without the Production Tax
28 Credits the estimated cost of Spion Kop would have been at least \$14/MWh higher.

1 Q. *Would NorthWestern have known that Oak Tree would need to have a price at least*
2 *\$14/MWh higher than its proposed price if Oak Tree could not be on line by the end of*
3 *2012?*

4 A. Yes. It appears it may have been a NorthWestern strategy to delay Oak Tree so they
5 could not get their project on by the end of 2012 in order to make the Oak Tree project
6 look less attractive.

7 Q. *Given these matters, should NorthWestern have been surprised that Oak Tree proceeded*
8 *to file its LEO letter on Feb 25,2011 and when NWE continued to refuse to negotiate,*
9 *should NorthWestern have been surprised that Oak Tree filed a complaint with the PUC?*

10 A. No.

11 **VIII. MR. GREEN**
12

13 Q. *What do you have to say regarding the testimony of Mr. Green?*

14 A. Mr. Green appears to want to criticize my testimony where I say that NorthWestern buys
15 power in heavy load hours and sells power in light load hours. I am not sure why he
16 wishes to do so because that is obviously what NorthWestern is doing. I have shown an
17 example of actual days (a heavy load day and a light load day) when NorthWestern
18 actually does this. Mr. Green appears to argue that since I did not graphically depict
19 every day that NorthWestern has been doing this over the past three years that my point is
20 invalid. Mr. Green says that NorthWestern only buys spot market power when its load
21 exceeds the production of its base load generation and the output of the wind.
22 Mathematically it is exceedingly unlikely that the load on any single hour will precisely
23 match the output of NorthWestern's base load resource and its wind. The vast majority
24 of the time the load will either exceed this level or be less than this amount. When the
25 load is less, NorthWestern sells into the market. When the load is more, NorthWestern
26 buys from the market.

27 Q. *Mr. Green appears to take the position that if NorthWestern is long on an hour and sells*
28 *into the market on that hour, that a new QF that also generates on that hour is not*
29 *entitled to the price that NorthWestern will get for selling power on that hour. Do you*
30 *agree with this statement?*

1 A. No. First of all, customers are indifferent if new QF power is paid the price that
2 NorthWestern will also get from wholesale sales of the power. The payment to the QF is
3 offset by the revenues received.

4 *Q. Did NorthWestern devalue its Spion Kop power for those hours when the power would be*
5 *sold in spot markets?*

6 A. No. NorthWestern analysis assumed its Spion Kop power would be worth spot market
7 prices when it was surplus to NorthWestern needs as evidenced by the GenTrader
8 modeling approach they used in their Default Supply Plan (aka Resource Procurement
9 Plan [RPP]) that can be found on the NorthWestern web site. There was nothing I saw in
10 the Spion Kop proceeding that included the type of analysis that Mr. Green provides in
11 this proceeding.

12 **IX. MS. BONRUD**
13

14 *Q. What do you have to say regarding the testimony of Ms. Bonrud?*

15 A. Ms. Bonrud points out that the Renewable Energy Objective (REO) is not mandatory in
16 South Dakota. She does not address whether NorthWestern and the SDPUC as a policy
17 matter should try to meet the REO.

18 *Q. Does Ms. Bonrud state that NorthWestern should not acquire wind power if the*
19 *acquisition would make sense for customers?*

20 A. No, Ms. Bonrud does not appear to be suggesting that. However, it appears she is overly
21 influenced by testimony of Steve Lewis and others in this proceeding.

22 *Q. Is the RPS goal in Montana a mandatory requirement?*

23 A. No. However, in Montana, NorthWestern would like to meet the goal, albeit by owning
24 the wind resources rather than purchasing output of wind under a PPA.

25 *Q. Has NorthWestern stated that the wind is more expensive than spot market power in*
26 *Montana?*

1 A. No, in the Spion Kop proceeding, NorthWestern has developed a much higher estimate of
2 the cost of spot market power. Earlier in this testimony I point out the problems with
3 such conflicting testimony.

4 **X. OTHER OBSERVATIONS ON NORTHWESTERN TESTIMONY ON AVOIDED**
5 **COSTS**

6
7 *Q. NorthWestern had taken great pains to state that a forecast of spot market power is not a*
8 *forecast of avoided cost. Do you agree?*

9
10 A. Yes. An avoided cost forecast could start with a forecast of spot market power, but then
11 the energy value of the QF should be adjusted to reflect the hourly shape of the wind
12 farm. Then a capacity element should be added. Finally, the value of the REC should be
13 added. As I point out in this testimony, NorthWestern is not only under-forecasting the
14 cost of gas and spot market electricity prices, but it is not making the other needed
15 adjustments to convert the forecast of spot market energy into an avoided cost forecast
16 for a QF.

17
18 *Q. Is there somewhere else the SDPUC could look to see what an appropriate avoided cost*
19 *for a wind plant might be as of the year 2011?*

20
21 A. Yes. The Montana PSC conducted several hearings on this matter and concluded that the
22 avoided cost for a wind plant as of August 2011 would be \$57.87/MWh if the wind plant
23 retained the REC. While I believe that this price would have been higher if it would have
24 been done before Feb 25, 2011, I think that would be a fair outcome in this case. Then
25 the SDPUC could use NorthWestern's estimate of \$7.48/MWh as the levelized value of
26 the REC. Those two numbers would create an avoided cost consistent with the price
27 provided in the Oak Tree February 25, 2011 LEO/PPA.

28
29 **XI. COMMENTS ON TESTIMONY OF MR. BRIAN ROUNDS**

30
31 *Q. What comments do you have on the testimony of Mr. Rounds?*

32 A. Mr. Rounds testifies that a brand new avoided cost forecast should be prepared on the day
33 of the LEO letter. While that might theoretically be desirable, it is generally understood
34 in the industry that such an approach would not be practical. In the industry, it is

1 common to determine an avoided cost at some point in time and then allow QFs to
2 receive that avoided cost until a new avoided cost is determined. For example, the MPSC
3 set a new avoided cost rate on October 19, 2011 in its Order No. 7108e in Docket No.
4 D2010.7.77. That avoided cost rate is available to QFs in Montana today. In the case of
5 Oak Tree, I was asked to prepare an estimate of NorthWestern's avoided cost in South
6 Dakota some period of time prior to Feb 25, 2011. In doing so, I used the most recent
7 forecast of power prices that I had at that time. That was the Fall 2010 Black & Veatch
8 Energy Market Perspective. It is a very complex and time consuming process to update
9 these kinds of forecasts. Updating natural gas price forecasts means looking at every
10 input assumption we use in the GPCM fundamentals based gas price forecasting model.
11 Then it is necessary to examine the other assumptions that are used in the PROMOD spot
12 market electricity pricing forecasting model. The forecast that was available to me to
13 estimate NorthWestern's avoided cost in South Dakota was based on our most recent
14 evaluation of these matters. It is common in the industry to do this. Further, the forecast
15 that was available to me was not prepared solely for this contract/proceeding; therefore, it
16 was clearly not biased to support Oak Tree's particular need.

17 *Q. In your view, would it be appropriate for the SDPUC to accept your forecast for*
18 *purposes of determining avoided cost relevant to the Oak Tree project's Feb 25, 2011*
19 *LEO letter?*

20 *A. Yes. By accepting that forecast, the SDPUC would be recognizing what other PUCs*
21 *recognize, namely that it is not possible to create new forecasts of avoided costs every*
22 *day and to re-do forecasts on one day's notice.*

23 *Q. Did the Oak Tree LEO/PPA pricing equal your forecast of avoided cost?*

24 *A. No, the Oak Tree LEO/PPA provided for a price below the avoided cost I had calculated*
25 *that would be appropriate for them. They offered to accept the lower price because they*
26 *felt they could develop the project at that lower price.*

27 *Q. Do you have comment on the testimony regarding the capacity component of avoided*
28 *cost?*

29 *A. Yes. Regarding the testimony on the capacity component of the avoided cost, I would*
30 *refer back to my rebuttal of Mr. Wagner's testimony.*

1 Q. *Do you have comments on the testimony regarding Oak Tree's Gas pricing Model and*
2 *Lands Energy's Model?*

3 A. Yes. I refer back to my testimony regarding the approach (which is not really a model)
4 used by Mr. Lewis and how it differs from models used by organizations that specialize
5 in analysis of fuel commodity markets. I further point out that the GPCM model used by
6 Black & Veatch is widely used by organizations that specialize in analysis of fuel
7 commodity markets.

8 Q. *Do you have comments on the testimony regarding CO2 emissions pricing?*

9 A. Yes. I agree with Mr. Rounds that forecasting the price of CO2 is very difficult.
10 However, as NorthWestern has pointed out in its testimony in Montana in the Spion Kop
11 proceeding, it would be prudent for a regulator to factor in a risk of EPA regulating
12 greenhouse gases when considering whether acquisition of wind resource is appropriate
13 or not. NorthWestern did include that in its analysis of the cost effectiveness of the Spion
14 Kop project in Montana. It inappropriately chose not to do so here.

15 Q. *Does that conclude your rebuttal testimony?*

16 A. Yes.