

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*

EL11-006

---

Testimony of

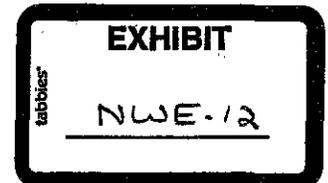
**Steven E. Lewis**

On behalf of NorthWestern Energy

---

Submitted: November 21, 2012

Hearing Date: December 5, 2012



## Table of Contents

---

Introduction and Qualifications .....	1
Purpose of Testimony .....	1

### Exhibits

Ventura-Henry Hub Price Difference .....	Exhibit SEL-01
Big Stone-Illinois Price Difference .....	Exhibit SEL-02
Northern Illinois Forward Prices .....	Exhibit SEL-03
Escalation Rates .....	Exhibit SEL-04
Forecast Summary .....	Exhibit SEL-05
Comparison to Current Prices .....	Exhibit SEL-06

1 **Testimony**

2 **Introduction and Qualifications**

3 **Q: Please state your name and business address.**

4 A: My name is Steven E. Lewis. I am a principal and employee of Lands Energy Consulting. My  
5 business address is 2719 California Avenue SW Suite 5, Seattle, Washington 98116.

6 **Q. Are you the same Steven E. Lewis who has previously provided testimony in this proceeding?**

7 A. Yes, I am. My resume was attached to my prefiled direct testimony dated January 12, 2012.

8 **Purpose of Testimony**

9 **Q What is the purpose of your testimony?**

10 A. To provide details and an explanation of the electricity price forecasts provided to  
11 NorthWestern Energy for use in their retroactive avoided cost calculation for February 2011.

12 **Q Is the forecast methodology similar to the methodology used for price forecast previously**  
13 **submitted by you as part of this Docket?**

14 A. Yes, but certain changes have been made to improve the forecast. These changes include  
15 incorporating the Ventura natural gas delivery point into the analysis, incorporating the Big  
16 Otter and Northern Illinois points of delivery on the electrical system rather than the Minnesota  
17 Hub and Cinergy/Indiana and the use of a higher long-term escalation rate based on the 2011  
18 Early Release Annual Energy Outlook ("AEO") projections provided by the Energy Information  
19 Administration ("EIA"). The forecast was prepared using information and market data that was  
20 available in February 2011.

21 **Q Please briefly summarize the methodology.**

22 A. The methodology uses known and transparent market hubs to determine the electricity prices  
23 expected at any given time in the marketplace. In forecasting electricity prices for South  
24 Dakota, it is desirable to prepare the forecast specially keyed on delivery points in or near to  
25 South Dakota or that have a direct relationship to the energy supplies used by NorthWestern  
26 Energy in South Dakota. In this case, we focused on the Ventura points of delivery for natural  
27 gas and the Big Stone point of delivery of electricity. The historical relationship between  
28 Northern Illinois and Big Stone was used for electricity prices and the relationship between  
29 Henry Hub and Ventura was used for natural gas so that the forward trading prices for Northern  
30 Illinois and Henry Hub could be used to prepare a locally adjusted forward price curve. The

1 forward electricity price could be obtained from publicly available publications in February 2011  
2 through December 2015 and a natural gas price projections through December 2020. The  
3 electricity price is extended through December 2020 using the relationship between electricity  
4 prices and natural gas prices for the period March 2011 through December 2015 and then using  
5 that relationship to compute the electricity prices for the period January 2016 through  
6 December 2020. The electricity and natural gas prices were projected beyond 2020 using the  
7 long term escalation rate derived from the EIA's 2011 Early Release EAO that was available in  
8 February 2011.

9 **Q Please elaborate on how the prices were adjusted for the local points of delivery.**

10 A. The local natural gas price was determined by using the historical relationship between Ventura  
11 prices and Henry Hub prices for daily market transactions. The historical daily prices can be  
12 obtained from the Intercontinental Exchange's website ([www.theice.com](http://www.theice.com)). In this case, the  
13 Ventura prices are available for the period September 2008 through January 2011. The  
14 Intercontinental Exchange publishes three daily prices for Ventura, a generic Ventura price, the  
15 NBPL-Ventura price, and the NNG-Ventura price. The three delivery points have prices nearly  
16 identically to one another with a long-term difference between Ventura and NBPL-Ventura of  
17 less than a cent and a long-term difference between NNG-Ventura and NBPL-Ventura of 1.3  
18 cents. Based on discussions with NorthWestern Energy, the three Ventura points were  
19 combined by taking the lesser of the prices on a daily basis and then subtracting 2 cents/mmbtu  
20 to approximate the lower cost to receive gas at the delivery points NorthWestern uses on the  
21 pipeline. This combined Ventura price follows a consistent pattern relative to Henry Hub being  
22 a little higher in the December and January and either even or a little lower the rest of the year.  
23 The monthly difference and a chart are enclosed in SEL-01.

24 The relationship between Big Stone and Illinois pricing was determined by analyzing the  
25 locational marginal prices posted by the Midwest ISO for those points of delivery. Data was  
26 available from the Midwest ISO website for the period January 2009 – September 2010. The  
27 price differential in this case did not have a discernable annual pattern and deviations from the  
28 normal pricing seemed somewhat random, so the simple average of a negative \$4.46/MWh  
29 price differential was applied to the forward Northern Illinois price to compute a comparable Big  
30 Stone forward price. The results of this analysis is enclosed in a table in SEL-02.

31 **Q What was the source of the forward prices?**

32 A. The source for the electricity forward prices was the Northern Illinois price point as reported in  
33 the Argus US Electricity newsletter published on February 25, 2011. The source for the natural  
34 gas forward prices was the Intercontinental Exchange

35 **Q Aren't the energy prices pretty volatile and couldn't the forward prices obtained for February**  
36 **25<sup>th</sup> be significantly different than prices that would have been obtained only a few days**  
37 **earlier or a few days later?**

1 A. The energy markets are pretty volatile. A review of the Argus publications before and after  
2 February 25 reveals only relatively modest changes in forward prices, with a bit of a drop in the  
3 prices occurring after the forecast date of February 25<sup>th</sup>. A comparison of forward prices for the  
4 Northern Illinois delivery point as reported by Argus are included in the tables and charts in  
5 Exhibit SEL-03.

6 **Q Please describe how you computed the long-term escalations rate used in the price forecast?**

7 A. In response to concerns raised by the Commission regarding the escalation rates used in our  
8 prior forecasts, the EIA projection was used for the long-term escalation rate in this forecast.  
9 The EIA forecast provided in the 2011 AEO Early Release, which was published in January 2011  
10 was used to compute a long-term nominal escalation rate for wholesale energy prices using  
11 their projected escalation in natural gas prices. This long-term escalation rate is 3.9%. The  
12 calculation of the escalation rate is included in Exhibit SEL-04.

13 The data from the EIA was also used to determine an effective conversion rate between real and  
14 nominal dollars. This conversion factor was used by NorthWestern Energy in their coal price  
15 forecast and is also included in Exhibit SEL-04.

16 **Q What are the results of this forecast?**

17 A. This forecast results in a long term levelized price forecast of \$46.30/MWh. This is  
18 approximately \$4.5/MWh higher than the previous February 2011 no-carbon forecast that I  
19 provided in my May 2012 testimony. The main causes for this difference are the higher long-  
20 term escalation rates applied in this forecast and the method of setting the forward price in the  
21 near term using Big Stone and Illinois delivery points resulted in a slightly higher price than the  
22 prior method of using the Minnesota Hub and the Cinergy. The results of this forecast process  
23 are summarized in Exhibit SEL-05.

24 **Q. What carbon emission price forecast were used in the forecast?**

25 A. Pursuant to Commission direction, we did not use any carbon emissions cost adders in the  
26 forecast.

27 **Q. The avoided cost is to be based on data and information available in February 2011. Was all  
28 information used in the preparation of the forecast appropriate for a February 2011 forecast?**

29 A. Yes. Care was taken to use data sets and information that was available and appropriate for use  
30 in February 2011.

31 **Q. While the Avioded Cost and the price forecast must be based on information available in  
32 February 2011, what have the electricity markets done in the nearly 2 years since that time?**

1 A. Current forward prices have continued to remain weak and the current reported prices for  
2 Northern Illinois are lower than the prices used from the February 2011 publication. The  
3 current 3 year average price difference is \$3.93/MWh lower for on-peak (2013-2015) and  
4 \$2.25/MWh lower or off-peak. A table and chart of this price comparison are included in  
5 Exhibit SEL-06.

6 **Q. NorthWestern used an escalation rate for the construction cost of a natural gas plant. Did you**  
7 **provide that escalation rate to them?**

8 A. Yes. The escalation rate was computed using the Handy-Whitman Index for the construction  
9 costs of natural gas turbogenerators in the North Central Region, which is published by  
10 Whitman, Requart and Associates. Their index is widely used in the industry to quantify the  
11 escalation of specific utility capital cost items. The escalation in the index for January 2001  
12 through January 2011 is 5.84%

13 **Q. Does that conclude your testimony?**

14 A. Yes, it does.

