BEFORE THE PUBLIC UTILTIES 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

Responsive Testimony of

Steven E. Lewis

On behalf of NorthWestern Energy

Submitted: November 28, 2012

Hearing Date: December 5, 2012

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Exhibits

Testimony

Introduction

Q: Please state your name and business address.

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

Q: Are you the same Steven E. Lewis that has previously filed testimony in this docket?

A: Yes.

Purpose of Testimony

Q: What is the purpose of your testimony?

A: My testimony is in response to Mr. Lauckhart's Additional Testimony on behalf of Oak Tree and Mr. Rounds's Testimony, both of which were filed on November 21, 2012.

Q: Please summarize your testimony.

A: This response is offered to clarify certain claims and offer additional information related to the electricity market price forecasts provided by Mr. Lauckhart and Mr. Rounds.

Mr. Lauckhart's Additional Testimony

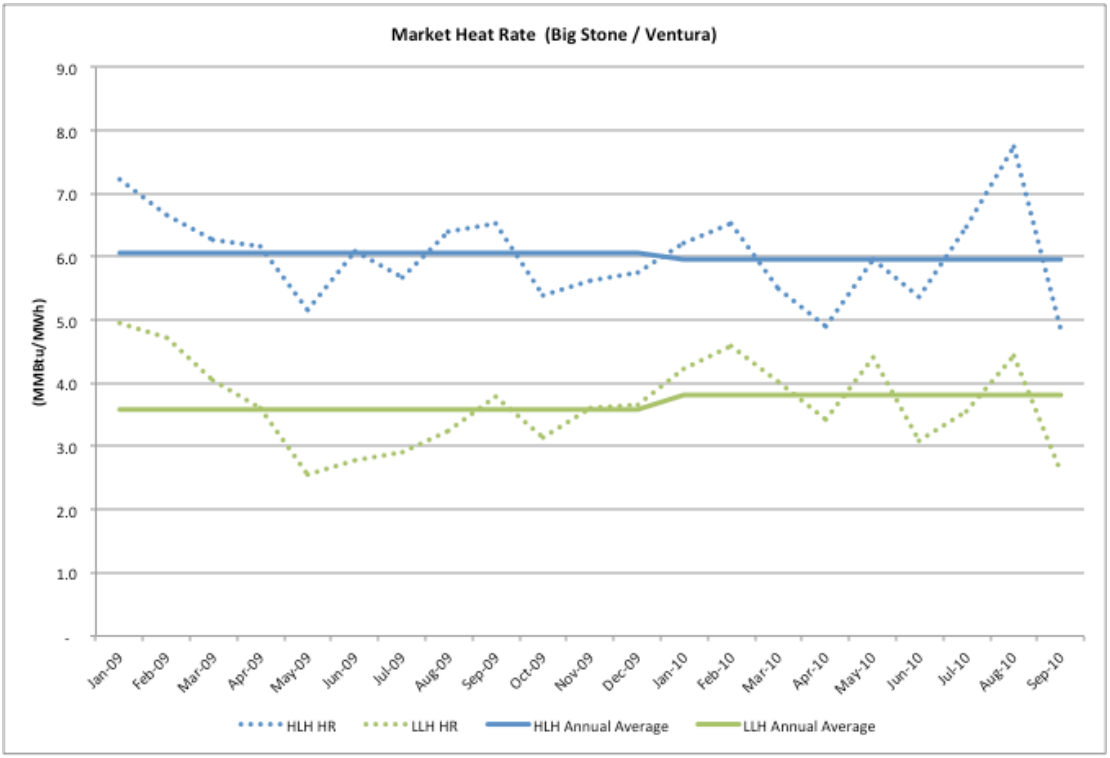
Q: Did Mr. Lauckhart's forecast use your approach as claimed by Mr. Lauckhart? (*See* Lauckhart Testimony 8:32-9:1.)

A: No. My approach utilizes the latest forward market information to develop a projection for the near term and blend that with long-term expectations on wholesale price increases over time. Mr. Lauckhart's forecast, uess the market heat rate I computed for the relationship between AECO natural gas and the Minnesota Hub but applied it to a fundamentals-based EIA natural gas forecast starting in January 2013 and ignored the available forward market information in favor of forecast data that was already out of date. In effect, Mr. Lauckhart is replacing the out-of-date Black & Veatch fundamentals forecast with the similarly out-of-date EIA fundamentals forecast veiled with a market heatrate calculation that might not be appropriate given the possibility that the build up to the delivery points for the EIA natural gas markets is likely not equivalent to the method I originally used for the AECO price with a delivery charge.

Q: Do you agree with Mr. Lauckhart that your "market heat rate" is very low for the 20-year forecast? (*See* Lauckhart Testimony 8:27-32.)

A: No. The market heat rate used in the forecast reflects the relationship between the electricity and natural gas markets at the time the forecast was prepared, or as of February 2011 in this case. The relationship between these market prices does not reflect any specific units in the region, but reflects the combined thinking of the marketplace regarding which units will be necessary to meet regional loads for certain time periods in the future. It is reasonable to expect that as new natural gas units are added to the regional portfolio of generators that their improved efficiencies and lower heat rates will put downward pressure on the market heat rate.

The market heat rate Mr. Lauckhart claims as too low is 8.36 MMBtu/MWh for Heavy Load and 5.17 MMBtu/MWh for Light Load. Using the data recently assembled for Big Stone electricity prices and Ventura natural gas prices, the observed daily market heatrate for January 2009 through September 2010 was about 6.0 MMBtu/MWh for Heavy Load and 3.7 MMBtu/MWh for Light Load. The chart below (included in Excel format in Exhibit SEL-1) shows the monthly values overlayed with the annual average heatrates. These values were calculated by simply dividing the month average day-ahead electricty prices for Big Stone as reported by the Midwest ISO by the month average day-ahead natural gas prices for Ventura as reported by The Intercontinental Exchange. Based on this review, it would seem that the heat rate values Mr. Lauckhart extracted from my earlier files are on the high side.



Q: Do you believe that the EIA 2011 Early Release is not adequate to provide guidance for the forecast? (*See* Lauckhart Testimony 10:15-13:2.)

No, the EIA 2011 Early Release is appropriately used in preparing the market price forecast. The EIA recongnized the significant shift occurring the energy markets at that time and the natural gas projections they included in their 2011 Early Release Reference Case factored in the most recent understanding of recoverable shale gas . In fact, the first two key updates cited by the EIA in their AEO 2011 Early Release Overview are[1]:

- Significant update of the technically recoverable U.S. shale gas resources, more than doubling the volume of shale gas resources assumed in AEO2010, and also added new shale oil resources.
- Revision of the methodology for determining natural gas prices to better reflect a lessening of the influence of oil prices on natural gas prices, in part because of the increase in shale gas supply and improvements in natural gas extraction technologies.

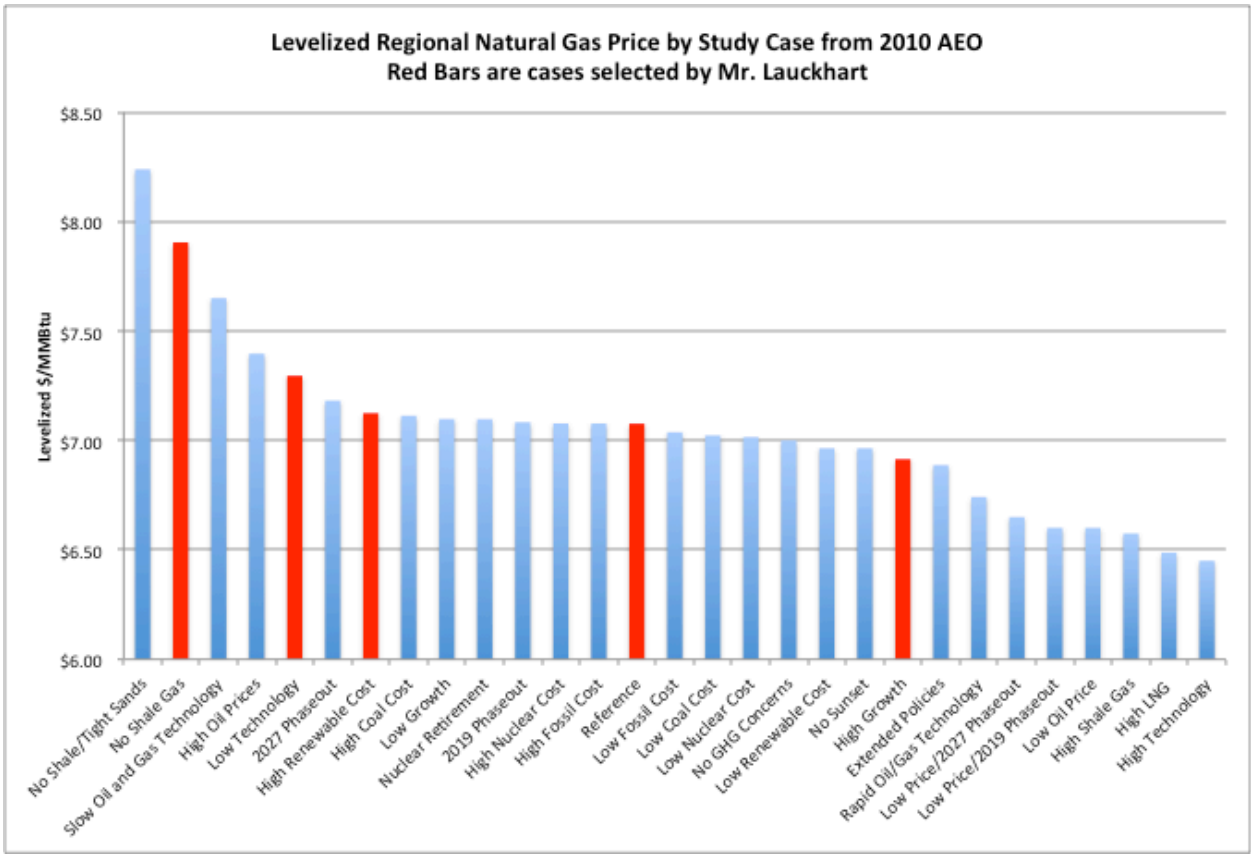
Additionally, the EIA forecast is only utilized in my methodology to forecast the energy price escalation for years 2021 and beyond. The first four years (2012-2015) are based on actual forward market prices for both natural gas and electricity. The next five years (2016-2020) are based on actual forward natural gas markets and the observed heat rates for the 2012-2015 markets. The remaining years utilize the EIA escalation rate applied to the market prices for 2020. The market prices are used because they reflect the latest information available at the time the forecast would have been prepared. This is in part due to the fact that the EIA must spend time to prepare and publish their forecasts and they are necessarily out of date due to the time lag that occurs in performing analysis and preparing their publication materials. In fact, the Henry Hub natural gas market prices obtained as of February 2011 and used for my forecast were higher than the natural gas price projections contained in the EIA AEO 2011 Early Release.

Q: Have you reviewed the five 2010 AEO cases selected by Mr. Lauckhart and are they representative of the full range of results provided by the EIA in this outlook? (*See* Lauckhart Testimony 11:20-23.)

A: I have reviewed the thirty West North Central natural gas forecasts from the AEO 2010. Of the thirty, one is an updated 2009 forecast so is not relevant, but of the remaining 29, Mr. Lauckhart chose cases that skew the natural gas prices higher relative to the full set. The chart below (included in Excel format in SEL-2) shows the levelized nominal natural gas forecast for the West North Central Region . The prices range between $6.45/MMBtu and $8.24/MMtu. Mr. Lauckhart used the "Reference Case", "High Growth", "Low Technology", "High Renewable Cost" and "No Shale Gas" cases. These cases selected by Mr. Lauckhart are shown in red. Mr. Lauckhart chose three of the seven most expensive cases, while choosing none of the seven

[1] The Overview can be accesses online at: http://www.eia.gov/forecasts/archive/aeo11/er/pdf/0383er(2011).pdf

least expensive. These five selected out-of-date cases represent half of the ten cases Mr. Lauckhart proposes to use for computing the avoided cost.

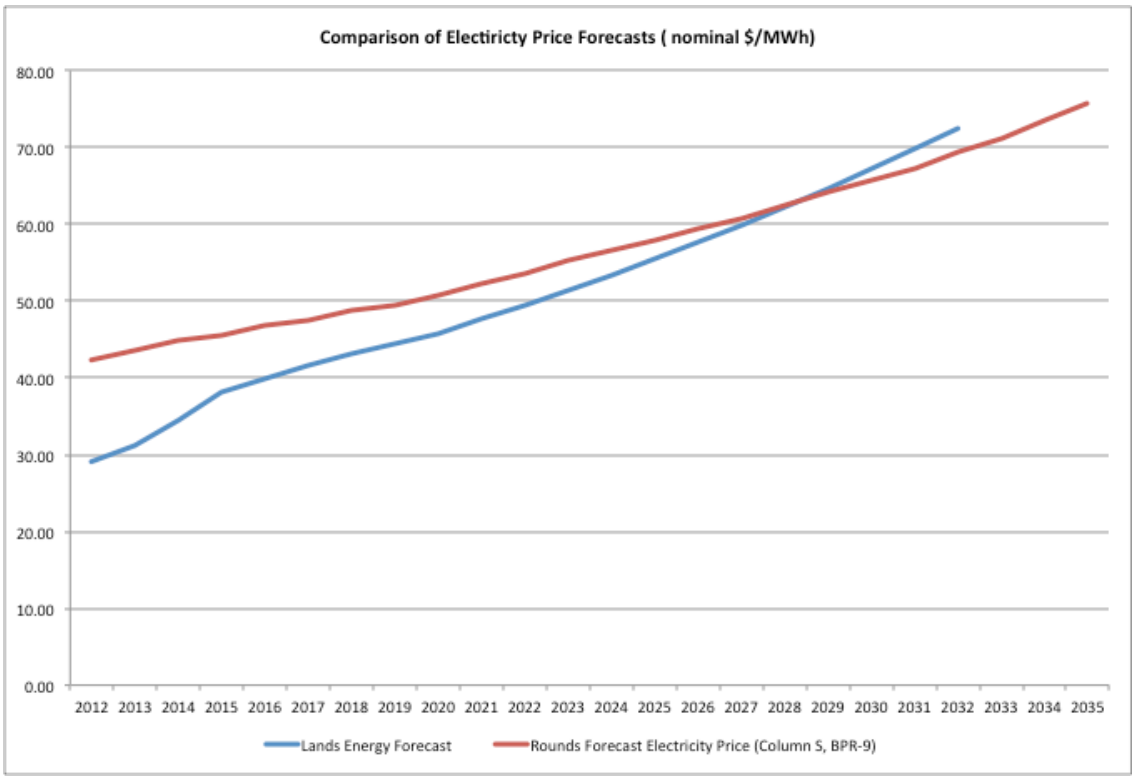


Mr. Rounds's Testimony

Q: Are NorthWestern's costs accurately reflected in the use of the EIA's Annual Energy Outlook (AEO) 2011 Early Release Reference Case and the Eastern Interstate Planning Collaborative (EIPC) as an electricity market price reference for this model? (*See* Rounds Testimony 2:6-17.)

A: Using the AEO 2011 Early Relase forecast for the escalation of a future pricing curve for years that are not available in existing markets (electric or natural gas) is appropriate, but the EIA forecasts do not represent the best prices available in the market as of Febrary 2011. Mr Rounds's use of the EIA generation component of the electricity cost build up as a substitute for the electricity market is troublesome (*See* BPR-11 from Mr. Rounds's Avoided Cost Calculation workbook, row 84). This value is the cost of all generation as seen by electricity rate payers. As such, it has all resource types and includes fixed cost components for regulated regions or reliability adders for regions with RTOs or ISOs. This cost build up represents a price that is not relevant when determining the marginal cost units that will determine prevailing market prices. If the prices in BPR-11 rows 84 through 86 are summed, they are equal to the all-sector average electricity price reported in row 76 as expected. The use of this market projection, although

reduced by Mr. Rounds to account for the regional difference in cost from the national average, still produces electrity market prices that are more than $10/MWh higher than market prices for 2012-2014. A comparison of my forecast with Mr. Rounds's is contained in the chart below (included in Excel format in Exhibit SEL-3), which shows the differences in the intial years of the forecast – although, interestingly enough my forecast catches up in 2029.



Q: Does this conclude your testimony?

A: Yes, it does.

Affidavit of Steven E. Lewis

STATE OF WASHINGTON)
: ss
COUNTY OF KING)

Steven E. Lewis, being first duly sworn upon oath, states and alleges as follows:

1) I am a principal and employee of Lands Energy Consulting.

2) I have read this document and am familiar with its contents, and the same are true to the best of my knowledge and belief.

Further affiant sayeth naught.

Dated at Seattle, Washington, this 28th day of November, 2012.

Steven E. Lewis

SIGNED AND SWORN to before me this 28 day of November, 2012, by Steven E. Lewis.

LEE M. TILLMAN
NOTARY PUBLIC
STATE OF WASHINGTON
COMMISSION EXPIRES
APRIL 9, 2015

Notary Public, Washington
My appointment expires: 4/9/2015