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BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF Complaint filed by Oak Tree Energy LLC against NorthWestern Corporation d/b/a NorthWestern Energy Regarding the Oak Tree Energy, LLC Wind Project	DOCKET NO. EL11-006 OAK TREE ENERGY, LLC'S DIRECT TESTIMONY OF J. RICHARD LAUCKHART

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

I. INTRODUCTION

Q. Please state your name and employment.

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

Q. Please describe your professional qualifications and experience.

A. I have been involved in the electric utility industry for over 40 years. My background includes 22 years working for Puget Sound Power and Light (now Puget Sound Energy). At Puget Sound Energy I was the Vice President of Power Planning. Since leaving Puget Sound Energy in 1996, I have consulted in power matters for many clients. From August

of 2000 through August of 2008, I worked for Henwood/Global Energy/Ventyx in their consulting branch. The name and ownership of the company changed over these 8 years, but my role remained the same under all company names and ownership. During my time with Henwood/Global Energy/Ventyx, I provided power marketing advisory services in relation to wholesale electricity price forecasting, project revenue analysis, transmission congestion, consults regarding electric interconnection and transmission arrangements for new power projects, and other related matters in the electric power industry. As a Black & Veatch employee, I performed similar consulting activities. A copy of my resume is attached as Exhibit 1.

II. SUMMARY OF TESTIMONY

Q. Please summarize your testimony in this proceeding.

A. Oak Tree Energy is entitled to a PPA based on avoided cost determined as of the date the Legally Enforceable Obligation (LEO) was created.

- The legally enforceable obligation was created Feb 25, 2011.
- The offer made in the LEO letter was at a price below NorthWestern's avoided cost at that time. PURPA allows a QF to accept a price below avoided cost.
- An avoided cost calculation appropriate for the Oak Tree Energy facility could be either the cost NorthWestern would avoid to build its own wind plant (which also provides "green" attributes) or the avoided cost related to a resource that does not have "green" attributes. I call this the "brown value" avoided cost.
- The brown value avoided cost calculation relevant to the Oak Tree Energy facility is primarily an energy avoided cost with little capacity avoided cost.
- NorthWestern also needed capacity and had an avoidable capacity resource in its plan on Feb 25, 2011. Thus, while the capacity portion of the Oak Tree brown value avoided cost calculation is small, Oak Tree is entitled to it.
- Historical data shows that NorthWestern both buys spot market power and sells spot market power. As such, a brown value avoided energy cost is appropriately based on a forecast of hourly spot market energy prices.

- The Avoided Cost data provided by NorthWestern well after this matter was initiated is not appropriate for this proceeding.

III. LEGALLY ENFORCEABLE OBLIGATION (LEO)

Q. What is a Legally Enforceable Obligation?

A. FERC was concerned that utilities may refuse to negotiate in good faith with a QF to purchase power under PURPA. Therefore, FERC allowed the QF to establish a Legally Enforceable Obligation (LEO) by offering its power to the utility at a rate that does not exceed its avoided cost. The LEO becomes a legally enforceable contract for the purchase of QF power even though the buyer does not formally sign the agreement.

Q. Was Oak Tree Energy unable to negotiate with NorthWestern energy for terms consistent with PURPA?

A. Yes.

Q. As a result, did Oak Tree Energy establish a Legally Enforceable Obligation with NorthWestern?

A. Yes. On Feb 25, 2011, after concluding that NorthWestern did not intend to negotiate with Oak Tree Energy on terms consistent with PURPA, Oak Tree Energy provided NorthWestern with a letter stating that it was establishing a Legally Enforceable Obligation as of that date. See Exhibit 2.

IV. THE PRICE IN THE LEO WAS LESS THAN NORTHWESTERN'S AVOIDED COST ON FEB 25, 2011

Q. What price did Oak Tree include in its LEO?

A. Oak Tree included a price of $54.50/MWh in 2012, escalating at 2.5% per year through the 20 year term of the LEO. This is equivalent to a 20 year levelized avoided cost of $65.12/MWh.

Q. Was this price lower than NorthWestern's avoided cost on Feb 25, 2011?

A. Yes. The next section of this testimony provides information on NorthWestern's avoided cost as of Feb 25, 2011.

Q. Does PURPA allow a QF to sell its power at less than Avoided Cost?

A. Yes, a QF can agree to sell its power to a utility at less than the utility's avoided cost.

Q. Why would Oak Tree Energy agree to sell its power at less than avoided cost?

A. Oak Tree is first and foremost interested in selling its power at a price that allows the wind project to be financed, built and operated over its expected lifespan. In this case, Oak Tree felt the price offered would allow them to achieve that goal. Oak Tree did not want to get involved in a protracted argument with NorthWestern over price and felt that if it offered a price at less than avoided cost NorthWestern might be willing to sign the PPA, allowing the project to proceed.

V. NORTHWESTERN AVOIDED COST IN SOUTH DAKOTA AS OF FEB 25, 2011

Q. How did Oak Tree determine NorthWestern's avoided cost as of Feb 25, 2011?

A. Normally, a QF would look to the PUC approved long term avoided cost for the utility to which it wished to sell. However, on Feb 25, 2011, there was no PUC approved long term avoided cost for NorthWestern in South Dakota. Further, NorthWestern had not developed such a forecast. Therefore, Oak Tree asked me to develop a 20 year forecast of NorthWestern's avoided cost for the state of South Dakota.

Q. How did you go about estimating NorthWestern's 20 year forecast of avoided cost in the State of South Dakota?

A. I believe there are two different legitimate approaches to developing a long term forecast of avoided cost that would apply to a wind QF that is offering its power for 20 years.

Q. What is the first method?

A. The first method (which I call the "brown value" avoided cost because it does not reflect the "green" attributes of the wind project) assumes that the cost that NorthWestern Energy will avoid by taking the output of the Oak Tree Wind Project into its system will be an avoidance of spot market purchases (along with some spot market sales) as well as some avoidance of capacity purchases starting in the year 2013 when NorthWestern data

indicates it will need new capacity. The avoided capacity value is quite small in comparison to the avoided energy value because (a) only 20% of the 19.5 MW of Oak Tree Wind nameplate capacity is assumed to count toward peak needs and (b) because the value of capacity is assumed to be small. Most of the avoided cost value comes from the value of energy. The value of energy came directly from the Black & Veatch Fall 2010 Energy Market Forecast for the Midwest United States. This energy forecast is a standard off the shelf product that Black & Veatch prepares and uses in a large number of consulting engagements. It was not prepared specifically for this proceeding. That forecast, which provides hourly estimates of energy value over the next 25 years, was used to value the expected hourly output of the Oak Tree wind project. The calculation involved taking the estimated output of the wind project by hour for each year and multiplying it by the forecast value of spot energy on each hour of the year. The result of this calculation, taking both the energy avoided cost and the capacity avoided cost into account, is a 20 year levelized avoided cost of $78.92/MWh. This method assumes that the costs being avoided are not from resources that qualify as "renewable:" resources; therefore, this avoided cost would have Oak Tree Energy retain the Renewable Energy Credit (REC) value.

Q. What is the second method?

A. The second method (which I call the "green value" avoided cost because it does reflect the "green" attributes of the wind project) assumes that NorthWestern Energy will avoid building its own 19.5 MW wind plant if it purchases the Oak Tree Wind project output for a 20 year period. To perform this calculation, I used data on the cost of some wind from NorthWestern Energy filings in Montana in the Feb 25, 2011 timeframe where NorthWestern has estimated the cost of building and operating wind projects. I believe that the costs for such wind projects in South Dakota would be essentially the same as such costs in Montana. I used the wind capacity factor for a wind project located in South Dakota. The result of this calculation is a 20 year levelized avoided cost of $70.81/MWh. This method assumes that the costs being avoided would be from a "renewable" resource. Therefore, under this calculation of avoided cost, the Renewable Energy Credit (REC) value would go to NorthWestern Energy.

Q. Have you provided back-up information and workpapers on your calculations of avoided costs under these two methods?

A. Yes. In response to SDPUC staff Request No. 5(a), Oak Tree provided two Excel workbooks with detailed calculations showing the calculation of the brown value avoided cost and the green value avoided cost. See Excel Spreadsheets Exhibit 3 *Summary and Brown Value_Avoided Cost* and Exhibit 4 *Wind Ownership_Avoided Cost*. In addition, in response to NorthWestern Request 1-22, Oak Tree has provided considerable information on the basis for the Black & Veatch 20 year hourly forecast of spot energy prices and annual capacity prices in the South Dakota region. See Confidential Exhibit 5 *RFP 1-22b, 1-22d* and Confidential Exhibit 6 *RFP 1-22c*.

VI. CAPACITY VALUE IN AVOIDED COST

Q. You stated earlier that most of the brown value avoided cost is in the energy value, but there is some capacity value. Why is the capacity value so low?

A. As indicated earlier, the capacity value is a small part of the brown value avoided cost for two reasons. First, it is assumed that the Midwest Reliability Organization (MRO) will only allow 20% of the nameplate rating of the wind plant to count toward NorthWestern's Resource Adequacy need. Second, the Black & Veatch forecast of the value of capacity in the South Dakota area is quite low because of a surplus of capacity that exists in the area.

Q. You refer to the MRO. Why are you referring to the MRO?

A. Each load serving entity in the United States is required to belong to a reliability organization. NorthWestern in South Dakota could choose to belong to different reliability organizations, but it has chosen to belong to the Midwest Reliability Organization (MRO).

Q. Has the MRO estimated that 20% of wind capacity should be counted on to meet peak load?

A. Yes. MRO studies and reports have stated this in the past. This subject continues to be discussed and may change in the future. Some reliability organizations are modifying

their rules so that each wind plant will be counted differently toward meeting peak based on historical performance of that particular wind plant on peak load hours. Some wind plants may then be counted at more than 20% and some at less than 20%. For my calculations, I have assumed that the Oak Tree wind plant will be allowed to count 20% of nameplate toward peak load needs.

VII. NORTHWESTERN NEED FOR MORE CAPACITY AS OF FEB 25, 2011

Q. Did NorthWestern have a need for more capacity as of Feb 25, 2011?

A. Yes. This fact was evidenced in several documents. For example, as of February 25, 2011, the most recent NorthWestern Energy Biennial Plan for South Dakota was dated June 17, 2010. The NorthWestern Energy June 17, 2010 Biennial Plan indicated NorthWestern would need to add a future combustion turbine by 2013.

Q. NorthWestern Energy stated that it intended to build a two new 50 MW Gas Turbines (e.g. the Aberdeen gas turbine) to meet its future peaking needs in 2012 and 2013. Had NorthWestern signed firm construction agreements to build these plants as of Feb 25, 2011?

A. Not to my knowledge. It is my understanding that NorthWestern did not break ground on the first of these gas turbines until October 14, 2011. Therefore, these would have been planned capacity resources that could be avoided by a QF.

Q. The Aberdeen gas turbine is a 60 MW gas turbine. So the wind would not be needed for capacity after the installation of this 60 MW unit. Would that be a reason not to include some capacity avoided cost as a part of the combined energy and capacity avoided cost?

A. No. Generation units are often "lumpy". This means that a unit cannot be built that exactly meets the capacity need in every year. NorthWestern chose to start construction on a 60 MW gas turbine in October of 2011, this does not mean that any resource committed to before that date should have its capacity value reduced.

Q. Even with this 60 MW Aberdeen gas turbine, will NorthWestern be long on capacity for the next 20 years?

A. No. NorthWestern data indicates that even with the new Aberdeen gas plant, Northwestern will need additional amounts of peaking capacity in the near future. So, at

most, the capacity value of the Oak Tree plant would be delayed for a couple of years. As can be seen in my worksheets, since the capacity avoided cost for the Oak Tree wind project is so low in the next few years, the removal of 2-3 years of capacity value will have a negligible impact on the avoided cost over the 20 year life of the Oak Tree PPA. Since Oak Tree Energy already offered a price below NorthWestern's then avoided cost, there is no reason to reduce the cost further just because NorthWestern claims to have no need for capacity in the years prior to 2016.

VIII. NORTHWESTERN ACTIVITY IN SPOT MARKETS

Q. NorthWestern has questioned how you know that it participates in buying and selling power in spot markets. What makes you believe that NorthWestern participates in buying and selling in spot markets?

A. In my experience, every load serving entity participates (in one way or another) in purchasing and selling power in spot markets. It is important for load serving entities to do so in order to optimize their daily operations for the benefit of their retail customers.

Q. Has NorthWestern provided responses to Oak Tree data requests that allows you to confirm they are participating in such markets?

A. Yes. Oak Tree requested that NorthWestern provide hourly load and generation data over the last few years. I have reviewed that data and extracted data on a heavy load day and a light load day that demonstrates that NorthWestern energy is participating in spot markets on a daily and hourly basis.

Q. Please provide the data for the heavy load day.

A. The table below shows NorthWestern's South Dakota load for each hour of the day on August 11, 2010. It also shows the hourly generation from all of the NorthWestern firm supplies dedicated to its South Dakota retail load on that day.

																	Peak							
	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24
Load	191	179	169	164	162	168	183	204	227	243	263	278	289	298	301	305	307	301	291	281	270	268	245	222
Coyote	43	42	43	43	43	43	42	43	43	43	43	42	43	43	43	43	42	43	43	43	42	43	43	43
Big Stone	90	90	91	90	90	90	109	112	111	111	111	111	111	112	111	111	111	111	112	111	111	111	92	83
Titan 1 Wind	2	7	20	24	22	23	25	23	20	18	12	4	1	3	6	8	6	8	9	9	13	20	19	19
Neal 4	54	55	55	55	54	55	55	54	54	55	55	55	55	55	55	54	55	55	55	55	55	55	55	55
	189	194	209	212	209	211	231	232	228	227	221	212	210	213	215	216	214	217	219	218	221	229	209	200
Short (-) or Long (+)	-2	15	40	48	47	43	48	28	1	-16	-42	-66	-79	-85	-86	-89	-93	-84	-72	-63	-49	-39	-36	-22

As can be seen, with its own resources Northwestern is long on light load hours and short on heavy load hours. Therefore, NorthWestern must be selling spot market power in light load hours and buying spot market power in heavy load hours.

Q. *Please show the data for the light load day.*

A. The table below shows NorthWestern's South Dakota load for each hour of the day on September 25, 2010. It also shows the hourly generation from all of the NorthWestern firm supplies dedicated to its South Dakota retail load on that day.

	HE1	HE2	HE3	HE4	HE5	HE6	HE7	HE8	HE9	HE10	HE11	HE12	HE13	HE14	HE15	HE16	HE17	HE18	HE19	HE20	HE21	HE22	HE23	HE24
Load	120	114	111	105	106	113	123	130	137	143	145	145	137	136	137	139	140	141	140	142	147	141	131	121
Coyote	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Big Stone	67	60	60	60	59	60	70	70	70	70	70	70	70	70	70	70	71	70	70	70	75	75	75	65
Titan 1 Wind	8	1	1	7	4	2	2	1	4	3	2	2	1	2	4	5	4	2	0	0	0	2	6	13
Neal 4	55	54	55	55	55	54	55	55	55	54	55	55	55	54	55	55	54	55	55	55	54	55	55	55
	130	115	116	122	118	116	127	126	129	127	127	127	126	126	129	130	129	127	125	125	129	132	136	133
Short (-) or Long (+)	10	1	5	17	12	3	4	-4	-8	-16	-18	-18	-11	-10	-8	-9	-11	-14	-15	-17	-18	-9	5	12

Again, NorthWestern is long on energy in light load hours and short on heavy load hours when only using their own supplies. Therefore, NorthWestern must be selling spot market power in light load hours and buying spot market power in heavy load hours.

Q. *Given that NorthWestern is active in spot markets in all hours of the year, is that why you have calculated the avoided brown energy value of the Oak Tree project by using hourly spot prices and hourly shapes of the Oak Tree project?*

A. Yes.

IX. NORTHWESTERN'S AVOIDED COST INFORMATION

Q. *Based on an order from the SDPUC, NorthWestern provided some recent avoided cost information. What is your observation on that information?*

A. In my opinion, this information is not useable in this proceeding for the following reasons:

- This avoided cost data is not relevant to the Oak Tree QF because it was prepared well after Oak Tree requested a contract.
- This avoided cost data is not well supported by foundational information on how the spot market energy prices were developed and what were the many important assumptions that went in to developing them.

Q. Do you have any other observations on the NorthWestern recently provided avoided cost information?

A. Yes. I notice with interest that the avoided cost data recently provided by NorthWestern indicates that even with the planned new Aberdeen Gas Turbine, NorthWestern has avoided capacity costs starting in the year 2016.

Q. Please summarize your testimony.

A. For all the reasons above, the SDPUC should approve the contract offered by Oak Tree Energy on February 25, 2011.

Q. Does that complete your testimony?

A. Yes.

Respectfully submitted this 16th day of December, 2011.

/s/ Yvette K. Lafrentz

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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing document was served electronically on this 16th day of December, 2011, upon the following:

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