

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

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**IN THE MATTER OF THE  
APPLICATION BY CROCKER WIND  
FARM, LLC FOR A PERMIT OF A  
WIND ENERGY FACILITY AND A 345  
KC TRANSMISSION LINE IN CLARK  
COUNTY, SOUTH DAKOTA, FOR  
CROCKER WIND FARM**

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**STAFF’S FIRST SET OF DATA  
REQUESTS TO CROCKER WIND  
FARM, LLC**

**EL16-037**

Below, please find Staff’s First Set of Data Requests to Crocker Wind Farm, LLC (Applicant).

- 1-1) Section 6 of the application discusses the demand for renewable energy. Applicant states in 6.1 that the Project is being proposed in order to meet the growing demand for energy production from clean, environmentally-friendly, renewable resources. Pursuant to ARSD 20:10:22:10, provide data, data sources, assumptions, forecast methods or models, or other reasoning upon which the statement is based.**

The Project will support the regional need for renewable energy produced in South Dakota. Utility long range demand in the Midwest shows the intent to purchase approximately 1,000 MW of wind energy over the next 5 years. This increased demand is evident through the utilities’ integrated resource plans outlined in Section 6.2 of the application. Additionally, as the cost for renewable energy has decreased, commercial, industrial, and institutional (C&I) demand for renewable energy has increased creating a new market to obtain a power purchaser. In 2016, approximately 1,600 MW of wind energy was purchased from the C&I sector.<sup>1</sup>

- 1-2) Provide a description of present and estimated consumer demand and estimated future energy needs of those customers to be directly served by the proposed facility. ARSD 20:10:22:10.**

A review of utilities’ integrated resource plans (IRPs) confirms that utilities are seeking additional renewable generation resources in the next several years (studies are referenced in Section 6.2 of the application). As an independent power producer, Crocker is not limited to the needs of one region and is capable of bidding into multiple wholesale consumers across the region. Over the past year, eight utility and six corporate/industrial power supply proposal requests have been received that Crocker would qualify for.

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<sup>1</sup> Renewable Choice Energy. “The Rise of the Corporate Energy Buyer.” Viewed Aug. 29, 2017. <https://www.renewablechoice.com/blog-corporate-energy-buyer/>

**1-3) Applicant states in 6.1 of the application that “[u]tilities seeking to diversify their energy generation portfolio are attracted to wind energy projects...” Has a specific utility company been identified? Or, will the generation be sold into the market?**

Crocker is actively marketing the sale of electricity to third parties, both utilities and large power consumer/marketers. The Project may sell power in the form of a power purchase agreement or the Project could be owned directly by a utility. As stated in the response to question 1-2 above, 14 power supply request for proposals have been received in the last year that Crocker would qualify for.

**1-4) In 6.2, Applicant states that wind energy provides the most cost efficient source of energy for customers. What considerations were taken into account when arriving at this conclusion? Specifically, do the tables provided take into account the intermittent nature of the resource?**

The Lazard Levelized Cost of Energy Analysis 10.0 provides an in-depth study of alternative energy costs compared to conventional technologies.<sup>2</sup> Considerations taken into account include renewable portfolio standard (RPS) requirements, carbon regulations, continually improving economics as underlying technologies improve and production volumes increase, and government subsidies in certain regions. Balancing generation and the costs associated with ensuring reliability are inherently built into the transmission owner(s). No additional accounting is needed in this case.

Crocker is interconnecting with participation in an independent system operator (ISO). The ISO fees that the transmission system operator pay are part of the interconnection agreement and to some extent are built into the rate base of the rate payers who are also benefiting from the portfolio of generation and transmission that are managed by the ISO. Utilities have conducted wind integration studies to be used in the resource planning and selection process to ensure that wind generation resources continue to be compared on a level playing field with other technologies and have concluded there will be little, if any, increase in direct costs related to integration issues.<sup>3</sup>

**1-5) Prior to the selection of the site, did Applicant work with or have contact with the South Dakota Department of Game Fish and Parks or with the U.S. Fish and Wildlife Service? If so, please briefly explain the context of the contact and any concerns on the part of the agencies.**

Crocker completed a landscape level assessment to identify habitat for species of concern in accordance with the U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines and make an informed decision on whether to move forward with the Project. Formal consultation to determine if the Project

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<sup>2</sup> Lazard’s Levelized Cost of Energy Analysis 10.0. 2016. Accessed March 24, 2017.  
<https://www.lazard.com/perspective/levelized-cost-of-energy-analysis-100/>.

<sup>3</sup> NSP Wind Integration Study. Accessed September 5, 2017.  
<https://www.xcelenergy.com/staticfiles/xcel/PDF/Regulatory/16-App-M-NSP-Wind-Integration-Study-January-2015.pdf>

should move forward with the wildlife agencies occurred after the initial site was selected via project notification letters requesting comments followed by in-person meetings and conference calls. When the Project Area expanded, both agencies were notified and provided an opportunity to comment on the revised Project Area.

**1-6) What other sites considered for this project?**

An initial evaluation of the transmission system was conducted to determine where to cost effectively connect new generation in South Dakota. In addition to the considerations outlined in Section 9.0 of the application and the discussion in 1-5, the Project Area was selected following a review of the surrounding land use and regional constraints. Other wind development was underway north of the Project Area, south of the Project Area was eliminated due to uninterested landowners and proximity to the Clark airport, and land to the east and west of the Project Area was not considered due to the lower wind resource and existing leases with other companies. A regional environmental analysis included a review of threatened and endangered species, critical and large areas of intact habitat, and land cover and the density of state and federal lands including USFWS managed easements. All of these considerations were evaluated prior to moving the Project forward.

**1-7) In section 20.2.1, Applicant states it will pay approximately \$1.8 million per year in taxes. Provide support for this figure.**

The yearly tax projection is based on the Wind Farm Production and Capacity tax defined in SD Codified Law Chapter 10-35 (16-21). The estimates are based on Crocker operating 400 MW's of nameplate capacity and an operations profile designed by Crocker's experienced development team. The actual amount paid will be based on current law and real operations of the year in question. Allocations to taxing jurisdictions are projected below with conservative production measures.

- State of South Dakota: Approximately \$480,000 per year totaling \$9.6 million over 20 years
- Clark County: Approximately \$462,000 per year totaling \$9.24 million over 20 years
- Townships: Approximately \$198,000 per year totaling \$3.96 million over 20 years
- School Districts: Approximately \$660,000 per year totaling \$13.2 million over 20 years
  - Additional revenue for local school district (years 1-9 only): Amounts vary per year totaling \$4.6 million in additional tax revenue over the first 9 years.
  - Local revenue projected to offset state funding (years 6-20+): Amount varies per year totaling \$8.6 million over years 6-20. SD Codified Law 13-13-10.1 (6B) specifies how school portion of tax is allocated over time. In summary, one hundred percent shall be retained by the school district to which the tax revenue is apportioned for the first five years of producing power, eighty percent for the sixth year, sixty percent for the seventh year, forty percent for the eighth year, twenty percent for the ninth year, and zero percent thereafter.

**1-8) Pursuant to ARSD 20:10:22:23(2), please provide a forecast of the immediate and long-range impact of property and other taxes of the affected taxing jurisdictions.**

Wind Farm Facility improvements made to land as a result of the Project are not assessed by property value for the purposes of property taxes, rather taxes are paid by Project Capacity and Generation. A change in property tax revenue as a result of the Project is not anticipated. Response 1-7 provides additional details on the tax revenue expected to be generated by the Project.

**1-9) Pursuant to ARSD 20:10:22:23(6), describe plans to coordinate with local and state offices of disaster services in the event of an accidental release of contaminants from the proposed facility.**

Crocker and its construction team will coordinate with first responders, including but not limited to air ambulance, local sheriff’s office(s) and local fire services, to develop a safety plan during construction and operations of the Project. The safety plan will cover actions to be taken in the event of an accidental release of contaminants. The Project will have minimal waste as a result of operation and all required permits for handling contaminants will be obtained. Crocker has and will be in contact with local first responders to offer information about the Project and to answer any questions response teams may have regarding project plans and details. Crocker will also coordinate with South Dakota One Call and pipeline companies before construction begins.

**1-10) Referring to Appendix H, did the LBNL study focus on any agricultural areas? If so, please list the locations.**

In the 2009 and 2013 LBNL studies wind farms were examined in 36 unique counties in the United States (Table 1). Note that 21 of the 36 unique counties are considered more than 50% rural whereas only four counties (Benton, WA; Walla Walla, WA; DeKalb, IL; Atlantic, NJ) are less than 22% rural.<sup>4</sup> 16 unique counties have a percentage rural greater than or equal to 59%, the raw average of the South Dakota counties. Sac County, IA is considered 100% rural, which is the same as Clark County, SD. Additionally, Clark County’s landcover is 26% pastureland and several counties that were examined have land cover dominated by pastureland (over 50%) including Grady, OK; Custer, OK; Kittitas, WA; and Howard, TX.<sup>5</sup>

**Table 1  
Comparative Data**

County	State	Population	Population/mi <sup>2</sup>	Median Age	Median Income	Median Home Value	% Rural
Buena Vista	IA	20,578	36	37	46,469	99,744	44
Lee	IL	34,735	48	42	51,682	140,291	53

<sup>4</sup> City Data. <http://www.city-data.com/>

<sup>5</sup> 2012 Census Publications by State. USDA Census of Agriculture. Accessed on Aug. 29, 2017. [https://www.agcensus.usda.gov/Publications/2012/Full\\_Report/Census\\_by\\_State/](https://www.agcensus.usda.gov/Publications/2012/Full_Report/Census_by_State/)

County	State	Population	Population/mi <sup>2</sup>	Median Age	Median Income	Median Home Value	% Rural
Livingston	IL	37,903	36	40	55,287	102,523	41
Madison	NY	72,369	110	39	52,300	135,300	59
Oneida	NY	232,871	192	40	43,702	113,600	33
Custer	OK	29,500	30	31	45,179	114,228	30
Umatilla	OR	76,705	24	35	48,514	138,600	29
Somerset	PA	76,218	71	44	43,429	103,900	71
Wayne	PA	51,401	70	45	47,932	179,354	88
Howard	TX	36,651	41	38	47,906	67,485	20
Benton	WA	184,486	109	35	48,997	176,500	11
Walla Walla	WA	58,844	47	36	45,875	186,784	17
Door	WI	27,766	58	49	50,586	187,484	69
Kewaunee	WI	20,444	60	42	52,929	145,344	72
<b>Average*</b>	<b>LBNL 2009</b>	<b>68,605</b>	<b>66.6</b>	<b>39.5</b>	<b>\$49,342</b>	<b>\$132,510</b>	<b>45.5</b>
Carroll	IA	20,562	36	42	50,074	107,911	52
Floyd	IA	16,077	32	43	44,152	92,087	53
Franklin	IA	10,436	18	42	48,715	89,330	60
Sac	IA	10,035	17	46	48,451	81,367	100
DeKalb	IL	105,462	166	29	52,867	160,600	20
Livingston	IL	37,903	36	40	55,287	102,523	41
McLean	IL	174,06	147	32	61,846	160,300	16
Cottonwood	MN	11,633	18	44	45,949	83,197	62
Freeborn	MN	30,840	44	44	46,698	99,683	43
Jackson	MN	10,629	15	44	52,428	93,644	69
Martin	MN	20,220	29	45	51,865	98,341	54
Atlantic	NJ	275,209	491	39	52,127	218,600	13

County	State	Population	Population/mi <sup>2</sup>	Median Age	Median Income	Median Home Value	% Rural
Clinton	NY	81,632	79	39	43,892	121,200	64
Franklin	NY	51,262	31	39	45,580	93,529	63
Herkimer	NY	63,744	45	42	43,754	89,098	52
Lewis	NY	27,220	21	40	47,990	103,257	87
Madison	NY	72,369	110	39	52,300	135,300	59
Steuben	NY	98,394	71	41	47,046	90,900	60
Wyoming	NY	41,188	69	40	50,949	96,515	64
Paulding	OH	18,989	46	40	44,650	89,619	82
Wood	OH	129,590	210	35	51,680	147,300	30
Custer	OK	29,500	30	31	45,179	114,228	30
Grady	OK	53,854	49	38	50,677	111,956	64
Fayette	PA	134,086	170	43	38,903	89,100	48
Somerset	PA	76,218	71	44	43,429	103,900	71
Wayne	PA	51,401	70	45	47,932	179,354	88
Kittitas	WA	42,522	19	31	43,849	234,150	40
<b>Average*</b>	<b>LBNL 2013</b>	<b>62,766</b>	<b>79.3</b>	<b>39.9</b>	<b>\$48,454</b>	<b>\$118,037</b>	<b>55.0</b>
Clark	SD	3,645	4	45	48,511	72,127	100
Codington	SD	27,938	41	37	46,361	140,909	22
Grant	SD	7,241	11	45	48,354	105,054	55
<b>Average*</b>	<b>SD</b>	<b>12,941</b>	<b>18.7</b>	<b>42.3</b>	<b>\$47,742</b>	<b>\$106,030</b>	<b>59.0</b>

**1-11) What if any research did Applicant perform to ensure that the LBNL study accurately reflected land use in Clark County, South Dakota in order to provide an accurate comparison?**

Because none of the previous academic research or alternative literature on the impact of large-scale wind farms on nearby property values has included South Dakota wind projects, to predict what might occur near South Dakota wind facilities requires the transfer of existing research from similar areas. The LBNL studies were constructed with transferability specifically in mind as they used a wide range of community types so that the results would be applicable to the maximum number of alternative sites.

The range of counties studied in the LBNL includes counties like those in South Dakota. Table 1 provided in 1-10, lists common socioeconomic measures (population, population per square mile, median age, and percent rural are from 2014, whereas median income and median home value are 2013 levels). The table includes three panels, with the upper panel listing the counties in the 2009 LBNL study, the middle panel the counties in the 2013 LBNL study, and the bottom panel the counties in South Dakota where the proposed wind facilities are to be built, respectively. Clark County is similar to some of the LBNL counties (see measures such as median age and median income), which implies that the LBNL studies are a reasonable transfer source. In general, the South Dakota counties have lower average population/mi<sup>2</sup>, median income, and median home values than the average county in either the 2009 or 2013 LBNL studies. The South Dakota counties look very much like their Minnesota and Iowa counterparts, especially Cottonwood County, MN, Jackson County, MN, Franklin County IA, and Sac County, IA.

Table 2 provides a more detailed examination between the three South Dakota counties and Cottonwood County, MN, Jackson County, MN, Franklin County, IA, and Sac County, IA. Two additional measures of similarity are presented – mean size of farms and the percent of the workforce employed in agriculture, broadly defined. In addition, the calculated averages are weighted by population. As is evident, the percent employed in agriculture is very close between the comparison group and the South Dakota counties. Mean farm size is larger in the South Dakota counties but the percent rural is larger in the comparison group. This group-wise comparison suggests that the LBNL studies do include information from counties similar to those evaluated in South Dakota.

Given the information about the types of facilities planned and the previous research on like counties, the LBNL studies are a reasonable source for a benefit transfer (or damage transfer) effort to South Dakota. This leads to the overall conclusion that, the planned wind projects in South Dakota will not significantly reduce the sales prices of properties in the neighborhood of the wind facilities.

**Table 2**  
**Additional Comparative Data**

County	State	Population	% Rural	Mean Size of Farms*	% Agriculture Employment**
Sac	IA	10,436	60	429	9.1
Franklin	IA	10,035	100	409	12.5
Cottonwood	MN	11,633	62	450	3.7
Jackson	MN	10,629	69	402	11.0

<b>Weighted Average***</b>			<b>72.2</b>	<b>423.3</b>	<b>8.9</b>
Clark	SD	3,645	100	894	25.4
Codington	SD	27,938	22	557	4.9
Grant	SD	7,241	55	639	16.7
<b>Weighted Average***</b>			<b>36.3</b>	<b>606.7</b>	<b>9.3</b>

\*Acres

\*\*Agriculture, Fishing, Forestry, and Hunting

\*\*\*Weighted by Population

Dated this 11<sup>th</sup> day of August, 2017.