Exhibit A13

BEFORE THE
PUBLIC UTILITIES COMMISSION
STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION OF DAKOTA RANGE I, LLC AND DAKOTA RANGE II, LLC FOR AN ENERGY FACILITY PERMIT TO CONSTRUCT A WIND ENERGY FACILITY

SD PUC DOCKET EL18-003

PREFILED TESTIMONY OF MICHAEL MAROUS
ON BEHALF OF DAKOTA RANGE I, LLC AND DAKOTA RANGE II, LLC

April 6, 2018

I. INTRODUCTION AND QUALIFICATIONS

Q. Please state your name, employer, and business address.

A. My name is Michael MaRous. I am the owner and president of MaRous & Company. My business address is 300 South Northwest Highway, Suite 204, Park Ridge, Illinois 60068.

Q. Briefly describe your educational and professional background and your current work for MaRous & Company.

A. I graduated from the University of Illinois at Urbana-Champaign with a B.S. in Urban Land Economics and began my career working with a Chicago real estate appraisal and consulting firm. I founded MaRous & Company in 1980. During my career, I have appraised real estate located in more than 25 states and reflecting a total value in excess of $15 billion. Properties include general industrial, commercial, and residential parcels, as well as vacant land and also specialized properties and interests, including air/development rights, billboards, cemeteries, easements, golf courses, gambling facilities, schools, streets, tank farms, waste transfer stations, utility and railroad rights-of-way, and energy-related projects.

Energy-related projects include a number of proposed natural gas-fired electric plants in various locations; the Grand Ridge V and Otter Creek wind farms in LaSalle County, the Pleasant Ridge Wind Farm in Livingston County, the Walnut Ridge Wind Farm in Bureau County, the McLean County Wind Farm in McLean County, and the Twin Forks Wind Farm in Macon County, all in Illinois; the Freeborn County Wind Farm in Freeborn County, Minnesota; the Ida II Wind Farm in Ida County, and the Palo Alto County Wind Farm in Palo Alto County, both in Iowa; the Orangeville Wind Farm in Wyoming County, New York; the Dorchester County Solar Farms in Dorchester County, Maryland; and the Badger Hollow Solar Farm in Iowa County, Wisconsin. In addition, I am in the process of completing market impact studies for multiple wind projects in South Dakota.

My statement of qualifications is included at the end of the April 6, 2018 Market Impact Analysis ("Market Analysis") for the Dakota Range Wind Project ("Project") attached as Exhibit 1.

Q. What is your role in the Project?

A. I was retained by Dakota Range I, LLC and Dakota Range II, LLC (together "Dakota Range" or "Applicant") to prepare an independent market analysis of the potential impact, if any, the Project would have on the value of the properties in the general area of the Project. Specifically, the analysis addressed the question of whether market data indicates that the Project will have an effect on the value of residential uses and/or agricultural land in proximity to the proposed wind turbines. When I use the phrase "proximity to wind turbines," I generally mean turbines within three to five times the hub height of a wind turbine.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to provide information specific to South Dakota and the Project area with respect to the potential impact of wind turbines on rural residential and agricultural property.

Q. Have such studies been conducted previously in South Dakota?

A. There are no peer reviewed studies that have studied South Dakota properties. I was also unable to locate any other market analysis specific to South Dakota wind farms. Large-scale peer reviewed studies have evaluated the potential impact of wind turbines on property values outside of South Dakota. While these studies are not specific to South Dakota, they are authoritative studies that have produced consistent results. In my report, and in my testimony, I address how these studies support my analysis.

Q. Please identify the sections of the Application that your testimony supports.

A. My testimony further supports Section 21.1.2.3, Property Value Impacts.

Q. What exhibits are you sponsoring?

A. In addition to my Market Analysis, Exhibit 1, I am sponsoring the following exhibits:

- Exhibit 2: Brian Guerin, Jason Moore, Jamie Stata, and Scott Bradfield (2012). *Impact of Industrial Wind Turbines on Residential Property Assessment in*

Ontario: 2012 Assessment Base Year Study. Municipal Property Assessment Corporation.

- Exhibit 3: Jason Moore, Jamie Stata, and Scott Bradfield (2016). *Impact of Industrial Wind Turbines on Residential Property Assessment in Ontario: 2016 Assessment Base Year Study*. Municipal Property Assessment Corporation.
- Exhibit 4: Corey Lang and James Opaluch (2013). *Effects of Wind Turbines on Property Values in Rhode Island*. Environmental and Natural Resource Economics, University of Rhode Island.
- Exhibit 5: Richard J. Vyn and Ryan M. McCullough (2013). *The Effects of Wind Turbines on Property Values in Ontario: Does Public Perception Match Empirical Evidence?* University of Guelph, Canada.
- Exhibit 6: Carol Atkinson-Palombo and Ben Hoen (2014). *Relationship between Wind Turbines and Residential Property Values in Massachusetts*. University of Connecticut and Lawrence Berkeley National Laboratory.

II. MARKET ANALYSIS FOR DAKOTA RANGE PROJECT

Q. How did you familiarize yourself with the Project?

A. I visited the Project area in Grant and Codington counties on February 18 and 19, 2018. I also analyzed the county and state applications for the Project, including the turbine layout, to familiarize myself with the Project and regulatory requirements.

Q. What data did you evaluate in conducting your market value analysis?

A. As detailed further in the Market Analysis, I evaluated the footprint of the Project, as well as the surrounding area, and reviewed rural residential and agricultural property sales data. I also researched agricultural land values in Codington and Grant counties and in other counties in South Dakota in which wind farms are located, and looked at market trends for both agricultural and residential land for the past five years. I also considered the economic impact on the larger community by the approval of the use as proposed. In addition, I considered the opinions of assessors in six South Dakota counties with active wind projects. In addition to analyzing South Dakota-specific information, I considered my prior analyses

for wind projects in similar counties in Minnesota, Iowa, and Illinois, including paired sales and discussions with assessors in counties with active wind farms. Finally, I reviewed relevant literature on wind farm property value impact analyses previously conducted.

Q. Could you discuss in more detail the matched paired sales analysis you conducted?

A. Yes. I reviewed sales transactions in seven northeastern counties in South Dakota[1] to try to identify matched paired sales to use for comparison, meaning sales of similar rural residential properties where one property was near a wind farm and one property was not. However, of the sales reviewed, only one rural residential property sale was near a wind farm, and that property, located in Brookings County, South Dakota, was nearly four miles away from a turbine. As a result, the sale was not close enough to a wind turbine to use in a proximate/not proximate paired sales comparison.

Given a lack of proximate/not proximate paired sales data for eastern South Dakota, I reviewed matched paired sales data in rural areas of Minnesota, Iowa, and Illinois. As detailed in the Market Analysis, when adjustments were made to the sales prices of the matched pairs to account for their physical differences and differences in amenities, the per square foot sales prices were essentially the same, indicating that proximity to a wind farm did not impact the price of the proximate sale.

Q. As part of your Market Analysis, your company interviewed assessors in South Dakota, Iowa, Illinois and Minnesota. Please provide an overview of that survey effort.

A. In South Dakota specifically, we surveyed assessors in six South Dakota counties that each had more than 25 operational wind turbines: Aurora County, Brookings County, Charles Mix County, Day County, Hyde County and Jerauld County. We spoke with assessors in each county to gather information on their experience regarding the impact of wind farms upon market values and/or assessed values of surrounding properties. We conducted similar interviews of assessors in 26 counties in Iowa, 8 counties in Minnesota, and 18 counties in Illinois.

[1] Deuel County, Grant County, Codington County, Day County, Hamlin County, Roberts County and Clark County.

Q. What were the results of your assessor surveys?

A. The South Dakota assessors and all other assessors interviewed reported that there was no market evidence to support a negative impact on residential property values as a result of the development of and proximity to a wind farm:

- There has been only one tax appeal in any county based upon wind farm-related concerns. That one appeal was located in Aurora County, South Dakota, where the 151.5 MW PrairieWinds SD1 Wind Project is located. The appeal was denied based on lack of evidence that proximity to wind turbines affected residential value.
- There had been no reductions in assessed valuations due to proximity to wind turbines.
- Residential assessed values had fluctuated consistently as influenced by market conditions, with no regard for proximity to a wind farm.
- County Assessors consistently reported that whatever initial concern there may have been regarding property values during the planning and approval stages of the various wind farms, it dissipated once the wind farm was constructed. Further, county assessors repeatedly stated that county revenues and revenues to individual farms outweighed any initial concerns that residents had about the wind farms joining their communities.

Q. Please explain why you believe that sales and assessor data from Minnesota, Iowa and Illinois are relevant to the issue of whether the Project may impact property values in South Dakota.

A. The wind farm areas I studied in Minnesota, Iowa, and Illinois are relevant to evaluating the potential impact of wind farms on property values in the Project area for several reasons. First, the areas are all in high wind areas and have similar agricultural economies (corn, soybeans and livestock, including cattle, hogs and poultry), similar demographics, and similarly low density (small acreage) rural residential properties. In these areas, rural land values are largely driven by productivity and many farmers are economically struggling. Second, the market participants (buyers) for agricultural land are similar in these areas, primarily local farmers and national investors. Third, the local economies are driven by the

positive or negative of climate and economy for agricultural products. Fourth, the infrastructure is generally aged and school districts in particular are struggling to fund existing infrastructure, add quality teachers, and add new technology, which makes the areas less desirable to new residents. Fifth, there is low economic job potential in these areas and the best and brightest are not returning after high school, because of lack of infrastructure, area amenities, and limited job possibilities.

Q. Based on your analysis, what conclusions did you reach?

A. As detailed in my Market Analysis, I concluded that there was no market data indicating the Project would have a negative impact on either rural residential or agricultural property values in the area surrounding the Project. Further, although I did not identify proximate/not proximate paired residential property sales in eastern South Dakota, the South Dakota assessor survey results, as well as the matched paired sales data and assessor survey results for Minnesota, Iowa and Illinois, all support the conclusion that the Project would not have a negative impact on rural residential or agricultural property values in the surrounding area. In addition, for agricultural properties that host turbines, the additional income from the wind lease may increase the value and marketability of those properties. These conclusions are further supported by the relevant literature reviewed and by my decades of appraisal experience.

III. PEER-REVIEWED LARGE-SCALE STUDIES

Q. The Application includes a discussion of peer reviewed studies, including the Lawrence Berkeley National Laboratory ("LBNL") studies. Can you please provide additional details regarding the LBNL studies?

A. The 2009 and 2013 LBNL studies are included in the Application, Appendix L.[2] I have reviewed and agree with the discussion in the Application. LBNL is a member of the

[2] Ernest Orlando Lawrence Berkeley National Laboratory, *The Impact of Wind Power Projects on Residential Property Values in the United States: A Multi-Site Hedonic Analysis* (December 2009) and Ernest Orlando Lawrence Berkeley National Laboratory, *A Spatial Hedonic Analysis of the Effects of Wind Energy Facilities on Surrounding Property Values in the United States* (August 2013).

national laboratory system supported by the U.S. Department of Energy through its Office of Science. It is managed by the University of California and is charged with conducting unclassified research across a wide range of scientific disciplines. LBNL conducted regression studies on a nationwide basis in 2009 and 2013 to study the potential effects of the proximity of wind turbines on property values.

Q. What methodologies did the LBNL Studies employ?

A. The 2009 study included an analysis of 7,489 sales within 10 miles of 11 wind farms and 125 post-construction sales within one mile of a wind turbine. The 2009 study used rural settings and wind farms with more than 50 turbines. The 2013 study included 51,276 sales located in nine states and proximate to 67 wind farms, and 376 post-construction sales within one mile of a wind turbine. Like the 2009 study, all were located in rural settings and near wind farms of more than 50 turbines. The 2013 study "used a number of sophisticated techniques to control for other potential impacts on home prices, including collecting data that spanned well before the wind facilities' development was announced to after they were constructed and operating. This allowed the researchers to control for any pre-existing differences in home sales prices across their sample and any changes that occurred due to the housing bubble."[3]

Q. Please discuss the conclusions of the LBNL Studies.

A. Neither study found statistical evidence that home values near wind turbines were affected. Specifically, with respect to the 2013 study, LBNL states that "[t]his study, the most comprehensive to-date, builds on both the previous Berkeley Lab study as well as a number of other academic and published United States studies, which also generally find no measureable impacts near operating turbines."[4]

Q. Do you agree with the conclusions of the LBNL Studies?

A. Yes. The studies found no statistically significant relationship between wind turbines and property value which is consistent with my conclusions noted above.

[3] "No Evidence of Residential Property Value Impacts Near U.S. Wind Turbines, a New Berkeley Lab Study Finds" (August 27, 2013), http://newscenter.lbl.gov/2013/08/27/no-evidence-of-residential-property-value-impacts-near-u-s-wind-turbines-a-new-berkeley-lab-study-finds/.

[4] *Id*.

Q. Are there any other peer-reviewed studies that conclude that there is no significant evidence of negative impact on property values from wind turbines?

A. Yes. There are several studies that, combined, reviewed more than 2,500 transactions within one mile of operating turbines. They all found no evidence of value impact.

Q. Please describe these other studies.

A. The studies I was referencing are summarized below:

- The Municipal Property Assessment Corporation's ("MPAC") studies on the *Impact of Industrial Wind Turbines on Residential Property Assessment in Ontario*. This study was orginally conducted in 2008 and updated in 2012 ("MPAC 2012") (Exhibit 2) and 2016 ("MPAC 2016") (Exhibit 3.) The conclusions in both studies are similar: "there is no statistically significant impact on sale prices of residential properties in these market areas resulting from proximity to an IWT [Industrial Wind Turbine], when analyzing sale prices." (Exhibit 2 at 5.) Using 2,051 properties and generally accepted time adjustment techniques, MPAC "cannot conclude any loss in price due to the proximity of an IWT." (Exhibit 2 at 29.) Further, Appendix G of the MPAC 2012 study "Re-sale Analysis" states in the "Summary of Findings" that "MPAC's own re-sale analysis using a generally accepted methodology for time adjustment factors indicates no loss in price based on proximity to the nearest IWT." (Exhibit 2, Appendix E.)

- Corey Lang and James Opaluch (2013). *Effects of Wind Turbines on Property Values in Rhode Island*. Environmental and Natural Resource Economics, University of Rhode Island. (Exhibit 4.) Structured similarly to the LBNL Studies, this study included 48,554 total sales proximate to 10 wind farms, and 412 post-construction sales within one mile of a turbine. These wind farms were mostly small facilities in urban settings. The study included nuisance and scenic vista stigmas. The report stated, "Both the whole sample analysis and the repeat sales analysis indicate that houses within a half mile had essentially no price change . . ." after the turbines were erected. (Exhibit 4 at 18.)

- Richard J. Vyn and Ryan M. McCullough (2013). *The Effects of Wind Turbines on Property Values in Ontario: Does Public Perception Match Empirical Evidence?* University of Guelph, Canada. (Exhibit 5.) This study analyzed two wind farms in Melancthon Township, Ontario, Canada, using 5,414 total sales and 18 post-construction sales within one kilometer of a wind turbine. The study included nuisance and scenic vista stigmas. The study concluded that: "these results do not corroborate the concerns regarding potential negative impacts of turbines on property values." (Exhibit 5 at 2.)

- Carol Atkinson-Palombo and Ben Hoen (2014). *Relationship between Wind Turbines and Residential Property Values in Massachusetts*. University of Connecticut and Lawrence Berkeley National Laboratory (Exhibit 6.) This study included 312,677 total sales proximate to 26 wind farms, and 1,503 post-construction sales within one mile of a wind turbine. These wind farms were located in urban settings and were primarily proximate to small wind farms. The study included wind turbines and other environmental amenities/disamenities (including beaches and open spaces/landfills, prisons, highways, and major roads) together, for nuisance stigma. "Although the study found the effects from a variety of negative features . . . and positive features . . . the study found no net effects due to the arrival of turbines." (Exhibit 6 at 1.)

Q. Are you aware of any peer-reviewed studies that have found a connection between wind turbines and property values?

A. I am not aware of any peer-reviewed study that has concluded that wind turbines have an impact on property values. I have seen anecdotal reports of such association, but anecdotal reports alone cannot form the basis for a market study.

Q. To what anecdotal reports are your referring?

A. I have reviewed publications from Michael McCann and Kurt Kielisch that claim to support an adverse impact of wind turbines on property values. Neither follows accepted appraisal

practice or is persuasive. McCann, for example, contends there is a negative impact for properties within three miles of a wind turbine. His studies are filled with generalities and do not use generally accepted methodologies. I agree with the criticisms of McCann's work set forth in the prefiled testimony of Mark Thayer in *In the Matter of the Application by Crocker Wind Farm, LLC for a Permit for a Wind Energy Facility and a 345 kV Transmission Line in Clark County, South Dakota, For Crocker Wind Farm,* SD PUC Docket, EL-17-055. Thayer noted:

> Overall, Mr. McCann's studies are cursory investigations using raw averages and paired sales methods. Each of these analyses is beset with the same range of problems, including: small samples; undefined sample selection methods; simple statistical measures; failure to account for obvious confounding factors; and subjective monetary adjustments applied inconsistently. Given these fundamental issues, the conclusions of such work are without foundation and completely lacking in scientific rigor.
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> Moreover, Mr. McCann's results are based on specific locations, specific local influences, and specific adjustment factors. As a result, even if the studies had been done with appropriate scientific rigor, they would not be transferable to any other situation. Further, only one assessment procedure is provided, one that always agrees with his previous work and never explores the impact on his conclusions of different samples, different selection methods, and/or different adjustment factors.

Kielisch's reports are similarly flawed. He attempts to use statistical analyses to support a claim that wind turbines affect property values, but his sample sizes are too small and his study has not been subjected to peer review. *See e.g.* Kielisch, K.C. (2011). "Wind Turbines and Property Value." Presentation, Appraisal Group One.

VI. CONCLUSION

Q. Does this conclude your testimony?

A. Yes.

Dated this 6th day of April, 2018.

Michael MaRous