OAH 8-2500-21395-2

MPUC Docket No. IP-6701/ CN-09-1186
MPUC Docket No. IP-6701/ WS-08-1233

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS

FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application for a Certificate of Need and Large Wind Energy System Site Permit for the 78 Megawatt Goodhue Wind Project in Goodhue County

SUMMARY OF PUBLIC TESTIMONY

On December 30, 2009, the Minnesota Public Utilities Commission (MPUC or Commission) issued an Order accepting the application from AWA Goodhue, LLC for a Certificate of Need (CON) for the proposed phased 78 megawatt Goodhue Wind Project. In this same Order, the Commission approved the use of an informal review and requested the Office of Administrative Hearings (OAH) to conduct at least one public hearing on the project.[1]

Administrative Law Judge Eric L. Lipman conducted four public hearings on the project. The hearings were held on the afternoons and evenings of Wednesday, July 21st and Thursday, July 22nd, 2010. Each of the hearings was held in the gymnasium of the Goodhue High School in Goodhue, Minnesota.[2]

Approximately 200 persons attended the public hearings and 56 persons provided oral testimony during the hearings. Each of those persons who sought recognition on the first day of the hearings was, over the course of the two days, given an opportunity to offer as much testimony as he or she wished and to propound questions to the Applicant's panel and agency staff. In all, these hearings included seven rounds of testimony from interested members of the public.[3]

In each successive round, interested persons were recognized for a period of 5 minutes during which they could submit testimony or make inquiries to the agency and applicant panelists. At end of each round, interested persons were again invited to

---

[1] *In the Matter of the Application of Goodhue Wind LLC for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, MPUC Docket No. CN-09-1186 (December 30, 2009) (E-Docket No. 200912-45523-01).

[2] *See, Hearing Transcripts*, Vol. I through IV.

[3] *See, Hearing Transcript*, Vol. IV at 120.

submit testimony or make inquiries. This process continued until no person sought recognition.[4]

Following the adjournment of the public hearing, the record remained open for an additional 15 days within which interested persons were invited to submit written comments. The post-hearing comment period closed at 4:30 p.m. on Friday, August 6, 2010.

The Commission will issue an order on the applications for a Certificate of Need and a site permit after review of this Summary, the hearing transcripts and the filings submitted into the hearing record.

Description of the Project

AWA Goodhue, LLC ("AWA Goodhue" or the "Applicant") is proposing a large wind energy conversion system in Goodhue County, Minnesota (the "Project"). It will consist of approximately 50 General Electric turbines with a rated output of either 1.5 or 1.6 MW each, and in such number and combinations as to produce 78 MW.[5]

The Project would be located in Goodhue County, Minnesota, within a project area of approximately 32,700 acres. The Project would be sited just west of the city of Goodhue in the townships of Belle Creek, Goodhue, Vasa, Minneola, and Zumbrota. Electricity from the project's wind turbines would be collected at two project substations – the north substation and the south substation. These substations would connect to the electrical transmission grid through new and existing 69 kilovolt (kV) transmission lines.[6]

The proposed project is intended to produce renewable energy in furtherance of Minnesota's renewable energy objectives. Under Minnesota's Renewable Energy Standard, Xcel Energy must obtain 30 percent of its energy from renewable energy by 2020. Of this amount, 24 percent must be obtained from wind energy. AWA Goodhue has executed two power purchase agreements ("PPAs") with Xcel Energy for the full output of the proposed facilities.[7]

Procedural History

The regulatory approval process for this Project has been progressing through four separate dockets before the Commission.

---

[4] *See, Hearing Transcript*, Vol. I at 8 – 11 and 109; *Hearing Transcript*, Vol. II at 10-11 and 76-77.

[5] *Environmental Report*, *In the Matter of the Application of Goodhue Wind LLC for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, MPUC Docket No. CN-09-1186 at 1 (E-Docket No. 20106-52055-01) (also filed as Hearing Exhibit QQ).

[6] *Id*.

[7] *See*, *In the Matter of the Application of Goodhue Wind LLC for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, MPUC Docket No. CN-09-1186 at 3 (E-Docket No. 20107-52677-02).

On October 15, 2009 AWA Goodhue filed its application for a Certificate of Need in Docket Number CN-09-1186.

On October 19, 2009 AWA Goodhue filed an amended application for a site permit in Docket Number WS-08-1233.

On November 20, 2009, Xcel Energy filed petitions for approval of two 39 Megawatt Purchase Power Agreements in Docket Numbers M-09-1349 and M-09-1350.

On February 12, 2010, Goodhue Wind Truth ("GWT") requested contested case proceedings in each of these dockets. The Commission denied those requests, choosing instead to permit the submission of comments on siting issues at the public hearings on the Certificate of Need.[8]

On June 29, 2010, the OES issued a Notice of Public Hearing giving advance notice of the public hearing to parties on the service list, interested persons, landowners, and governmental units. On June 30, 2010, the OES filed an Affidavit of Publication of the Notice of Public Hearing.[9]

Summary of Public Testimony

While the record developed in this matter is considerable – including books, charts, photographs, scientific treatises and documents of every size and description – the materials themselves can be readily divided among four distinct categories. Interested members of the public submitted comments and materials on: (1) the externalities that come from operating wind turbines; (2) the best practices for turbine siting and operation; (3) concerns as to the specific features of AWA Goodhue's application; and (4) the key claims of the project's proponents.

So as to introduce the Commission to the hearing record and to the key claims made by commentators, this summary also segments the record in this way.

I. Externalities from Turbine Operation

Perhaps not surprisingly, the bulk of the hearing testimony and later comment focuses upon the externalities that will follow from siting approximately 50 wind turbines within the Project Area. Below, the key concerns regarding the impacts of the turbines are grouped by category.

---

[8] Order Denying Request for Contested Case Hearing and Requiring Filing of Transmission Costs, Docket No. CN-09-1186 (April 23, 2010) (E-Dockets No. 20104-49531-01) and Order Approving Distribution of Draft Site Permit and Denying Contested Case, Docket Nos. CN-09-1186 and WS-08-1233 (May 3, 2010) (E-Dockets No. 20105-50000-01).

[9] *See*, *In the Matter of the Application of Goodhue Wind LLC for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, MPUC Docket No. CN-09-1186 (E-Docket Nos 20106-52125-01, 20106-52126-01 and 20106-52095-01).

A. Turbine Noise

Numerous residents of Goodhue County object to the noise that will be produced by the wind turbines.[10]

An important focus of the hearing testimony and the later comments was the decibel level at which residents would begin to suffer serious health impacts. The threshold level is vigorously disputed – and both proponents and opponents of the project point the Commission toward the underlying scientific literature.[11]

For example, the Goodhue County Planning Advisory Commission concludes that the nighttime residential noise standard of 50-55 dB set by the Minnesota Pollution Control Agency in Minn. R. 7030.0040 does not adequately protect the health of the citizens of Goodhue County. It points the Commission to the Minnesota Department of Health's 2009 publication "Public Health Impacts of Wind Turbines." In that publication, the MDH opined that the low frequency sound generated by wind turbines is a nighttime sleep issue because the walls and windows of homes block higher frequencies better than they shield out lower frequency noise. Further, MDH concluded that Minn. R. 7030.0040 appears to underweight penetration of low frequency noise into dwellings – with the possible result of sleep deprivation.[12] The Advisory Commission believes that the research underlying the MPCA's standard is dated and that it should not be given deference by the MPUC because it is not based upon current research and does not reflect current scientific knowledge. After consulting with the Goodhue County Public Health Director, the Advisory Commission advocates for a nighttime outdoor standard of 40 dB.[13]

---

[10] *See, e.g.,* Comments of Theresa Spencer (July 11, 2010); Rick Conrad (July 4, 2010); Chris Buck (July 16, 2010); Barbara Stussy, (July 30 and August 4, 2010); Melissa Peteler (August 6, 2010); Deborah Lunde (August 2, 2010); Nancy and Tim Hinrichs (July 31, 2010); Melody Ryan (August 5, 2010); Thomas Gale (August 4, 2010); Thomas Husband (August 5, 2010); Jen Loos (August 4, 2010); Chris Mallery (August 5, 2010); Erin Logan (August 5, 2010); Christi Buck (August 6, 2010); Lyle Hinrichs (August 5, 2010); Matt McNamara (August 6, 2010); Sandra O'Neill (August 4, 2010); Owen Scheffler (August 6, 2010); Steve Groth (August 5, 2010); Lois Zemke (August 3, 2010); Jason Scheffler (August 5, 2010); and Katie Troe of Safe Wind in Freeborn County (August 3, 2010). *Accord, Hearing Transcript*, Vol. I at 24 – 28, 62 – 65; *Hearing Transcript*, Vol. III at 51 – 52.

[11] *Compare e.g.,* Post-Hearing Comments of AWA Goodhue, LLC at 6 (E-Docket No. 20108-53309-02) (("[i]t is important to stress that within the peer reviewed scientific literature there has not been a specific health condition documented or a disease (clinical entity) that has been found to be caused by wind turbines or more specifically to sound levels and frequencies generated by the operation of wind turbines.... The key point in the assessment of the science is that there are no epidemiological studies that show wind turbines cause illness.") with Hearing Exhibit B (Goodhue Wind Truth, an opponent of the Project, submits for the Commission's review 21 different periodicals addressing the health impacts of wind turbine operations); Prefiled Exhibits 202 – 223 (also denominated Goodhue Wind Truth's RJ-01 through RJ-23).

[12] *See,* Comments of Goodhue County Planning Advisory Commission (August 6, 2010); *Public Health Impacts of Wind Turbines*, at 25 (Minnesota Department of Health, 2009).

[13] *See, id* (citing *Night Noise Guidelines*, (World Health Organization, 2009)); *compare also,* Hearing Exhibits M, N, R, and AA.

Goodhue residents Bruce and Marie McNamara hired sound engineer and acoustician Richard James to conduct noise tests and provide testimony relating the AWA Goodhue project.[14] At the McNamara's request, Richard James, INCE, of E-Coustic Solutions, performed studies at test sites in Goodhue County between July 20 and 22, 2010.[15] Mr. James opined that the nighttime noise level at an isolated residential lot in Goodhue County was 20 to 25 decibels (dBA). According to AWA Goodhue's sound modeling studies, this same property will experience a background sound level of 43 dBA once the wind turbines are in place. Mr. James concluded that the sounds of nature that currently comprise the nighttime soundscape will be replaced by the sound of wind turbines.[16]

Moreover, Mr. James indicated that a 5 dBA increase in background sound levels is noticeable to people but unlikely to generate complaints. An increase of 10 dBA, however, often causes complaints from individuals.[17] If there is a background sound level of 45 to 50 dBA at non-participating properties, Mr. James predicts a set of severe health impacts. Accordingly, Mr. James urges more stringent noise standards than those called for by the MPCA or the MDH.[18]

The Applicant takes strong issue with Mr. James' calculations, methodologies, modeling techniques and the verifiability of his methods. It asserts that the average project-related noise level is quieter than the quietest average noise level in the community.[19]

The Applicant casts doubt on the merit of Mr. James' assessments when it argues that "Mr. James does not provide evidence of the measurements he claims to have made, does not provide an explanation of the monitoring methodology he used, and does not provide evidence concerning the quality and accuracy of the measurement equipment or if his work product has undergone a quality control review by a qualified environmental acoustician."[20]

John Meyer, a resident of Stewartville, Minnesota, argued that the noise concerns raised by those opposing the project are exaggerated. He claimed that the decibel measurements at the home sites are taken outside the residences and that the sound experienced inside these dwellings will be significantly less. He asserted the many residential air-conditioning units produce sound levels up to 76 decibels. Mr.

---

[14] Comments of Bruce and Marie McNamara (August 5, 2010).

[15] Comments of Richard R. James, E-Coustic Solutions (August 6, 2010).

[16] *Id.,* at 2.

[17] Comments of Richard R. James, at 2-3.

[18] *Id.* at 3; *Hearing Transcript*, Vol. IV at 26 – 30 and 32 – 34.

[19] *Hearing Transcript*, Vol. III at 75-79.

[20] *See,* Post-Hearing Comments of AWA Goodhue, LLC at 6.

Meyer argued that in the absence of conclusive scientific data as to the harmful effects of wind turbine noise, the Commission should approve the project.[21]

B. Shadow Flicker

Several residents of Goodhue County expressed concerns over the impacts of shadow flicker from the rotation of the turbine blades. For example, Owen Scheffler, of Zumbrota, Minnesota, maintains that 38 residences outside the permitted footprint for the project will experience some impacts of shadow flicker.[22]

Still others worried that the shadow flicker could cause headaches and dizziness whether they were inside or outside of their homes when light was reflected off of spinning turbine blades.[23]

The Applicant's projections are that at the latitude of the project, flicker will occur during less than 1 percent of the daylight hours.[24]

C. "Ice Throw" from Turbines

A number of residents expressed concern over the damage that could be caused if large chunks of ice were permitted to build up on turbine blades and were later thrown from the moving blades.[25]

For example, Douglas and Eileen Sommer criticized as unworkable AWA Goodhue's plan to "provide a means of alerting people coming within 300 meters (984 feet) for the potential of an icing condition near the turbine." The Sommers assert that there should be minimum setbacks on heavily traveled roads of between 1000 to 1500 feet. Included with their comments was a booklet published by turbine manufacturer General Electric, entitled "Ice Shedding and Ice Throw – Risk and Mitigation."[26]

Eager to protect snowmobilers in the event of ice throw, the Department of Natural Resources (DNR) recommends that any siting permit include a condition

---

[21] *See,* Comments of John Meyer (August 6, 2010); *Hearing Transcript*, Vol. I at 68 – 70.

[22] Comments of Owen (Tony) Scheffler, (August 6, 2010).

[23] *See, e.g.,* Comments of Chris Buck (July 16, 2010); Melissa Peteler (August 6, 2010); Deborah Lunde (August 2, 2010); Catherine Huisman (July 26, 2010); Bruce and Marie McNamara (August 5, 2010); Thomas Husband (August 5, 2010); Jen Loos (August 4, 2010); Christi Buck (August 6, 2010); Chad and Janet Ryan (August 6, 2010); Matt McNamara (August 6, 2010); and Lois Zemke (August 3, 2010).

[24] *See, Hearing Transcript*, Vol. II at 165; *Hearing Transcript*, Vol. IV at 68.

[25] *See, e.g.,* Comments of Melissa Peteler (August 6, 2010); Melody Ryan (August 5, 2010); Christi Buck (August 6, 2010); and Owen Scheffler (August 6, 2010); *Hearing Transcript*, Vol. I at 106; *Hearing Transcript*, Vol. II at 149; *Hearing Transcript*, Vol. III at 92 – 93; Hearing Exhibit C ("Accident & Safety" Tab).

[26] *See, e.g.,* Comments of Douglas and Eileen Sommer (August 4, 2010).

requiring either a setback from snowmobile trails in the area for safety purposes, or a requirement that the Applicant consult with DNR staff regarding trail locations.[27]

D. Impacts to Aircraft Radar and Air Traffic Control

Several residents expressed concern that rotation of large numbers of turbine blades would interfere with radar for military aircraft and air-traffic control. Particularly because the project footprint is not far from the Prairie Island Nuclear Facility, these individuals expressed the concern that untoward effects upon civilian and military radar presents a national security threat.[28]

Rochelle Nygaard, of Belle Creek Township, Minnesota, submitted the statement of Nancy Kalinowski, Vice President for System Operations Services with the Federal Aviation Administration. Ms. Kalinowski testified before the U.S. House Armed Services Committee in July of this year regarding the impact of wind farms on military readiness. Ms. Kalinowski testified that "[t]he clutter that is created by wind turbines can result in a complete loss of primary radar detection above a wind farm. When that clutter occurs, it appears at all altitudes, so simply directing the aircraft to a different altitude does not solve the problem."[29]

E. Access to Adjacent Homes by Medical Helicopters

Some Goodhue County residents expressed concern about the ability of emergency medical helicopters to fly and land within the project area.[30]

At the public hearing and thereafter, residents debated whether "Mayo One" helicopters could safely respond to medical emergencies occurring in the vicinity of placed turbines. Proponents and opponents of the project differed sharply as to whether the presence of wind turbines greatly increased the safety risks to helicopters, crew and passengers during such missions. Moreover, each side claimed that officials of the Mayo Clinic subscribed to their view as to the relative impacts turbines had on rescue missions.[31]

---

[27] *See,* Comments of Minnesota Department of Natural Resources (DNR) (August 5, 2010).

[28] *See, e.g.,* Hearing Exhibit L; Comments of Catherine Huisman (July 26, 2010); City of Goodhue – Schleck and Associates (August 6, 2010); Neal Stenlund (August 5, 2010); Mark Hinrichs (August 4, 2010); Lyle Hinrichs (August 5, 2010); Paul and Vicky Ryan (August 5, 2010); *Accord, Hearing Transcript*, Vol. I at 52 – 60; Hearing Exhibit C ("Radar Clutter" Tab).

[29] *See, e.g.,* Comments of Statement of Nancy Kalinowski (June 29, 2010) and Rochelle Nygaard (July 30, 2010); Hearing Exhibit C ("Accident & Safety" Tab).

[30] *See, e.g.,* Comments of Schleck and Associates (August 6, 2010); Susan Hinrichs (August 6, 2010); Kristi Rosenquist (August 6, 2010); Catherine Huisman (July 26, 2010).

[31] *See,* Comments of Steve Groth (August 6, 2010); *Hearing Transcript*, Vol. I at 71-72 and 95-96.

F. Impacts to Groundwater

Some commentators expressed concerns over the potential for groundwater contamination from the project and the run-off that might be created by establishing additional impervious surface adjacent to the turbines.[32]

For example, Erin Logan, a resident of Mineola Township, Minnesota, expressed concern that there would be significant impacts to groundwater when establishing the foundations for the proposed turbines. She asserts that the current siting of the project endangers one area that is highly-sensitive to groundwater contamination and four other areas that are very-highly-sensitive to groundwater contamination. Ms. Logan likewise disputed the accuracy of the Applicants estimate of the number of domestic wells within the project area.[33]

G. Impacts upon Wildlife

Several residents expressed concern over the impacts that wind turbines would have upon birds and wildlife in Goodhue County. They assert that the development of the project is likely to cause increased bird and bat mortality due to collisions with the turbines or their infrastructure; decreases in population due to loss and fragmentation of habitats; and disruption of migration flyways.[34] For example, Betty Olson, of Zumbrota, Minnesota, submitted several articles as to the effect that wind turbines have had on wildlife.[35]

The Minnesota Department of Natural Resources (DNR) reviewed the project's site permit application, environmental report, and draft site permit, and offered several comments. First, the DNR believes that AWA Goodhue has adequately addressed the project's proximity to Pioneer State Trail and has incorporated the appropriate wind access buffer. The DNR suggests, however, that AWA Goodhue seek to further clarify the permit language by adding state-owned trails to the list of public lands included in the condition labeled "III.C.4 Public Lands" or by including a special permit condition.[36]

Second, while mindful that AWA Goodhue proposes to avoid an area of significant biodiversity (in Township 112N Range 16W Section 36), the DNR

---

[32] *See, e.g.,* Comments of Catherine Huisman (July 26, 2010); Chris Mallery (August 5, 2010); and Dean Tiedemann (July 21, 2010).

[33] *See,* Comments of Erin Logan (August 1, 2010); *Hearing Transcript*, Vol. IV at 9 – 12.

[34] *See,* Comments of Jim Wiegand (July 24, 2010); *see also*, Melody Ryan (August 5, 2010); Citizens for Environmental Rights and Safety (July 25, 2010); Betty Olson (August 5, 2010); Chris Mallery (August 5, 2010); Daniel and Sheri Dowden, (August 5, 2010); Lyle Hinrichs (August 5, 2010); Paul and Vicky Ryan (August 5, 2010); Scott Logan (August 6, 2010); Lance Groth (August 5, 2010); and Kristi Rosenquist (August 6, 2010).

[35] *See,* Betty Olson (August 5, 2010).

[36] *See,* Comments of Minnesota Department of Natural Resources (DNR) (August 5, 2010).

recommends that avoidance of this area be included by the Commission as a condition of the permit.[37]

Likewise, the DNR urges AWA Goodhue to consult with it and the U.S. Fish and Wildlife Service upon completion of two pending surveys commissioned by AWA Goodhue: the Loggerhead Shrike Habitat Assessment and the Pre-Construction Avian Spring Migration Survey.[38]

Further, the DNR recommends that AWA Goodhue revise Condition 9 on page 4 of the draft site permit. DNR asserts that the Soil Erosion and Sediment Control Plan should include methods of preventing the introduction of invasive species into the project site.[39]

Finally, while commending AWA Goodhue for its pledge to notify the DNR whenever a large number of birds or bats are killed by collisions with the turbines, the DNR recommends that the site permit clearly establish the Applicant's reporting responsibilities. The DNR suggests that AWA Goodhue be obliged to make a report to the DNR in the event that five or more birds or bats are killed by the turbines within a single week.[40]

I. Levels of Stray Voltage

A number of residents expressed concern over the effects of stray voltage on dairy cattle.[41]

For example, Ann and David Buck, of Goodhue Township, Minnesota, own a large dairy farm within the footprint of the project. They relayed the story of an Ontario dairyman who lives near a wind farm. The dairyman notes that after a set of turbines were erected nearby, his livestock exhibited aggressive and erratic behavior, a decline in fertility, weight loss, and a high incidence of stillbirths. The dairyman believes that he was ultimately driven out of the dairy business by the health problems in his livestock. The Bucks predict that within weeks of completion of the Applicant's project, the milk production of their cows will drop significantly and the immune systems of their livestock will be compromised.[42]

---

[37] *Id.*

[38] *Id.*

[39] *Id.*

[40] *Id.*

[41] *See, e.g.,* Comments of Owen Scheffler (August 6, 2010); Lois Zemke (August 3, 2010); Chris Buck (July 16, 2010); Ted Keller (August 5, 2010); Nancy and Tim Hinrichs (July 31, 2010); Catherine Huisman (July 26, 2010); Randy Meyer (August 6, 2010); Chris Mallery (August 5, 2010); Susan Scheffler (August 6, 2010); and Brian and Sue Peters (August 5, 2010); Comments of State Representative Steve Drazkowski and State Representative Tim Kelly (August 6, 2010)*; see also*, *Hearing Transcript*, Vol. II at 38 – 41, 146 – 148; *Hearing Transcript*, Vol. III at 30 – 33; Hearing Exhibits HH and MM.

[42] *See,* Comments of Ann Buck (August 5, 2010).

II. Best Practices for Turbine Siting

A. Length of the Setbacks from Wind Turbines

Related to the concerns expressed about the externalities from turbine construction, placement and operation, is a debate over the length of the appropriate setbacks. Much of the public testimony and comments received centered on this question. While differing as to their recommendations, these commentators all urge the Commission to select a setback length in the siting permit that balances the rights of interests of those participating in the project with the rights and interests of those were are not participating in the project.

Mindful of both the Commission's *Order Establishing General Wind Permit Standards* provides for a minimum 500 foot setback from a home,[43] and the Applicant's proposal for a 1,500 foot setback from non-participating residences,[44] many commentators urged a still-larger setback of at least one-half mile.[45] For example, Bruce and Marie McNamara urged adoption of a one-half mile minimum setback on the grounds that the Minnesota Department of Health's White Paper *Public Health Impacts of Wind Turbines* found that low frequency noise from a wind turbine is not easily perceived beyond one-half mile.[46]

Supporters of the project argued that the Applicant's tripling of the minimum setback set forth in the Commission's *General Wind Permit Standards* is sufficient and strikes the right balance between the property rights of landowners and the interests of adjacent residents.[47]

B. Appropriateness of Turbines as a "Use" Within Agriculture Areas

Several commentators questioned whether wind turbines were the best – or an appropriate – use on agricultural lands. Thus, a key question that divided commentators during the public hearings was whether turbines "harvest the wind" in the

---

[43] *See, Order Establishing General Wind Permit Standards*, MPUC Docket No. M-07-1102 at 8 (E-Docket No. 4897855).

[44] *See,* Site Permit Application, Section 3.2.2.

[45] *See, Environmental Report*, *supra* at 20; Comments of Rick Conrad (July 4, 2010); Nancy and Tim Hinrichs (July 31, 2010); Citizens for Environmental Rights and Safety (July 25, 2010); Neal Stenlund (August 5, 2010); Ann Buck (August 6, 2010); David Buck (August 4, 2010); Chad and Janet Ryan (August 6, 2010); Paul and Vicky Ryan (August 5, 2010); Douglas and Eileen Sommer (August 4, 2010); Dave and Mary Jo O'Reilly (August 4, 2010); Rochelle Nygaard (August 2, 2010); Daniel Ohnstad (August 5, 2010); Bruce Trevis (August 5, 2010); Steve Groth (August 5, 2010); Jason Scheffler (August 5, 2010); Safe Wind in Freeborn County (August 3, 2010); and Dan and Jessica Lodermeier (August 6, 2010); *Hearing Transcript*, Vol. I at 85 – 91, 96 and 102; *Hearing Transcript*, Vol. III at 16, 65 and 95 – 96.

[46] *See*, Comments of Bruce and Marie McNamara (August 5, 2010); *Public Health Impacts of Wind Turbines*, at 25 (Minnesota Department of Health, 2009).

[47] *See, e.g., Hearing Transcript*, Vol. II at 67-68.

same way that heavy farm machinery harvests crops, or rather that wind turbines are better categorized as an "industrial" use.[48] The commentators part company over the meaning of "farming" in modern day.

This debate manifests itself in the record in a number of different ways, but perhaps none more sharply than as to the residents' competing interests in the scenery along and above the horizon. Among the most difficult policy questions raised during the proceedings is the extent to which a landowner in an agricultural area has an interest in the "view shed" that lies above neighboring properties. Several commentators noted that they reside in Goodhue County precisely because of its rolling hills and picturesque landscapes – and the investments that they have made in their homes would be harmed by the siting of wind turbines along the horizon.[49] Still other commentators argued that the ability to access the wind above a particular parcel is a central part of the land's productive potential and its value.[50]

State Representatives Steve Drazkowski and Tim Kelly urge the Commission to sharpen this question still further by focusing on the special features of agricultural uses within the Project Area. They draw a distinction between Goodhue County and the areas in western and southern Minnesota that have successfully hosted wind farms. They argue that western and southern Minnesota is better suited to wind farms because it has flat terrain, is dominated by large crop farming operations, is not densely populated, and has fewer livestock operations. Conversely, Goodhue County has rolling hills and bluffs, is more densely populated per square mile and is home to many dairy farms.[51]

---

[48] *See, Environmental Report*, *In the Matter of the Application of Goodhue Wind LLC for a Certificate of Need for a 78 MW Wind Project and Associated Facilities in Goodhue County*, MPUC Docket No. CN-09-1186 at 20 (E-Docket No. 20106-52055-01); Comments of Dean Tiedemann, Zumbrota Township Board (July 21 and 27, 2010); Melody Ryan (August 5, 2010); Citizens for Environmental Rights and Safety (July 25, 2010); Rochelle Nygaard (July 22, 2010); Schleck and Associates for Ann Buck and Steve Groth (August 6, 2010); Dave and Mary Jo O'Reilly (August 4, 2010); Sandra O'Neill (August 3, 2010); Lorry Hispert (August 6, 2010); Neal Stenlund (August 5, 2010); and Rochelle Thomford (August 3, 2010); *Hearing Transcript*, Vol. I at 44, 68, 75; *Hearing Transcript*, Vol. II at 79-80; *Hearing Transcript*, Vol. III at 21 and 50; *Hearing Transcript*, Vol. IV at 64 – 66 and 119 – 120.

[49] *See,* Comments of Barbara Stussy (July 30, 2010); Deborah Lunde (August 2, 2010); Melody Ryan (August 5, 2010); Daniel and Sheri Dowden (August 5, 2010); Dave and Mary Jo O'Reilly (August 4, 2010); Sandra O'Neill (August 3, 2010); and Kristi Rosenquist (August 6, 2010); *Hearing Transcript*, Vol. I at 78.

[50] *See, e.g., Transcript*, Vol. I at 68; *Hearing Transcript*, Vol. II at 79-80.

[51] *See,* Comments of Rep. Steve Drazkowski and Rep. Tim Kelly (August 6, 2010). *See also,* Comments of Deborah Lunde (August 2, 2010); Melissa Peteler (August 6, 2010); Martin O'Connor (August 6, 2010); Susan Hinrichs (August 6, 2010); Catherine Friend (August 6, 2010); Citizens for Environmental Rights and Safety (July 25, 2010); Neal Stenlund (August 5, 2010); Ann Buck (August 6, 2010); Rochelle Nygaard (July 22, 2010); David Buck (August 4, 2010); Bill O'Reilly (July 26, 2010); Randy and Deb Tutewohl (August 2, 2010); Paul and Vicky Ryan (August 5, 2010); Larry Pederson (August 6, 2010); Lois Zemke (August 3, 2010); and Gloria Agenten (August 3, 2010).

A different, but related question is whether the installation of turbines unreasonably interferes with the expectations of adjacent cities. For example, in August of 2009, the City of Goodhue passed a Resolution memorializing its opposition to "any wind tower facilities within two miles of the limits of the City of Goodhue."[52] Similarly, in January of 2010, the City Council of the City of Zumbrota urged the Commission to "restrict the project area to two miles from the Zumbrota Corporate Limit."[53] City officials, and others, assert that such zones without wind turbines are needed so as to permit later orderly development by these same cities.[54] For its part, the Applicant asserts that the Cities' concerns over land for future development are not well grounded – because "less than 50 acres of farmland within the over 32,000 acre boundary are estimated to be permanently impacted by the Project."[55]

Lastly, Erin Logan, a resident of Mineola Township, expressed concerned that the proposed project will utilize more prime farmland than is allowed under the Prime Farmland Exclusion. She urges the Commission to inquire into the number of prime farmland acres impacted by the project.[56] As to this point, the Applicant asserts that the cited exclusion does not apply to the siting of Large Wind Energy Conversion Systems.[57]

C. Impacts to Property Values

A number of those participating in the public hearing, and submitting comments thereafter, expressed concerns over the impact of the wind farm project on property values in Goodhue County. State Representatives Steve Drazkowski and Tim Kellly, for example, noted that their discussions with local real estate agents, as well as landowners who have listed their property for sale, lead them to believe that property values will be negatively affected by the installation of the wind farm project.[58] Some commentators suggested that land values could drop by 30 percent or more.[59]

---

[52] *See, In the Matter of the Commission Investigation into Large Wind Energy Conversion Systems Permit Conditions on Setbacks and the Minnesota Department of Health Environmental Health Division's White Paper on Public Health Impacts of Wind Turbines*, MPUC Docket No. CI-09-845 (E-Docket No. 200910-43060-01).

[53] *See, In the Matter of the Amended Application of Goodhue Wind, LLC, for a Large Wind Energy Conversion System (LWECS) Site Permit for the 78 megawatt (MW) Goodhue Wind Project in Goodhue County*, MPUC Docket No. WS-08-1233 (E-Docket No. 20104-48870-01).

[54] *See,* Comments of Schleck and Associates on behalf of the City of Goodhue (August 6, 2010). *See also,* Comments of Susan Hinrichs (August 6, 2010); Barbara Stussy (August 5, 2010); Daniel and Sheri Dowden (August 5, 2010); and Matt McNamara (August 6, 2010).

[55] *See,* Post-Hearing Comments of AWA Goodhue, LLC at 19.

[56] *See,* Minn. R. 7850.0400, subd. 4; *Hearing Transcript*, Vol. II at 133.

[57] *See,* Post-Hearing Comments of AWA Goodhue, LLC at 20.

[58] *See, e.g.,* Comments of State Representative Steve Drazkowski and State Representative Tim Kelly (August 6, 2010). *See also*, Chris Buck (July 16, 2010); Melissa Peteler (August 6, 2010); Susan Hinrichs (August 6, 2010); Melody Ryan (August 5, 2010); Catherine Friend (August 6, 2010); Bruce and Marie McNamara (August 5, 2010); Thomas Husband (August 5, 2010); Barbara Stussy (August 6, 2010); Ben and Angela Olsen (August 6, 2010); Chris Mallery (August 5, 2010); Daniel and Sheri Dowden (August 5,

Schleck and Associates, appearing on behalf of Steve Groth and Ann Buck, suggested that AWA Goodhue be required to buy Property Value Guaranty Insurance for the non-participating property owners whose property values will be negatively affected by the project.[60]

III. Concerns as to this Application

A. Demands for Electric Energy

A number of Goodhue County residents questioned where there was a need for the electric energy that would be produced by the Project. These commentators cast doubt on whether the project was needed to meet the needs of Minnesota consumers.[61]

For example, Greg Soule, of Dennison, Minnesota, asserted both that Xcel Energy has overestimated its peak demand in recent years and that amounts of its annual peak demand for energy has declined in recent years. From this, Mr. Soule urges the Commission to conclude that projections describing a need for additional capacity are overstated – or alternatively, that generating facilities in Goodhue County are not needed to meet future demand.[62]

Gary Luebke, of Rosemount, Minnesota, took strong issue with the claim that additional electricity generating capacity is not needed in Minnesota. Pointing to a 1 percent per year increase in demand that is projected by the U.S. Department of Energy, he concludes that "12 Prairie Islands," "27 Big Stone coal plants" or "154 Goodhue Wind Projects" are needed to meet the forecasted demand.[63]

B. C-BED Project Designation

Some commentators questioned whether the proposed project was properly characterized as a Community Based Energy Development Project under Minnesota Statutes Chapter 216B. Characterizing the proposed 78 megawatt generating capacity

---

2010); Christi Buck (August 6, 2010); Lawrence Thomforde (August 1, 2010); Rochelle Nygaard (August 2, 2010); Owen Scheffler, (August 6, 2010); Gloria Agenten (August 3, 2010); Jean Schulte (August 6, 2010); and Kristi Rosenquist (August 6, 2010); *Hearing Transcript*, Vol. I at 78 and 104.

[59] *See, Hearing Transcript*, Vol. I at 38-41 and 104; *Hearing Transcript*, Vol. II at 91-92; Hearing Exhibit C ("Real Estate" Tab).

[60] *See, e.g.,* Comments of Schleck and Associates (August 6, 2010).

[61] *See,* Comments of Susan Hinrichs (August 6, 2010); Jason Tudor (August 6, 2010); Catherine Huisman (July 26, 2010); Neal Stenlund (August 5, 2010); Mark Hinrichs (August 4, 2010); Mary Brickzin-Gale (August 6, 2010); and Willis Scharpen (August 5, 2010); *Hearing Transcript*, Vol. II at 98-100; *Hearing Transcript*, Vol. III at 26 and 43 – 44.

[62] *See, e.g., Hearing Transcript*, Vol. IV at 58 – 66; Hearing Exhibit CCC; *compare also,* Hearing Exhibits 00 and YY.

[63] *See, e.g., Hearing Transcript*, Vol. I at 73-74.

as "unprecedented" for a C-BED project, State Representatives Steve Drazkowski and Tim Kellly urge the Commission to "strongly consider limiting the use of the C-BED statute for industrial wind developments significantly above the 22 megawatt size …."[64]

Still other commentators focused on the organization of AWA Goodhue, and whether its ownership, financing and managerial direction is drawn from surrounding communities.[65]

Responding to the critique, the proponents argue that not only does the Project meet the statutory requirements for a C-BED designation but that it has been designated as "the most cost-effective C-BED resource available to Xcel Energy."[66]

C. Post-Installation Remedies for Damages

Some residents of Goodhue County questioned whether there would be effective remedies for damages they incur due to the installation of the project. These individuals assert that AWA Goodhue or the State of Minnesota should provide assistance those who are adversely affected by turbine noise, shadow flicker or diminutions in the value of their land.[67]

For example, Robert Weiss, General Manager of Hector Communications, commented on behalf of Sleepy Eye Telephone Company. Sleepy Eye Telephone Company has buried copper cables and fiber optic cables in the right-of-ways of Goodhue County roads. The company is concerned that the transmission lines carrying the electricity generated by the wind turbines may create electrical interference with the underground cables, rendering them unusable. Mr. Weiss asserted that a similar situation occurred near Lake Benton, Minnesota, at the Buffalo Ridge wind facility. The company contends that any costs to mitigate or eliminate noise problems on the company's buried cables that can be linked to the wind project should be borne by AWA Goodhue.[68]

---

[64] *See, e.g.,* Comments of State Representative Steve Drazkowski and State Representative Tim Kelly (August 6, 2010).

[65] *See, e.g., Hearing Transcript*, Vol. III at 71; *Hearing Transcript*, Vol. IV at 42 –43 and 95 – 96; Hearing Exhibits 00, YY and ZZ.

[66] *See, e.g., Hearing Transcript*, Vol. I at 74; Post-Hearing Comments of AWA Goodhue, LLC at 4.

[67] *See,* Comments of Christi Buck (August 6, 2010); Chris Buck (July 16, 2010); Larry and Barb Lexvold (August 6, 2010); Thomas Gale (August 4, 2010); Bruce and Marie McNamara (August 5, 2010); and Gloria Agenten (August 3, 2010); *Hearing Transcript*, Vol. III at 89 and 118.

[68] *See,* Comments of Robert Weiss of Hector Communications (August 3, 2010).

IV. Key Claims of the Project's Proponents

Proponents of the project advance four key arguments in support of the granting the requested permits. They assert that the Project: (1) assists Minnesota in achieving its renewable energy goals;[69] (2) contributes to the diversity of state energy sources;[70] (3) provides needed stimulus to the local economy;[71] and (4) reflects the best available science.[72] State Senator Steve Murphy touched upon each of these contentions when he testified at the June 21 public hearing. He remarked:

> Now, in our area, we already have a nuclear power plant, one of the best run nuclear power plants any place on the planet. We have a garbage-to-energy project, an RDF facility, one of best run one any place in the state. We also have energy produced by using natural gas. Now, about the only energy production that we don't have in this area … is coal and wind. Quite frankly, I don't want coal at all and I think wind is a good resource and it fits with the energy diversity of this area.
>
> The other thing, Your Honor, and I think one of the very important things, is that this means $20 million to the local economy. Now, there's not an economy, there's not a town or a township or a county any place in Minnesota or the United States that couldn't use some windmills generating $20 million of revenue for the local community. Now, is that the sole reason to support this? Absolutely not….
>
> Goodhue Wind wants to put forward the best project possible. That's why they've agreed voluntarily to double their setback limits, they're willing to sit down and talk with individual landowners. This is good project, Your Honor, it needs to continue to move forward ….[73]

---

[69] *See,* Comments of Councilman Michael Wojcik, (July 31, 2010); Michael from New Haven Township (July 24, 2010); *Hearing Transcript*, Vol. I 66 – 69; *Hearing Transcript*, Vol. II at 78.

[70] *See,* Comments of Larry and Barb Lexvold (August 6, 2010).

[71] *See,* Comments of Lisa Heggedahl (August 6, 2010); Tim Penny and the Southern Minnesota Initiative Foundation (August 2, 2010); Dean and Sandy Runde (August 6, 2010); *Hearing Transcript*, Vol. I at 63 – 69; *Hearing Transcript*, Vol. II at 78.

[72] *See,* Comments of _ ; *Hearing Transcript*, Vol. II at 79.

[73] *See, Hearing Transcript*, Vol. I at 35 – 36; *Hearing Transcript*, Vol. II at 79.

Pursuant to the Commission's December 30, 2009 Order to conduct at least one public hearing and to ensure the adequate development of the hearing record, this report is respectfully submitted.

Dated: September 7, 2010

/s/ Eric L. Lipman

ERIC L. LIPMAN
Administrative Law Judge

Reported: Shaddix and Associates
Transcripts Prepared: Four Volumes

NOTICE

This report contains a summary of public testimony. It is not a final decision. Pursuant to Minn. R. 7849.5720, the Commission will make the final determination of the matter within 60 days after the receipt of the record from the administrative law judge.