

APPENDIX A:

ORDER DENYING MOTIONS FOR RECONSIDERATION AND REHEARING

DATED DECEMBER 20, 2013

SERVICE DATE
Dec 20, 2013

PSC REF#:194798

Public Service Commission of Wisconsin
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PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

ORDER DENYING MOTIONS FOR RECONSIDERATION AND REHEARING

This is the Order in the Town of Forest (Town) motions for reconsideration and rehearing. The motions are denied.

Introduction

On October 25, 2013, the Commission issued a *Final Decision on Reopening* ([PSC REF#: 192339](#)) in this proceeding granting a Certificate of Public Convenience and Necessity (CPCN) to Highland Wind Farm, LLC (Highland), the applicant in this docket. The *Final Decision on Reopening* superseded the *Final Decision* ([PSC REF#: 182254](#)) issued on March 15, 2013, which declined to grant a CPCN to Highland.

On November 14, 2013, Intervenor Town of Forest (Town) filed a single document captioned Motions for Reconsideration and Rehearing ([PSC REF#: 193519](#)). Highland filed a Response to the Town's Motions on November 21, 2013. ([PSC REF#: 193832](#).) The Motions were timely filed under Wis. Stat. § 227.49 and the Response was timely filed under the Second Prehearing Conference Memorandum ([PSC REF#: 185730](#)). No other party filed a response to the Motions.

Basis for Granting a Rehearing in a Proceeding

Wisconsin Stat. § 227.49(3) provides that a petition for rehearing will only be granted on the basis of:

- (a) Some material error of law.
- (b) Some material error of fact.
- (c) The discovery of new evidence sufficiently strong to reverse or modify the order, and which could not have been previously discovered by due diligence.

The Town also suggests the Commission may reopen the docket on its own motion under Wis. Stat. § 196.39(1). Wisconsin Stat. § 196.39(1) provides that the Commission “may reopen any case following the issuance of an order in the case, for any reason.”

Under Wis. Stat. § 227.49(5), the Commission has 30 days to dispose of the Motions. Here, the deadline is Monday, December 16, 2013. If the Commission does not issue an order by that date, the Motions are deemed denied. There are no time constraints for a Commission decision under Wis. Stat. § 196.39(1).

The Commission considered this matter at its open meeting on December 13, 2013.

Opinion

The Town raises a variety of issues in support of its motions. None of them are a sufficient basis for reconsideration or rehearing.

First, the Town argues the Commission should have required a second supplemental environmental assessment because the reopened proceeding introduced the concept of curtailment and that curtailment changes the potential effect of the project. The reopened proceeding did not, despite the Town’s claims to the contrary, introduce the concept of curtailment. The turbines proposed in this docket have had the ability to curtail since the beginning. Moreover, the curtailment plan is designed to lessen the noise impact of the project

and does not create new or heightened potential impacts. The original environmental assessment fully evaluated and described the potential noise effects of the project, and the reopened proceeding did not present evidence that significantly affected those impacts, triggering the need for a supplemental environmental assessment.

Second, the Town argues the Commission should have required an environmental impact statement for the project. The findings in the environmental assessment were not sufficient to warrant preparation of an environmental impact statement. The forty-page environmental assessment fully and adequately analyzed a host of issues related to the project, including impacts to aesthetics, agricultural resources, airports, archaeological and historic resources, community impacts, decommissioning, electromagnetic fields, land use and land cover, lighting, noise, property values, television, radio and telecommunications interference, recreation, roads, safety and emergency plans, shadow flicker, shared revenue and other local economic benefits, waterways and wetlands, wildlife, and woods. Further, the environmental assessment was supplemented to include results of the infrasound low frequency noise measurements that were taken at the Shirley Wind Farm. The environmental assessment was appropriate.

Third, the Town argues the Commission improperly excluded evidence of alternative turbines. The administrative law judge properly excluded this evidence as beyond the scope of the reopened proceeding and, on interlocutory appeal, this Commission affirmed that ruling. The excluded evidence did not address the issues relevant to the reopened proceeding because it did not relate to whether Highland's proposed project could meet the noise standards, the purpose of the reopened proceeding.

The Town also argues that Wis. Stat. § 196.491(3)(d)3., the wholesale merchant exception, should not keep its alternative turbine evidence out of the case. The Commission does not agree. The smaller turbines sought by the Town would clearly be alternative engineering factors excluded from consideration in a merchant plant CPCN application. In addition, the general requirement to consider alternatives in Wis. Stat. § 1.11 should not take precedence over the more specific language in the wholesale merchant exception. In this docket, the Commission did consider alternative turbine locations and alternative turbine models when reviewing the application, thereby satisfying the alternatives analysis required by Wis. Stat. § 1.11.

Fourth, the Town argues the Commission improperly allowed Highland to consider alternatives in the reopened proceeding. Highland's curtailment plan was not an alternative to the original design; the proposed turbines, from the start of the proceeding, had this ability.

The Town also attempts to argue that because the *Final Decision on Reopening* authorized using the Siemens SWT 2.3 or another turbine with an equivalent noise profile, the Commission somehow opened the door to allow the Town to again present its proposal for small turbines. However, that language in the *Final Decision on Reopening* is not there to allow Highland to use larger or smaller turbines than the Siemens model cited, but rather to allow Highland to use another turbine, provided that the noise specifications are similar to the Siemens SWT 2.3. This would allow Highland, for example, to use an upgraded model of this turbine, should the manufacturer put one on the market. It also provides Highland with some negotiating leverage when dealing with the manufacturer so that Highland is not bound to use the Siemens SWT 2.3 and only that model.

Fifth, the Town argues the Commission did not give appropriate deference to the Town's interpretation of its own land use and development plan. This argument is not persuasive. The Town's land use plan clearly supports renewable energy projects, and the land use plan does not limit its support to only small projects as some in these proceedings contended. The Commission's original determination that the wind farm will fit in and complement how the land in the area is used and planned to be used by the Town is appropriate.

Sixth, the Town argues the Commission should reopen the proceeding to take in new evidence of its interpretation of the land use plan, specifically a draft land use plan prepared after the issuance of the *Final Decision on Reopening*. The Town argues this new draft land use plan should be allowed into the record, and the Commission should consider it as the discovery of new evidence which could not have been previously discovered by due diligence. However a draft land use plan prepared after issuance of the *Final Decision on Reopening* does not constitute newly-discovered evidence sufficient to rehear or reopen this proceeding. An administrative proceeding would never have finality if a proceeding could be reopened because of this.

Finally, the Town argues the Commission made a material error of law and fact in finding that the Certificate of Public Convenience and Necessity would not be against the public interest. The record in this proceeding is replete with evidence supporting the Commission's determination that the project is in the public interest.

For these reason, the Town does not satisfy the requirements of Wis. Stat. § 227.49(3) to require a reopening or rehearing in this proceeding. Similarly, the Commission does not reopen this proceeding on its own motion under Wis. Stat. § 196.39(1). Commissioner Nowak, while

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agreeing that the Wis. Stat. § 227.49(3) criteria are not met, would reopen the proceeding under Wis. Stat. § 196.39(1) for the same reasons stated in her *Dissent to the Final Decision on Reopening*.

The Motions are denied.

Dated at Madison, Wisconsin, this 20th day of December, 2013.

By the Commission:



Sandra J. Paske
Secretary to the Commission

JL:cmk:DL:00896232

APPENDIX B:

FINAL DECISION ON REOPENING

DATED OCTOBER 25, 2013

SERVICE DATE
Oct 25, 2013

PSC REF#:192339

Public Service Commission of Wisconsin
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PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

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FINAL DECISION ON REOPENING

On December 19, 2011, pursuant to Wis. Stat. § 196.491 and Wis. Admin. Code chs. PSC 4 and 111, Highland Wind Farm, LLC (Highland), filed with the Commission an application for a Certificate of Public Convenience and Necessity (CPCN) to construct a new wind electric generation facility, to be located in the towns of Forest and Cylon, St. Croix County, Wisconsin. The project includes construction of up to 44 wind electric generating turbines, depending on the turbine model selected, and associated facilities to interconnect with the existing Northern States Power Company-Wisconsin (NSPW) electric transmission system in the area.

The CPCN application is APPROVED subject to conditions and as modified by this Final Decision on Reopening.

Introduction

By Final Decision dated March 15, 2013, the Commission initially denied Highland's CPCN application. The Commission concluded, based upon the record evidence from the initial proceeding, that the design of the proposed project was not in the public interest, and would create undue adverse impacts on public health and welfare and individual hardships, because the available modeling in the record indicated that there were multiple non-participating residences where Highland had failed to demonstrate compliance with the Wis. Admin. Code

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§ PSC 128.14(3) nighttime audible noise limit of 45 dBA (A-weighted decibels). (Final Decision at 3, 8, [PSC REF#: 182254](#).) The Commission determined that Highland had not provided modeling using the most conservative modeling assumptions that demonstrated that under planned operating conditions the project could comply with a nighttime audible noise limit of 45 dBA. (*Id.*, at 10.)

The Commission indicated in its Final Decision that “Highland may either request reopening of the case under Wis. Stat. § 196.39, petition for rehearing under Wis. Stat. § 227.49, or file a new application under Wis. Stat. § 196.491 if and when it can demonstrate through sound modeling using a ground absorption coefficient of 0.0 that the project as designed and operated will not, based upon model results, have any non-participating residences that exceed the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA.” (*Id.*)

On April 4, 2013, Highland filed a Petition to Reopen, or in the Alternative, for Rehearing (Petition). ([PSC REF#: 183159](#).) By Order dated May 14, 2013, the Commission granted Highland’s Petition and reopened the proceeding under Wis. Stat. § 196.39(1) for the limited purpose of determining if the project can comply with the noise standards in Wis. Admin. Code ch. PSC 128. ([PSC REF#: 184812](#).) The Commission’s Final Decision in this docket, dated March 15, 2013, describes the procedural history of the initial proceeding in this docket. (Final Decision at 2-3, [PSC REF#: 182254](#).) Subsequent to the Commission’s Order reopening the docket, a prehearing conference was held on May 13, 2013. Intervenors in the initial proceeding, Clean Wisconsin (Clean WI), Forest Voice, Inc. (Forest Voice), RENEW Wisconsin (RENEW), and the town of Forest (Forest), all continued to intervene in the reopened proceeding.

The Commission held technical and public hearing sessions in Madison on August 14 and 15, 2013. During the technical sessions, expert witnesses offered testimony and exhibits on behalf of Highland, Forest Voice, and Forest. The Commission conducted its reopened hearings as a Class 1 contested case proceeding. During the public hearing sessions, the Commission accepted both oral and written testimony from members of the public. All written public comments received in response to the Commission's Notice of Hearing in the reopened proceeding, including those received through the Commission's web comment form, written comments submitted by U.S. mail, and written comments submitted during the public hearing sessions, are included in the record before the Commission in this proceeding.

The issues for the reopened hearing, as listed in the Commission's Order to Modify Second Prehearing Conference Memorandum, were:

1. Can the project comply with the noise standards in Wis. Admin. Code ch. PSC 128?
2. Can the project achieve a 40 dBA nighttime noise standard at the six residences identified in the existing record as occupied by persons with special needs?
3. Will the proposed curtailment plan ensure compliance with the noise standards in Wis. Admin. Code ch. PSC 128 and a 40 dBA noise standard for (i) between the hours of 10 p.m. and 6 a.m., and (ii) for 24 hours (daytime and nighttime hours) at the six residences identified in the existing record as occupied by persons with special needs?
4. What post-construction sound testing protocols and compliance procedures are necessary to ensure ongoing compliance with the noise standards in Wis. Admin. Code ch. PSC 128 and a 40 dBA noise standard for (i) between the hours of 10 p.m. and 6 a.m., and (ii) for 24 hours (daytime and nighttime hours) at the six residences identified in the existing record as occupied by persons with special needs?

In addition, in briefs the parties were also directed to address the following:

1. Will the project, as modified to meet the noise standards described in Issues A.1 and A.2 remain within the scope of Commission jurisdiction under Wis. Stat. § 196.491(3)?

2. Does Wis. Admin. Code ch. PSC 128 allow curtailment: (i) as a design factor; (ii) only if the project is found to be out of compliance after it is built but not during the project planning phase; or (iii) at any time?

(Order to Modify Second Prehearing Conference Memorandum, [PSC REF#: 186666](#).)

Initial and reply briefs in the reopened proceeding were filed on September 3 and September 10, 2013, respectively. Initial briefs in opposition to the project were filed by Forest Voice and Forest. Highland filed an initial brief in support of the project. Reply briefs were filed by Forest Voice, Forest, and Highland. The Commission discussed the record in this matter at its open meeting of September 26, 2013.

Findings of Fact

1. Highland is proposing to construct a merchant plant, as defined in Wis. Stat. § 196.491(1)(w). Highland will not provide retail electric service, nor is it a public utility or an affiliate of a public utility.
2. Determining whether energy conservation, renewable resources, or other energy priorities listed in Wis. Stat. §§ 1.12 and 196.025, or their combination, will be cost-effective alternatives to Highland's proposed facility is not required when the project under consideration is a merchant plant, because the CPCN applicant need not submit information about the cost of the proposed project. The proposed project is a wind energy electric generating facility, it fits within the second highest priority in the Energy Priorities Law, Wis. Stat. §§ 1.12 and 196.025(1), and there is no record evidence demonstrating that energy conservation or efficiency would be cost-effective alternatives.
3. It is reasonable to require that the proposed project comply with the noise limits set forth in Wis. Admin. Code § PSC 128.14(3) as modified by this Final Decision on Reopening.

4. In the reopened proceeding, Highland submitted sound level modeling and a proposed curtailment plan that demonstrates, using the most conservative modeling assumptions, that the proposed project will meet applicable noise limits, including the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA.

5. The Highland project, as modified by this Final Decision on Reopening, is reasonable and in the public interest after considering alternative locations, individual hardships, safety, reliability, and environmental factors.

6. The Highland project, as modified by this Final Decision on Reopening, will not have undue adverse impact on other environmental values such as, but not limited to, ecological balance, public health and welfare, historic sites, geological formations, the aesthetics of land and water, and recreational use.

7. The Highland project, as modified by this Final Decision on Reopening, will not unreasonably interfere with orderly land use and development plans for the area involved.

8. The Highland project, as modified by this Final Decision on Reopening, will not have a material adverse impact on competition in the relevant wholesale electric service market.

9. A brownfield site for the project is not practicable.

Conclusions of Law

1. The Commission has jurisdiction under Wis. Stat. §§ 1.11, 1.12, 44.40, 196.02, 196.025, 196.39, 196.395, and 196.491 to issue this Final Decision on Reopening.

2. The Commission must consider, under Wis. Stat. § 196.491(3)(dg) and Wis. Admin. Code § PSC 128.02(3), whether the Highland project is consistent with the standards set

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forth in Wis. Admin. Code ch. PSC 128 when reviewing an application filed on or after March 1, 2011.

3. The Commission's Environmental Assessment (EA) and Supplemental EA comply with Wis. Stat. § 1.11.

Opinion

Project Description

Highland proposes to construct a new wind electric generation facility in the towns of Forest and Cylon, in northeast St. Croix County, Wisconsin. The project would include up to 44 wind turbines with an electric generating capacity of up to 102.5 megawatts (MW), depending on the turbine model selected. In its Petition, Highland agreed to eliminate the loudest of the three turbine models under consideration for the proposed project. (Petition at 19, [PSC REF#: 183159](#).) Because of this, the project would include up to 44 wind turbines with an electric generating capacity of up to 101.2 MW, depending on the turbine model selected.

The proposed facility would consist of the wind turbines, access roads to the turbines, an underground 34.5 kilovolt (kV) cable system to collect the power produced at each turbine, a new interconnection substation to connect the facility to the existing electric transmission system, an operations and maintenance (O&M) building, and associated facilities. All of the wind turbines would be located in the town of Forest. A portion of the electric collector circuits and the interconnection substation would be located in the town of Cylon.

The project area consists of about 26,500 acres of predominately agricultural land. Highland holds agreements with landowners for about 6,200 acres within the project area upon

which project facilities could be located. The community of Forest lies in the southwestern corner of the project area.

Highland now proposes to use one of two turbine models for the project. The overall height of the turbines would be between 491 and 497 feet, depending on the turbine selected. The turbine models, generating capacity, number required, and total facility generating capacity are included in Table 1, below.

Table 1 Wind turbine models under consideration

| Turbine Model | Turbine Nameplate Capacity | Required Number of Turbines | Project Nameplate Capacity |
|----------------------|-----------------------------------|------------------------------------|-----------------------------------|
| Nordex N117 | 2.4 MW | 42 | 100.8 MW |
| Siemens SWT-2.3 | 2.3 MW | 44 | 101.2 MW |

Highland has identified 41 primary and 11 alternate sites in the project area capable of supporting wind turbine installations. Highland states that these sites have adequate wind resources and are acceptable considering environmental and other concerns.

In its CPCN application, Highland provided a proposed project layout consisting of the preferred turbine sites for each of the wind turbine models under consideration. In response to concerns expressed by residents of the project area at the public hearing during the initial proceeding, Highland provided revised project layouts, which use alternate turbine sites instead of some of Highland's original preferred sites. These revised project layouts include 42 and 44 turbines for the Nordex N117 and Siemens SWT-2.3 turbines, respectively. Highland made no changes to the layout of the proposed project during the reopened proceeding.

Jurisdiction

In the reopened proceeding, the Commission directed the parties to address whether the proposed project is within the scope of the Commission's jurisdiction under Wis. Stat.

§ 196.491(3). The Wisconsin Statutes require that a person obtain a CPCN before constructing a "large electric generating facility." Wis. Stat. §196.491(3)(a)1. A "large electric generating facility" is defined as "electric generating equipment and associated facilities designed for nominal operation at a capacity of 100 megawatts or more." Wis. Stat. § 196.491(1)(g).

Forest and Forest Voice challenge the Commission's jurisdiction based upon an assumption that permanent curtailment will reduce the effective capacity of the proposed project below 100 MW. The Commission finds these challenges to be without merit. The Commission has used nameplate capacity to determine the size of power plants for many years.¹ It is undisputed that the proposed project has a nameplate capacity greater than 100 MW. This practice is consistent with the plain language of the statute. While the statute does not use the term "nameplate" in defining the size of a large electric generating facility, the phrase "designed for nominal operation" indicates that it is not the actual level of operation that is relevant. Instead, it is what the project is "designed for" that controls. Further, the term "nominal operation" in effect means not real or actual operation, but rather the "approximate, rated" operation. Webster's Third New International Dictionary (unabridged) (1971), p. 1534. Webster's provides the following definitions of the term "nominal": "of, relating to, being, or consisting in a name;" "existing or being something in name or form but usually not in reality;

¹ Further, the Commission's own instructions to CPCN applicants is for them to provide the rated capacity of the proposed project. See Application Filing Requirements for Wind Energy Projects in Wisconsin, Version 5A, February 2012, at 1.0 (<http://psc.wi.gov/utilityinfo/electric/construction/documents/windPower.pdf>).

distinguished from *actual*,” and “approximate, rated.” [Footnote omitted.] Thus the plain meaning of the statutory language anticipates jurisdiction based upon design values established by the facility’s rating, not an estimate of power production based on assumptions of actual operation. The Commission has jurisdiction because regardless of which turbine model is used, it is undisputed that the proposed project is designed and rated to exceed 100 MW.

The Intervenors’ challenge to the Commission’s jurisdiction is also unavailing and unpersuasive because it is based upon a faulty factual premise. Intervenors assume that curtailment will be required and that any curtailment would be permanent. Based upon the modeling provided in the reopened proceeding, if the proposed project employs curtailment as a mitigation methodology, no curtailment will be required during the day because the modeling demonstrates that the project meets the 50 dBA daytime requirement. As such, during the day, the proposed project at full power will be over 100 MW in both rated capacity and actual operation. During the evening hours, the modeling suggests that some curtailment may be necessary and could reduce the actual generating facility output to below 100 MW. However, loss of jurisdiction for a plant designed to operate over 100 MW at full output except during limited curtailment periods is an absurd result. That is akin to a public utility taking the position that the Commission has no CPCN jurisdiction over a 100 MW combustion turbine peaking plant because it will not be operating at 100 MW all the time.

For these reasons, the Commission has jurisdiction over this project.

Energy Priorities Law

When reviewing a CPCN application, the Commission considers Wis. Stat. §§ 1.12 and 196.025(1), known as the Energy Priorities Law, which establishes the preferred means of meeting Wisconsin’s energy demands. The Energy Priorities Law creates the following priorities:

1.12 State energy policy. (4) PRIORITIES. In meeting energy demands, the policy of the state is that, to the extent cost-effective and technically feasible, options be considered based on the following priorities, in the order listed:

- (a) Energy conservation and efficiency.
- (b) Noncombustible renewable energy resources.
- (c) Combustible renewable energy resources.
- (d) Nonrenewable combustible energy resources, in the order listed:
 1. Natural gas.
 2. Oil or coal with a sulphur content of less than 1%.
 3. All other carbon-based fuels.

In addition, Wis. Stat. § 196.025(1) declares, “To the extent cost-effective, technically feasible and environmentally sound, the commission shall implement the priorities under s. 1.12(4) in making all energy-related decisions”

The Commission implements the energy priorities by determining whether any higher priority alternatives to a CPCN project would be cost-effective, technically feasible, and environmentally sound. Highland, however, is not a public utility that sells electricity at retail, nor is it a public utility affiliate. It is a private entity, proposing to construct a wholesale merchant plant.² The Commission’s review of CPCN applications for merchant plants is more limited than for public utility plants. Under Wis. Stat. § 196.491(3)(d)2. and 3., a merchant plant CPCN

² Wisconsin Stat. § 196.491(1)(w) states:

1. “Wholesale merchant plant” means, except as provided in subd. 2., electric generating equipment and associated facilities located in this state that do not provide service to any retail customer and that are owned and operated by any of the following:
 - a. Subject to the approval of the commission under sub. (3m)(a), an affiliated interest of a public utility
 - b. A person that is not a public utility.
2. “Wholesale merchant plant” does not include an electric generating facility or an improvement to an electric generating facility that is subject to a leased generation contract, as defined in s. 196.52(9)(a)3.

applicant need not demonstrate that its facility would meet the reasonable needs of the public for electricity, and the Commission may not consider alternative sources of supply or engineering or economic factors when evaluating the application. The Energy Priorities Law ranks energy conservation and efficiency as its highest priority, but without information about need and project cost, which the merchant plant applicant is not required to submit, the Commission cannot determine whether energy conservation would be a more cost-effective alternative. Accordingly, the Energy Priorities Law is arguably inapplicable to merchant plants.

Even if the Commission is required to implement the priorities under Wis. Stat. § 1.12(4) in decisions involving merchant plants, the Commission concludes that Highland's project complies with the Energy Priorities Law. The proposed electric facility fits within the second highest statutory priority, and there is no record evidence that suggests conservation or efficiency are viable alternatives. For these reasons the Commission concludes that the Highland project complies with the Energy Priorities Law.

Site Alternatives

Wisconsin Statute § 196.491(3)(d)3. requires the Commission to consider alternative locations when determining whether a proposed generating plant is in the public interest.

Wisconsin Admin. Code § PSC 111.53(1)(e) and (f) require a CPCN application to describe the siting process, to identify the factors considered in choosing the alternative sites, and to include specific site-related information for each site. Highland's CPCN application complies with these requirements. It explains the "macro-siting" process used to screen areas in Wisconsin and the Midwest based upon the availability of sufficient wind resources, land area, and access to electric transmission infrastructure. It also describes how specific turbine locations were selected and how

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Highland confirmed the suitability of these locations. The record examines each of the 41 initially-preferred turbine locations. In addition, Highland identified and provided information regarding 11 alternate turbine sites located on leased properties within the project area that meet all of its siting criteria for primary sites. As noted, Highland relocated some of the turbines from preferred sites to alternate sites in response to concerns expressed by residents of the project area.

The Commission's standard for reviewing proposed site alternatives is to determine whether each proposed site is "reasonable," *i.e.*, is a feasible location for the project that would not directly conflict with any of the statutory criteria for granting a CPCN, and whether the sites are sufficiently distinct to offer different packages of costs and benefits that present the Commission with a choice. The Wisconsin Supreme Court affirmed this standard in *Clean Wisconsin et al. v. Public Service Commission of Wisconsin and Wisconsin Department of Natural Resources*, 2005 WI 93, ¶¶ 66-70. In a previous docket concerning a wind farm,³ the Commission found that the project applicant met the requirement to offer site alternatives by identifying 25 percent more turbine locations than it proposed to develop. On appeal, the Dodge County Circuit Court affirmed this method of offering site alternatives for a wind farm.⁴

The preferred and alternative sites that Highland has identified meet both of these standards. They provide differing environmental and landowner impacts, and the alternate sites offer more than 25 percent additional possible turbine locations. After review of the record

³ *Application of Forward Energy LLC for a Certificate of Public Convenience and Necessity to Construct a Wind Electric Generation Facility and Associated High Voltage Electric Transmission Facilities, to be Located in Dodge and Fond du Lac Counties*, docket 9300-CE-100 (July 14, 2005).

⁴ *Horicon Marsh Systems Advocates and Joe M. Breaden v. Public Service Commission of Wisconsin and Forward Energy LLC*, Dodge County Case No. 05-CV-539; "Memorandum Decision and Order" of Circuit Judge John R. Storck (March 23, 2006).

evidence and consideration of alternative locations, the Commission finds that the project is reasonable and in the public interest.

Brownfield Siting

Wisconsin Statute § 196.491(3)(d)8. declares that a CPCN generating project must be sited in a brownfield area “to the extent practicable.” Highland evaluated the potential use of brownfield sites for the project, but Wisconsin does not have a single brownfield site, or set of contiguous sites, that would be of sufficient size and would meet the siting criteria of available wind resources, land, and electric infrastructure. The Commission therefore finds that Highland’s project complies with Wis. Stat. § 196.491(3)(d)8.

Land Use and Planning

In the initial proceeding, Highland and Forest disagreed regarding the intent of the town’s planning document, titled “Town of Forest Comprehensive Plan 2009-2030” (Comprehensive Plan). Highland stated that the proposed project would not interfere with orderly land use and development plans, and stated that its position is supported by several factors, including: the sparsely developed rural character of the project area; Forest’s desire to maintain its rural, agricultural character; and the support for all types of renewable energy projects included in the town’s Comprehensive Plan.

Forest stated that its Comprehensive Plan envisions: maintaining the rural character of the town; siting and designing large-scale businesses and developments to avoid conflicts with preserving the town’s rural character; and limiting development, such as the proposed project to only the hamlet of Forest and along State Highway 64. Forest also stated that although the Comprehensive Plan supports renewable energy development in the town, it should be read to

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mean small-scale renewable energy development, not development of the size and scope of the proposed project.

The testimony is conflicting and the Forest Comprehensive Plan does not expressly limit support for renewable energy to small-scale development. A wind project of this nature is typically placed in rural areas and is consistent with rural features and agricultural uses. In prior cases, the Commission has found that development of wind generation facilities in rural, agricultural project areas did not unreasonably interfere with the land use and development plans at issue in those proceedings.⁵

The Commission finds that the proposed project, as modified by this Final Decision on Reopening, will not unreasonably interfere with the orderly land use and development plans for the area involved. The Comprehensive Plan adopted by Forest expressly envisioned support for renewable energy projects. While Forest has asserted that the proposed project will have some interference with land use and development, Wis. Stat. § 196.491(3)(d)6. recognizes that a project may indeed have some interference, but requires only that such interference not be unreasonable. The Commission concludes any such interference with land use and development is not unreasonable. As a result, Highland's project is reasonable and in the public interest.

⁵ See, e.g., *Application of Wisconsin Electric Power Company for a Certificate of Public Convenience and Necessity to Construct Wind Electric Generation Facility and Associated Electric Facilities, to be located in the Towns of Randolph and Scott, Columbia County, Wisconsin*, docket 6630-CE-302, *Final Decision* (January 22, 2010) ([PSC REF#: 126124](#)); *Application of Forward Wind Energy LLC for Certificate of Public Convenience and Necessity to Construct Wind Electric Generation Facility and Associated High Voltage Electric Transmission Facilities, to be located in Dodge and Fond du Lac Counties, Wisconsin*, docket 9300-CE-100, *Final Decision* (July 14, 2005) ([PSC REF#: 37618](#)).

Noise

Applicable Noise Limits

In its Final Decision dated March 15, 2013, the Commission found that the proposed project should meet the 50 dBA daytime and 45 dBA nighttime audible noise limit included in Wis. Admin. Code § PSC 128.14(3). In addition, based on public comments received in the initial proceeding, the Commission identified six residences occupied by potentially sensitive individuals and identified as an issue for this reopened proceeding whether the project could achieve a 40 dBA nighttime noise standard at these six residences.⁶ In its Petition, Highland agreed to limit, during the nighttime hours, to 40 dBA the sound attributable to the turbines at the six identified residences occupied by potentially sensitive individuals. (Petition at 19, [PSC REF#: 183159](#).) In the reopened proceeding, Highland submitted sound level modeling and a proposed curtailment plan that demonstrates that the proposed project will meet applicable noise limits, including the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA. In addition, in its filings regarding the reopened proceeding, Highland provided sound modeling meeting a 40 dBA limit at the six residences.

In the reopened proceeding, a member of the public submitted a comment stating that she has a son diagnosed with autism. The commenter requested similar consideration to that afforded the six residences identified in the initial proceeding. Two other members of the public submitted comments during the reopened proceeding indicating that they have family members who may have heightened sensitivity to sounds. One testified regarding her daughter, the other testified regarding a granddaughter. The Commission notes that sound level modeling provided by Highland in the reopened proceeding shows estimated levels at or below 40 dBA for all three of

⁶ See Order to Modify Second Prehearing Conference Memorandum, Issue 2, [PSC REF#: 186666](#)).

the commenters' residences identified in the reopened proceeding. Highland contended that curtailment to meet the 40 dBA limit at the six identified residences occupied by potentially sensitive individuals would provide no benefit and should apply only during the nighttime hours of 10:00 p.m. to 6:00 a.m. Highland stated that requiring Highland to meet a 40 dBA limit at all times at the six residences may affect the economic viability of the proposed project. Highland also requested that any Commission order approving the proposed project eliminate the 40 dBA limit at the six identified residences when the potentially sensitive residents no longer reside at their respective residences.

There is debate in the scientific community as to whether noise at certain levels from wind turbines causes or contributes to any health issues.⁷ When the Commission established the noise limits in Wis. Admin. Code ch. PSC 128, it considered these alleged impacts and concluded that the established noise standards were protective of public health and welfare. As the Commission noted in its prior decision in this proceeding, the Commission is not convinced that a causal link between audible or inaudible noise at wind generating facilities and human health risks has been established to a reasonable degree of scientific certainty.

While the Commission, based upon the available scientific literature, may have doubts as to whether noise from the turbines, whether it be at 40 dBA, 45 dBA or 50 dBA can cause or worsen any of the self-reported conditions individuals living at the six occupied residences may have, the Commission has erred on the side of caution by requiring Highland to demonstrate in modeling using the most conservative assumptions that the project will comply with the applicable noise limits. In addition, the Commission, out of an abundance of caution, accepts Highland's voluntary agreement to obligate itself to a lower limit of 40 dBA for the six identified

⁷ See EA, at 18-23, [PSC REF#: 171104](#). See also, Final Decision, at 14-15, 20-22, [PSC REF#: 182254](#).

residences, but the Commission is unwilling to require Highland to extend this accommodation to others—especially where, as here, the sound modeling submitted in this reopened proceeding demonstrates that the estimated levels are at or below 40 dBA for the commenters’ residences identified in the reopened proceeding. As a result, the Commission finds that it is not necessary to extend the 40 dBA noise limit to the three additional affected residences identified in the reopened proceeding.

Further, the Commission concludes that it is unreasonable and unnecessary to require the application of a 40 dBA limit for 24 hours a day. The Commission is unable to find substantial evidence in the record to support the application of a 40 dBA limit generally or for applying this standard 24 hours a day. The Commission is requiring 40 dBA at certain residences during the nighttime hours because Highland has voluntarily agreed to this more stringent standard. Further, there is no evidence in the record that demonstrates how a 40 dBA limit may remedy any issues a wind turbine may allegedly create near the sensitive residences. Highland’s agreement to the lower limit was only for the nighttime hours and that is reasonable. The Commission finds that the approach taken in Wis. Admin. Code ch. PSC 128, which allows higher noise limits during the day than at night is reasonable because its purpose is to avoid potential sleep disturbances associated with wind farm noise. A lower nighttime limit also recognizes the lower ambient or background noise at night. Given the uncertain causal relationship and the lack of record evidence establishing such a causal link between the conditions the individuals residing at the six sensitive residences have and noise, the Commission is not prepared to require Highland to do more than what they have agreed to, which is 40 dBA during the nighttime hours. Further, the Commission also finds little to no record support demonstrating what around-the-clock 40 dBA

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noise limit gains in terms of risk protection compared to a nighttime-only 40 dBA limit. Accordingly, the Commission finds that the 40 dBA limit should only apply during the nighttime hours of 10:00 p.m. to 6:00 a.m.

In addition, the Commission finds it appropriate to eliminate the 40 dBA limit at any of the six identified residences when the potentially sensitive residents no longer reside at their respective residences. There is conflicting record evidence as to whether one of the potentially sensitive residents among the six previously identified still resides or spends any considerable time in the project area. If Highland obtains confirmation that this individual no longer resides in the project area, then the Commission concludes that it is not necessary to impose a 40 dBA nighttime limit for that residence.

The Commission has considered the individual hardships that commenters in this proceeding have identified. As Highland has demonstrated to the Commission's satisfaction, using the most conservative modeling assumptions, that the project will comply with the noise standards set forth in Wis. Admin. Code § PSC 128.14(3), and an even more stringent standard in connection with certain identified residences, the Commission concludes that the project is reasonable, in the public interest, and will not have an undue adverse impact on public health or welfare.

Ground Absorption Coefficient

As required by the Commission's *Measurement Protocol for Sound and Vibration Assessment of Proposed and Existing Wind Electric Generation Plants* (Noise Protocol), Highland provided noise modeling for the project as initially proposed. The sound contours were generated using the WindPRO computer modeling software, which implements International Organization for Standardization (ISO) Standard 9613-2. The sound contours provided in Highland's CPCN

application used a ground absorption coefficient setting of 0.0 in the WindPRO software.

Commission staff's noise analysis of the project as initially proposed was completed solely on the modeling included in Highland's CPCN application. Highland later provided WindPRO modeling using a ground absorption coefficient of 0.5. As discussed previously, Highland provided revised project layouts to address concerns expressed by residents of the project area at the public hearing in the initial proceeding. These revised project layouts were developed using a ground absorption coefficient of 0.5.

In sound modeling, a ground absorption coefficient is used to characterize the ability of the ground to attenuate sounds. A ground absorption coefficient of 0.0 represents hard, acoustically reflective ground, while a value of 1.0 represents highly-absorptive conditions. A ground absorption coefficient of 0.5 represents semi-absorptive conditions. The lower the ground absorption coefficient value used, the higher the predicted sound level will be at residences represented in the model. Section 7.3 of ISO Standard 9613-2 specifies criteria for use of ground absorption coefficient values for various ground conditions. Wisconsin Admin. Code § PSC 128.14 does not address ground absorption. Use of a 0.0 ground absorption coefficient would result in the highest predicted sound levels from a proposed project.

In its Final Decision in the initial proceeding, the Commission found it is reasonable to use conservative assumptions regarding sound level modeling to reduce the risk of understating potential impacts to non-participating landowners. The Commission also found that sound modeling using a ground absorption coefficient of 0.0, calculated consistent with

ISO Standard 9613-2, is appropriate for the proposed project.⁸ The Commission further found that it is reasonable to require Highland to show compliance with the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA using worst-case modeling assumptions, including a ground absorption coefficient of 0.0. In the reopened proceeding, Highland provided modeling showing compliance with applicable noise limits using a ground absorption coefficient of 0.0.

Highland's Proposed Curtailment Plan

Highland's compliance plan includes curtailment of certain turbines by operating them in reduced noise operation modes in order to meet applicable noise limits. To comply with the 45 dBA nighttime noise limit included in Wis. Admin. Code § PSC 128.14 and the 40 dBA noise limit at the six sensitive residences, Highland's proposed plan consists of:

- Computer modeling to determine which turbines are required to be operated in reduced noise operating modes in order to meet the noise requirements.
- Minimizing the amount of lost energy production from reduced noise operation by adjusting the levels of reduction based on wind direction and non-participating residence locations in relation to the wind turbines requiring curtailment. This analysis is referred to as the "directivity" analysis throughout the record in the reopened proceeding.
- Programming the turbines based on available reduced operating modes for each turbine model alternative and the directivity analysis. Throughout the reopened proceeding, this proposed programming strategy is referred to as "sector cutout function," "sector management capabilities," or "sector cutout management."
- Verification of compliance with applicable noise limits by post-construction noise monitoring.

The Commission directed the parties to address whether Wis. Admin. Code ch. 128 allows curtailment: (i) as a design factor; (ii) only if the project is found to be out of compliance after it is

⁸ The Commission maintains, however, that a ground absorption coefficient of 0.0 may not be appropriate in all cases. See Final Decision, at 17, [PSC REF#: 182254](#). As a result, the Commission continues to encourage future applicants to present modeling using both a 0.0 and 0.5 ground absorption coefficient, and to submit both models to the Commission. Further, the Commission concludes that it is reasonable to modify the Noise Protocols to require submission of modeling using both factors.

built but not during the project planning phase; or (iii) at any time. Highland argued that the plain language of the Commission's rules which state that curtailment "shall" be a form of mitigation expressly permits the use of curtailment during both the operational and planning phases of the project. Wis. Admin. Code § PSC 128.14(4)(c). Highland also noted the Commission's own regulations allow a turbine that is operated to meet the 45 dBA standard at night to produce greater noise during the day, provided it does not exceed 50 dBA. Highland continued that for turbines which exceed the 45 dBA standard in the model runs, the only way to comply with the nighttime standard is through mitigation because a turbine designed to produce noise between 45 dBA and 50 dBA during the day in worst case conditions cannot meet 45 dBA at night in worst case conditions without changing something. Highland also observed that Wis. Admin. Code § PSC 128.14(2)(c) requires that a project be able to comply with the noise standards under "planned operating conditions."

Highland concluded that the only way to meet the nighttime standard is with curtailment, and therefore it would be a violation of Wis. Admin. Code § 128.14(2)(c) to design without curtailment factored into the design. To do otherwise would not be designing "under planned operating conditions." Highland also argued that any other interpretation of Wis. Admin. Code § PSC 128.14(3)(a) would require compliance with the nighttime 45 dBA standard at all times making the 50 dBA daytime standard superfluous—a result not supported by the rules of statutory and regulatory rule construction. *State ex rel. Kalal v. Circuit Court*, 2004 WI 58, ¶ 46, 271 Wis. 2d 633, 681 N.W.2d 110.

Intervenor Forest disagrees. Forest contended that curtailment as a mitigation strategy can only be used during operation and not as part of the planning phase. Forest asserted that the

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Commission determined in its original Final Decision that curtailment may only be used as a mitigation tool. Forest selectively quoted the Final Decision for this position. However, a full reading of the Final Decision, along with the fact that this question was posed to the parties, shows, and the Commission confirms here, that no such determination was made. *See* Final Decision, at 8-10, [PSC REF#: 182254](#). Forest also asserted that the Commission's Noise Protocol supports the proposition that curtailment can only be used during the operational phase. However, the portion of the Noise Protocol Forest cites does not support this assertion. While Highland may have the better legal argument, it is not necessary for the Commission to address this issue. Regardless of how one interprets Wis. Admin. Code § PSC 128.14, these provisions do not control a CPCN application. Under Wis. Admin. Code § 128.02(3), the Commission need only "consider" the Wind Siting Rules when evaluating a CPCN statute. Here, the Commission concludes that curtailment is an appropriate planning strategy without regard to the rules.

Computer Modeling

In the reopened proceeding, Highland provided sound modeling for the two turbine model alternatives currently proposed for the project, Nordex N117 and Siemens SWT-2.3. Highland used the sound level modeling capabilities of WindPro software to prepare these model runs. This sound level modeling conforms to ISO Standard 9613-2, and utilizes a ground absorption coefficient of 0.0.

In order to show no non-participating residences above applicable limits, Highland used reduced noise operation modes data supplied by the respective turbine manufacturers. Turbine manufacturers provide reduced noise operation modes data to the WindPro program vendor, and

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this data is available within WindPro as a modeling parameter for each individual turbine site.

Reduced noise operation modes work by controlling blade pitch, which lowers the rotational velocity of the wind turbine which, in turn, limits the wind turbine blade tip speed. Highland stated that reduced blade tip speed results in lower overall noise levels.

Highland stated that the proposed curtailment plan would allow the proposed project to meet applicable noise limits. Highland stated that the noise modeling in the reopened proceeding is based on the most conservative modeling assumptions, specifically ISO 9613-2 with a ground absorptivity coefficient of 0.0. These modeling results generally over-predict sound levels because the model assumes that all turbines are operating at the highest sound levels, that there is a light wind blowing from each turbine to each residence, and that a moderate temperature inversion is always present. Highland added that the turbine manufacturer's noise data used by the WindPro model is measured using International Electrotechnical Commission (IEC) Standard 61400-11, and represent the upper range of measured turbine sound levels. Using these modeling techniques, Highland stated that the modeling results would match the upper end of actual measured sound levels.

Intervenor Forest Voice contended that the difficulty with measuring and modeling of short-term sound levels from wind turbines is that both the emission levels and sound propagation path attenuation effects are dependent on time-varying wind speed, wind shear, and wind direction. These effects can vary by moment, hour, day, and season. To fully understand these variations, long-term monitoring of these parameters, such as a year or more, is required. Forest Voice continued that a factor of safety of no less than 5 dBA, and preferably 10 dBA, is appropriate to reflect these conditions.

Forest Voice also expressed concern regarding limitations of the ISO Standard 9613-2 for prediction of sound levels from wind turbines. Forest Voice listed concerns that are not considered in the ISO Standard 9613-2, including: complex and unsteady aerodynamic forces; meteorological conditions, including wind shear; effects from unsteady winds and wind turbulence; effects of upstream terrain; and effects of downstream wakes on other turbines. Forest Voice also analyzed uncertainties in Highland's modeling, and concluded that if WindPro modeling using the ISO Standard 9613-2 is used, the results should be assessed a penalty or safety factor of up to 6 dBA to account for those uncertainties.

Forest stated that Highland's noise modeling is not adequate because it does not account for relevant atmospheric conditions and does not include conservative assumptions. Forest continued that the ISO Standard 9613-2 may not be applicable to wind turbine operations and, as such, the results are unreliable. Forest added that data presented in the original proceeding by Clean WI witness David Hessler show that predicted sound levels modeled using ISO Standard 9613-2 should be increased by between 3 and 6 dBA to reflect nighttime conditions.

The Intervenor's arguments are not persuasive. The challenges to the WindPro modeling and the ISO 9613-2 standard are inconsistent with the previous positions Intervenor took in this case and are inconsistent with the Commission's reliance on WindPro modeling and the ISO standard in the initial Final Decision. The Commission also observes that the criticism leveled by some of Forest and Forest Voice's experts come from individuals who have little to no specific experience or expertise with WindPro or ISO 9613-2.

The applicant provided rebuttal testimony stating that its noise modeling for the proposed project is conservative in nature, and results in higher estimated sound levels than are likely to be

measured when the project is in operation. Further, modeling runs provided by the Intervenors using WindFarmer show less impact on non-participating residences than did the WindPro runs.

The Commission finds that Highland's sound modeling results, which were prepared using the WindPro modeling software that implements ISO Standard 9613-2, represents the higher end of likely sound levels from project facilities, considering the limitations and uncertainties included in the software and model. As such, the Commission finds the modeling is reasonable and these results predict that that proposed project will likely comply with applicable noise limits. As discussed more fully herein, the Commission will verify and confirm the modeling predictions through vigorous and robust post-construction sound monitoring and other reporting conditions.

Directivity Analysis

Highland stated that utilizing reduced noise operation modes may reduce electrical energy production from the turbines, the magnitude of which depends on how much the rotational velocity is limited. To minimize the amount of lost energy production from reduced noise operation, Highland prepared its directivity analysis. This analysis considers wind direction and non-participating residence locations in relation to the wind turbines requiring curtailment to develop individual turbine programming parameters that Highland states will allow it to meet noise limits while holding lost energy production to a minimum.

Instead of operating each turbine requiring curtailment in the modeled reduced noise operation mode all of the time, Highland proposes to use the results of its directivity analysis to program the turbines. Highland stated that both Nordex N117 and Siemens SWT-2.3 turbines are capable of being programmed with parameters that will allow them to meet applicable noise limits for the proposed project, yet minimize the amount of energy production lost due to curtailment.

Highland calculated tables with the required level of reduced operations that will be programmed into each turbine. Highland continued that, when operating, the turbines would continually adjust their operations to ensure full compliance with applicable noise limits. Highland described the methodology it used to develop its directivity analysis and stated that the analysis was conservative in nature.

Forest Voice countered that Highland's assumptions regarding directivity are not substantiated by the limited data available and would underestimate the predicted sound levels in the cross wind direction by 1 to 3 dBA. Forest Voice also expressed concern that Highland's directivity analysis was not based on data for the actual wind turbine models being considered for the proposed project. Forest Voice contended that Highland's directivity analysis used incorrect assumptions regarding the propagation of noise from a wind turbine.

Forest critiqued Highland's directivity analysis, stating that it has not been used previously for wind turbine noise assessment, is untested in practical use, and introduces a new form of average levels that could contribute to applicable noise limits not being met part of the time. Forest added that ISO Standard 9613-2 already takes directionality into account by requiring a downwind prediction in all directions, and stated that reducing predicted sound levels further with a directivity analysis makes the model less conservative. Forest continued that the rotor of a wind turbine is an extremely complex source of sound, which Highland's directivity analysis oversimplifies.

Highland provided evidence that its project will be in compliance even without considering directivity. Finally, if the use of directivity results in sound levels exceeding the limits, Highland

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will be required to increase the amount of curtailment so that the proposed project complies with applicable noise limits.

Turbine Programming

Highland provided information supplied by the turbine manufacturers describing the “sector management capabilities” of the turbine models under consideration for the project. Highland also described the capabilities of the turbine models under consideration for the proposed project for controlling noise emissions by reducing the rotational velocity of the turbine rotor. Highland also provided sample calculations that would be used to develop parameters to be used to program the turbines.

Forest contended that to ensure compliance with the applicable noise limits, a new site-specific software would need to be developed using real-time noise data from each residence where applicable noise limits may be exceeded, and described how this additional software is typically developed.

The turbines proposed by Highland are designed and constructed to be operated in reduced noise modes.

The Commission finds that Highland’s directivity analysis and turbine programming proposal is adequate to ensure compliance with applicable noise limits. The Commission further finds that it is appropriate to require Highland to provide a report demonstrating that the turbines have been programmed as proposed in its curtailment plan.

Post-Construction Noise Monitoring Plan

To demonstrate that the proposed project meets noise limits, Highland proposes to use a monitoring protocol that includes the following elements:

- Continuous measurements
- Measurement techniques
- Parameters measured
- Data analysis
- Reporting
- Complaint investigation
- Curtailment demonstration

Each element of the plan is discussed below.

Continuous measurements – Highland proposes to take continuous sound level measurements at one location near an isolated turbine to better understand the noise produced by a single turbine; and at one location near the center of the proposed project where there are multiple turbines located in different directions.

For the first three years of operation, Highland proposes to take continuous measurements at each location for one month per quarter for four full months of data annually.⁹ If, at any time, exceedances of the noise limits are found, the turbines would be immediately re-programmed to bring the project into compliance with applicable noise limits.

To respond to landowner complaints, Highland also proposes to take continuous measurements using a “roving” measurement setup that can be moved around to different locations.

If there are any non-compliance events in the first three years, Highland would conduct continuous measurements in the fourth year. Once Highland demonstrates compliance for a period of three consecutive years, it proposes that it no longer be required to conduct annual continuous

⁹ Highland initially proposed to take continuous measurements for one month per quarter for the initial year of operation. In its Initial Brief, Highland states that measurements would be taken at each location for one month per quarter for a period of three years. (Initial Br. at 16, [PSC REF#: 190282](#).)

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measurements. Highland would continue to conduct measurements if a complaint is received, consistent with the requirements of Wis. Admin. Code § PSC 128.14.

Measurement techniques – Highland proposes to measure sound levels and ground wind speed and direction at each location. All measurement equipment would meet the applicable specifications of IEC Standard 61400-11, with the exception that no ground board would be used because of anticipated complications with rain and snow cover. Instead, Highland proposes to mount the microphone four to five feet above the ground and fit it with a minimum seven-inch diameter windscreen. All measurements would be conducted using ten-minute intervals, time-synchronized with the project Supervisory Control and Data Acquisition (SCADA) system.

Parameters measured – Highland proposes to measure one-third octave band levels of the L_{50} , L_{90} , and L_{eq} , as well as audio samples of at least one minute per interval for nighttime hours. Average ground wind speed and direction would be measured and time-synchronized with the other data.

Data analysis – Because the applicable noise limits for the proposed project are fixed values that correspond to “noise attributable to the wind energy system,” the ten-minute measurements containing primarily turbine noise would be separated from those containing higher levels of ambient sounds. Highland proposes to achieve this by filtering the ten-minute measurements to identify intervals such as those when: the turbines are operating at or near maximum power; there is relatively low ground wind speed; wind direction is of particular interest at the time of the measurement; the spectral content of the measured level meet certain criteria; or, the measurements are taken at a certain time of day. Highland states that the exact filters to use would be determined after analysis of the first month of measurement data, and may be refined as

subsequent data is analyzed. The remaining ten-minute L_{eq} measurements, containing primarily turbine noise, would then be plotted and a regression calculated. Highland would thereby develop a range of turbine-only noise levels for each measurement location. The resulting database could also be used to determine the changes in noise levels with wind direction and speed.

Reporting – During the first year, one compliance report would be filed with the Commission each quarter. The report would provide all of the measured noise levels and ground wind data, and would describe in detail how the data was collected and analyzed. For each of the ten-minute samples that remain after the filtering process, the following SCADA information would be provided for the eight turbines closest to the measurement location: rotor speed, nacelle direction, hub-height wind speed, and noise reduction mode. A similar report would be filed with the Commission for any measurements conducted in years two and beyond.

Complaint investigation – Highland proposes to use a “roving” measurement system to measure at specific locations in the event of a complaint. The system could be deployed to the complainant’s residence and left for a period of two weeks to one month. If analysis of the data shows that turbine related noise levels exceed the limit, the adjacent turbine or turbines would be immediately re-programmed and testing continued for another two weeks to a month until compliance is demonstrated.

Curtailed demonstration – As discussed earlier, Highland proposes to program the turbines to enter into reduced noise operation modes under certain wind speed and direction conditions. Each turbine would have its own program that would be developed prior to initial operation. The SCADA system associated with utility-scale turbine installations continuously logs all pertinent parameters every ten minutes, including noise reduction mode, wind speed, rotor

speed, nacelle direction, and others. Highland proposes to provide SCADA data necessary to ensure proper reduced power operations, including hub height wind speed, wind direction, and reduced noise operation mode with each noise measurement report submitted to the Commission.

To eliminate the possibility of the turbine operator attempting to override the curtailment programming, Highland proposes that Commission staff designate for each report the turbine location for which data would be provided. Highland states that Commission staff could then check to ensure that the turbines were operating in the correct reduced noise operation modes under the correct operating conditions. Highland proposes that this requirement be eliminated once Highland demonstrates compliance for three consecutive years.

As discussed earlier, Highland stated that its proposed compliance plan would ensure compliance with the 45 dBA nighttime noise limit included in Wis. Admin. Code § PSC 128.14 and the 40 dBA nighttime noise limit at the six sensitive residences. Highland added that the proposed post-construction noise monitoring plan proposed is very comprehensive and will demonstrate compliance over a wide range of atmospheric and seasonal conditions. Highland continued that the proposed post-construction noise monitoring plan greatly exceeds post-construction monitoring conducted on any other Wisconsin wind farm.

Forest Voice listed several criticisms of Highland's proposed post-construction noise monitoring plan, most notably that only two permanent sound level monitor systems are proposed. Forest Voice continued that more monitoring points are necessary to adequately characterize conditions in areas without monitors. Forest Voice suggested that because of the complexity of the meteorological factors that contribute to noise from wind turbines, as well as the differences in the terrain between each turbine and receptor, the proposal to monitor noise at only two fixed and one

roving location in the 26,000 acre footprint of the project is inadequate. Forest Voice expanded upon these concerns and suggested a possible method for determining the locations of monitoring points representative of the entire project area.

Forest also suggested that for Highland's proposed post-construction noise monitoring plan to work: it would be necessary for the turbine control system to operate properly; sound levels would need to be monitored on a real time basis; and new software would be necessary to monitor sound levels and adjust turbine operations to comply with noise limits.

Commission staff testified that it has observed significantly more frequent noise complaints during two periods annually: from late March through early May, and from late October through early December. As such, Commission staff suggested that the Commission require as a condition of any Commission order issued approving the proposed project, that those two periods be specifically identified as two of the four periods during which Highland collects month-long post construction noise measurements.

Commission staff suggested a condition that all post-construction noise measurements and reports prepared for Highland be made available to Commission staff. Access to these data could help improve Commission staff's understanding regarding why complaints seem to be more frequent during certain periods.

Commission staff also suggested that, for the proposed project, the Commission clarify in any order issued approving the proposed project the phrase "location relating to the complaint" included in Wis. Admin. Code § PSC 128.14(4)(b) to include the complaining non-participating residence or other occupied building. This clarification avoids use by the project operator of any recent report that shows the development to be in general compliance with noise limits, but which

does not include measurements at the complaining location from being used as a reason to avoid taking measurements in response to the complaint.

Finally, Commission staff recommended that, to ensure that the post-construction sound measurement protocol meets the Commission's needs, the Commission consider, as a condition of any Commission order issued approving the proposed project, that Highland consult with Commission staff prior to taking any post-construction noise measurements. Commission staff continued that consultation should include both the final design of the post-construction sound measurement protocol and the locations at which measurements would be collected.

Because of the project's size and the need for accurate sound levels, the Commission finds that Highland's proposed post-construction noise monitoring plan should be modified to add two additional fixed monitoring points, so that the plan includes a total of four fixed and one roving monitoring points within the project area. The Commission finds that these additional measurement locations within the project area are necessary to adequately establish compliance with applicable noise limits.

The Commission also finds that because Commission staff has noted significantly more frequent noise complaints during late March through early May, and from late October through early December, two of the four months during which Highland collects month-long post-construction noise measurements should fall during these periods. However, the Commission finds it reasonable to expand the periods during which these measurements are taken to include the entirety of the periods from mid-March to mid-May, and from mid-October to mid-December. In addition, all post-construction noise measurements and reports prepared for Highland shall be

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made available to Commission staff. Highland shall also provide turbine operation SCADA data to Commission staff upon request.

The Commission further finds that, for the proposed project, the phrase “location relating to the complaint” included in Wis. Admin. Code § PSC 128.14(4)(b) is clarified to include the complaining non-participating residence or other occupied building. This clarification is intended to prevent the operator of the proposed project from using any recent report that shows the development in general compliance with noise limits, but which does not include measurements at the complaining location to avoid taking measurements in response to the complaint.

To ensure that the post-construction monitoring plan is adequate, the Commission finds that Highland shall consult with Commission staff, prior to taking any post-construction noise measurements, regarding both the final design of the post-construction sound measurement protocol and the locations at which measurements would be collected.

In addition, Highland agreed in its Petition to comply with any order condition requiring it to cooperate with the Commission and Commission staff to facilitate any third-party sound testing. (Petition at 19, [PSC REF#: 183159](#).) This condition shall also apply to any testing for infrasound and low-frequency noise (ILFN).

The Commission concludes that the post-construction noise monitoring plan, as modified by this Final Decision on Reopening, is reasonable and will help ensure that the proposed project complies with the applicable noise limits.

Compliance Showing

Wisconsin Admin. Code § PSC 128.14(3)(a) provides that “an owner shall operate the wind energy system so that the noise attributable to the wind energy system does not exceed

50 dBA during the daytime hours and 45 dBA during the nighttime hours.” The rule does not articulate the methodology that is to be used to measure compliance or what constitutes compliance with this absolute limit. Clean WI offered evidence in the initial proceeding that in order to meet an absolute limit 100 percent of the time, the design goal of the project would need to be up to 10 dBA below the noise limit. This would be necessary to avoid temporary excursions above the noise limit which Clean WI witness Mr. Hessler stated are unavoidable. Mr. Hessler also testified that if measured sound level is in compliance with the limit 95 percent of the time or more, he would consider the development to be in compliance.

The Commission finds that a showing of compliance by Highland at or above 95 percent of the time is adequate for the Commission to consider the proposed project in compliance with applicable noise limits. Highland shall work with Commission staff to finalize the post-construction testing methodology to be used consistent with a percentage-based standard. The Commission also concludes that it is reasonable to modify the Commission’s Noise Protocol so that this protocol is consistent with the Commission’s findings in this proceeding.

Turbine Model Alternatives

The Commission notes that, of the two remaining turbine models under consideration for the proposed project, the Siemens SWT-2.3 provides better noise performance according to the manufacturer’s specifications. As such, the Commission finds it reasonable to limit the turbine model selected for the proposed project to the Siemens SWT-2.3, or another turbine model with equivalent noise specifications.

Design and Operation to Comply with the Wind Siting Rules, Wis. Admin. Code ch, PSC 128

Provisions of Wis. Admin. Code ch. PSC 128 with which Highland has Committed to and Shall Comply

In its Petition, Highland states that it will comply with the following Wis. Admin. Code ch. PSC 128 provisions: 128.13(1), Siting criteria (setbacks); 128.14, Noise criteria except as modified by this Final Decision on Reopening; 128.15, Shadow flicker; 128.16, Signal interference; 128.17, Stray voltage (as discussed below); 128.18(1)(f) and (g), 128.18(4)(a) and (b), Construction and operation; 128.19, Decommissioning except as modified by this Final Decision on Reopening; 128.33(3), Monetary compensation of good neighbor payments, as discussed in this Final Decision on Reopening; 128.40, Complaint process; 128.41, Monitoring committee; and, 128.42, Notice to property owners and residences.

The Commission finds it reasonable to require Highland to comply with the above-stated rule conditions. Because the project will comply with the setback and safety requirements of Wis. Admin. Code ch. PSC 128, the Commission finds that the project is reasonable, in the public interest, and will not create undue adverse impacts to public health and welfare.

Decommissioning Requirements

In its Petition, Highland requested that the Commission modify some requirements of Wis. Admin. Code § PSC 128.19 regarding decommissioning. Highland requested that Commission staff act in lieu of Forest in determining the decommissioning cost estimators and to address any complaints that may arise in the future regarding decommissioning requirements. Highland stated that if the Commission requires the applicants to work with Forest to identify decommissioning cost estimators, Highland and Forest be given 30 days to mutually agree on the estimators. If Highland and Forest are unable to reach agreement within 30 days, and if Highland can

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demonstrate to Commission staff's satisfaction that it participated in good faith in an effort to reach agreement, then Commission staff should supervise the process of collecting decommissioning cost estimates. (Petition at 19, [PSC REF#: 183159](#).)

The Commission finds that Highland's proposed modifications to Wis. Admin. Code § PSC 128.19 requirements regarding decommissioning are reasonable, except that Highland and Forest be given 60 days to mutually agree on the estimators.

Good Neighbor Payments

In its Petition, Highland agreed to provide good neighbor payments consistent with Wis. Admin. Code § PSC 128.33(3). (Petition at 19, [PSC REF#: 183159](#).) The Commission finds that it is reasonable to require Highland to provide good neighbor payments consistent with Wis. Admin. Code § PSC 128.33(3). The Commission also clarifies that Highland shall comply with the escalation and disclosure provisions of Wis. Admin. Code § PSC 128.33(3).

Underground Collector Circuits

In its Petition, Highland agreed to and the Commission requires that it install all collector circuits underground. (Petition at 19, [PSC REF#: 183159](#).)

Siting Conditions and Individual Hardships

Property Values

Highland provided a study of the property value impact for the proposed project. Based on this study, Highland concludes that construction and operation of the proposed project will not substantially injure or diminish the value of property surrounding or proximate to the proposed project.

Forest Voice provided testimony that the proposed project would have a negative impact on property value. Forest Voice suggests that the Commission require Highland to guarantee property values by providing a payment at the time of sale equal to the difference between the sales price and that of non-influenced comparable sales. Several members of the public provided comments regarding possible negative effects of the proposed project on property values.

Based on Highland's evidence, the record does not demonstrate that the project will have a clear, direct or substantial impact on property values. The Commission finds that it is not necessary for Highland to guarantee property values by providing a payment at the time of sale equal to the difference between the sales price and that of non-influenced comparable sales.

Local Roads

A member of the public submitted comments in the initial proceeding regarding financial responsibility for damage to local roads caused by heavy and oversized vehicles used during construction.

Highland stated that, prior to commencement of construction, it will perform a survey of county and local road conditions within the project boundary. The roads will be videotaped before and after construction by an independent consultant acceptable to Highland, St. Croix County, and the towns of Cylon and Forest. Highland stated that direct damage resulting from the proposed project will be repaired and returned to conditions mutually agreed upon by the affected jurisdictions, not to exceed pre-construction conditions as determined by the pre-construction survey. Alternatively, Highland and the affected jurisdictions may agree on a rate of compensation for damage directly caused and related to traffic from the proposed project. In its Petition,

Highland agreed to comply with an order condition requiring it to coordinate necessary road repairs with the respective towns. (Petition at 19, [PSC REF#: 183159](#).)

The Commission finds it reasonable to require Highland to work with affected jurisdictions regarding a plan to repair or compensate the jurisdictions for damage to county and local roads resulting from construction of the proposed project.

After consideration of the siting conditions and individual hardships, the Commission concludes that the project is reasonable and in the public interest.

Stray Voltage

Wisconsin Admin. Code § PSC 128.17 states:

PSC 128.17 Stray voltage. (1) TESTING REQUIRED. (a) An owner shall work with the local electric distribution company to test for stray voltage at all dairy and confined animal operations within 0.5 mile of a wind energy system facility pursuant to the stray voltage protocol established by the commission before any wind energy system construction activity that may interfere with testing commences and again after construction of the wind energy system is completed, except as otherwise specified by commission staff under par. (b).

(b) Before any testing under par. (a) begins, an owner shall work with commission staff to determine the manner in which stray voltage testing will be conducted and on which properties. The electric distribution company serving a dairy or confined animal operation where testing is required under par. (a) shall conduct or arrange to conduct all required testing at the expense of the owner.

(2) RESULTS OF TESTING. An owner and the electric distribution company shall provide to commission staff the results of all stray voltage testing in writing.

(3) REQUIREMENT TO RECTIFY PROBLEMS. An owner shall work with the electric distribution company and farm owner to rectify any stray voltage problems attributable to the construction and operation of the wind energy system, in compliance with the commission's stray voltage protocol.

Some members of the public provided comments expressing concern that the proposed project could cause stray voltage problems. The Commission normally includes, as a standard order condition for any wind electric generation facility, a requirement that wind developers work with local electric distribution companies to test for stray voltage at all dairy operations within

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one-half mile of any project facility, prior to construction and again after the project is completed.

This standard order condition is consistent with the requirements of Wis. Admin. Code § PSC 128.17.

The Commission finds it is reasonable to require Highland to work with local electric distribution companies to test for stray voltage consistent with the requirements of Wis. Admin. Code § PSC 128.17.

Siting Flexibility

Any large construction project may encounter an unforeseeable condition that requires some siting flexibility. Such flexibility may be needed in order to resolve unforeseen problems that could arise during the construction process, such as unanticipated sub-surface conditions, to accommodate governmental requests, to address concerns that a landowner may have during the course of construction, to mitigate environmental impacts, and to take advantage of opportunities to minimize construction costs or improve the levels of electric generation. In other dockets, the Commission has granted CPCN project developers the ability to propose a minor siting modification, subject to review and approval of Commission staff.¹⁰

The Commission finds it reasonable to grant siting flexibility to Highland in this docket. The Commission authorizes Highland to use up to 44 specific sites for the construction of its turbines and associated facilities as otherwise consistent with this Final Decision on Reopening.

¹⁰ See, for example, the Commission's "Final Decision" in *Application of Wisconsin Electric Power Company for a Certificate of Public Convenience and Necessity to Construct a Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Randolph and Scott, Columbia County, Wisconsin*, docket 6630-CE-302 at 38-40, and *Application of Wisconsin Electric Power Company for a Certificate of Public Convenience and Necessity to Construct a Wind Electric Generation Facility and Associated Electric Facilities, to be Located in Fond du Lac County*, docket 6630-CE-294, at 26-28.

Highland may also adjust the location of its preferred and alternative turbine sites and associated facilities. Highland may make these “minor siting modifications” only if the change affects resources or causes impacts the Commission has already evaluated, results in no significant changes in impacts to non-host landowners, meets Highland’s own siting criteria, and otherwise complies with the requirements of this Final Decision on Reopening. Highland shall notify Commission staff of any proposed minor siting modifications.

Prior to making more substantial changes than those defined as minor siting modifications by this Final Decision on Reopening, Highland must receive approval from Commission staff. Highland shall submit a formal letter describing:

1. The nature of the requested change.
2. The reason for the requested change.
3. The incremental difference in any environmental impacts.
4. Highland’s communications with the potentially-affect landowner.

The requests will be reviewed by Commission staff knowledgeable about the project, and Commission staff will decide whether to grant or deny the change.

All siting flexibility is conditioned upon the receipt of all necessary environmental permits, compliance with all local requirements, compliance with all of the landowner agreements, avoidance of any part of the project area that the Commission finds unacceptable, compliance with Highland’s own siting criteria, compliance with all commitments identified by Highland in its application, and all conditions of this Final Decision on Reopening.

The Commission finds that it is reasonable that the applicants be granted minor routing flexibility. The Commission also finds that Highland shall follow the described process.

Material Adverse Impacts to Wholesale Competition

Under Wis. Stat. § 196.491(3)(d)7., the Commission may only issue a CPCN for a project that “will not have a material adverse impact on competition in the relevant wholesale electric service market.” Highland proposes to interconnect its new wind electric generation facility to transmission facilities owned by NSPW. Because the transmission system in the area is owned by NSPW and is under the operational control of the Midcontinent Independent System Operator, Inc., Highland as a generation facility owner and operator cannot manipulate the transmission system to benefit its own generating plants. Finally, the addition of new generating supply into the market promotes wholesale competition. For these reasons, the Commission finds that proposed project will have no material adverse impact on competition in the wholesale electric service market.

Environmental Factors

Bird and Bat Mortality Studies

The Wisconsin Department of Natural Resources (DNR) recommended that a post-construction bird and bat mortality study be conducted and that the study duration be at least one year. DNR also recommended that bat activity monitoring occur during the same period, and that both DNR and Commission staff review and approve the scope and methodology to be used in the study.

DNR also recommended that, at the end of the one-year period, Commission and DNR staff reconvene with Highland to determine if the study methods, scope, and results allow reasonable conclusions to be made regarding the nature and extent of bat fatalities at the project site, and whether measures are needed to address those impacts. DNR continued that if the results

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are inconclusive in these respects, then the option should remain to consider whether an additional year of study will improve the conclusions. In its Petition, Highland agreed to comply with an order condition requiring an additional year of bat mortality study, if deemed necessary by Commission and DNR staff. (Petition at 19, [PSC REF#: 183159](#).)

The Commission finds it reasonable to require that Highland conduct one year of post-construction bird and bat monitoring. In addition, the Commission finds it reasonable for Highland to conduct an additional year of bat mortality study if Commission and DNR staff determine that it would substantially improve the estimate of bat fatalities or improve methods used to reduce bat fatalities.

Bald Eagles

Two active bald eagle nests have been located in the project area. A third likely nest site was also identified. Bald eagles are federally protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. Highland is working with the U.S. Fish and Wildlife Service (USFWS) to evaluate the potential impact of the proposed project on bald eagles, and that evaluation is still ongoing. Highland has indicated that it may request a voluntary permit from USFWS to allow a certain amount of take of eagles as determined by USFWS in the course of conducting lawful operation of the proposed project. It is possible that some project changes, such as moving or eliminating certain turbine locations, may result from USFWS recommendations to minimize potential bald eagle impacts. In its Petition, Highland agreed to comply with an order condition requiring it to report to Commission staff any modifications to the proposed project undertaken to accommodate USFWS permit requirements. (Petition at 19, [PSC REF#: 183159](#).)

The Commission finds it reasonable to require that Highland report to the Commission any project modifications implemented to reduce potential bald eagle impacts.

After consideration of environmental factors, the Commission concludes that the project is reasonable and in the public interest.

Compliance with the Wisconsin Environmental Protection Act

Wisconsin Stat. § 1.11 requires all state agencies to consider the environmental impacts of “major actions” that could significantly affect the quality of the human environment. In Wis. Admin. Code ch. PSC 4, the Commission has created three tables that categorize the types of actions it undertakes for purposes of complying with this statute. Table 1 identifies proposed projects that qualify as major actions, for which an environmental impact statement (EIS) is always needed; Table 2 lists proposals with the potential to significantly affect the quality of the human environment, for which the Commission will produce an environmental assessment (EA) in order to determine whether an EIS is needed; and Table 3 describes actions that normally require neither an EIS nor an EA. The Highland project fits within Table 2, item br., as a new wind-powered electric generating facility larger than 10 MW.

An EA dated July 18, 2012, was prepared by Commission staff in consultation with DNR. Based on the detailed environmental review of this project, a determination was initially made that the potential impacts of the project would not have a significant effect on the human environment, and therefore preparation of an EIS for the proposed project was not required.

By Order dated December 3, 2012, the Commission modified and approved the supplemental intervenor compensation application of Clean WI and Forest Voice for measurement of ILFN at the Shirley Wind Farm (Shirley). A team of acoustic experts obtained ILFN

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measurements at three residences near Shirley during the period December 4 through 7, 2012.

This team of experts submitted to the Commission a report of its findings (Shirley Report).

Subsequently, after the Shirley Report was filed, the Commission prepared a Supplemental EA focusing solely on the information provided in the report. A Preliminary Determination that no EIS was necessary was issued on January 24, 2013. Comments on the Preliminary Determination were collected through February 8, 2013. Based on the additional review presented in the Supplemental EA, the initial determination was affirmed that the potential impacts of the project would not have a significant effect on the human environment.

In the reopened proceeding, because the locations of the facilities for the proposed project were not changed from those included in the Supplemental EA, nor was the project modified, there is no need to prepare a second Supplemental EA.

The Commission finds that the EA and Supplemental EA comply with the requirements of Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4. The Commission further finds that based upon the EA, Supplemental EA and other record evidence that the project will not have undue adverse impacts on environmental values such as ecological balance, historic sites, geologic formation, aesthetics of land, water and recreational use.

Third Party Ownership, Successors and Assigns

In the record, the possibility of Highland's sale of the project to a third-party was raised. Highland stated that it would commit to agree that any agreement for the sale of the project would include as a condition of the sale that the purchasing third-party (and any subsequent successors or assigns) would agree to be bound by any and all conditions of approval of Highland's CPCN. To ensure that the Commission continues to have regulatory oversight of the operation of this project,

regardless of whether the operator is Highland, a merchant, or a public utility, the Commission requires as a condition of approval that the conditions of approval set forth in this Final Decision on Reopening shall be binding upon any agents, contractors, successors, assigns, corporate affiliates, or any future owners or operators of the project. Further, in any agreement for the sale of the project, Highland shall include a specific provision that the purchasing third-party (and any subsequent successors or assigns) will agree to be bound by any and all conditions of approval of Highland's CPCN.

Certificate

For the reasons set forth in this Final Decision on Reopening and the other record evidence in this proceeding, the Commission finds that the project is reasonable and in the public interest after considering alternative locations, individual hardships, safety, and environmental factors. Additionally, the Commission also finds, for the reasons set forth in this Final Decision on Reopening and the other record evidence in this proceeding, that the project will not have undue adverse impacts on other environmental factors such as ecological balance, public health and welfare, historic sites, geologic formation, aesthetics of land water and recreational use. The Commission therefore grants Highland a CPCN for construction of the proposed Highland Wind Farm, as described in its application, and modified by this Final Decision on Reopening.

Order

1. Highland may construct and operate its project in conformance with the design specified in its application and subject to the conditions specified in this Final Decision on Reopening.

2. All commitments made by Highland in this proceeding and conditions of this Final Decision on Reopening shall apply to Highland, any agents, contractors, successors, assigns, corporate affiliates, or any future owners or operators of the project. In any agreement for the sale of the project, Highland shall include a specific provision whereby the purchasing third-party (and any subsequent successors or assigns) agree to be bound by all commitments made by Highland in this proceeding and conditions of this Final Decision on Reopening.

3. This authorization is for the specific project as described in the CPCN application. Should the scope, design, or location of the project change significantly, Highland shall promptly notify the Commission as soon as it becomes aware of the possible change and shall obtain Commission review and approval.

4. Beginning with the quarter ending December 31, 2013, and within 30 days of the end of each quarter thereafter and continuing until the facilities are fully operational, Highland shall submit quarterly progress reports to the Commission that include all of the following:

- a. The date that construction commences.
- b. Major construction and environmental milestones, including permits obtained, by agency, subject, and date.
- c. Summaries of the status of construction, the anticipated in-service date, and the overall percent of physical completion.
- d. The date that the facilities are placed in service.

5. Highland shall file with the Commission geographic information systems (GIS) data reflecting any modifications to the project design necessary to comply with this Final Decision on Reopening prior to commencement of construction.

6. Highland shall provide the Commission with as-built GIS data location information for every turbine site and other project facilities when it determines their final location. This data shall be compatible with state government standards.

7. Except as specifically modified by this Final Decision on Reopening, the project shall comply with the noise limits set forth in Wis. Admin. Code § PSC 128.14(3).

8. The 40 dBA limit shall only apply during the nighttime hours of 10:00 p.m. to 6:00 a.m. at the six identified residences with sensitive individuals, provided however that the 40 dBA limit shall not apply to one of the six identified residences if Highland confirms that the occupant with the sensitive condition no longer resides or spends significant time at the residence.

9. Highland may eliminate the 40 dBA limit at any of the six identified residences when the resident with special needs no longer resides at the residence.

10. Highland shall submit a report to the Commission documenting that it has programmed each turbine requiring curtailment for Highland to comply with applicable noise limits consistent with its curtailment plan prior to commencing operation of the proposed project.

11. Highland shall give Commission staff confidential access to SCADA information to verify that the turbines are appropriately operating in reduced noise operating modes when conditions exist that could cause an exceedance of applicable noise limits.

12. Highland's proposed post-construction noise monitoring plan shall include four fixed and one roving monitoring points within the project area. Highland shall work with Commission staff regarding the appropriate locations for the monitoring points.

13. Highland shall include the entirety of the periods from mid-March to mid-May, and from mid-October to mid-December, as two of the four periods annually during which Highland

collects post-construction noise measurements. These two periods shall be included in each of the first three years of monitoring. Highland shall work with Commission staff regarding the scheduling of the two remaining month-long periods. In addition, all post-construction noise measurements and reports prepared by or for Highland shall be made available to Commission staff.

14. Highland shall consult with Commission staff, prior to taking any post-construction noise measurements, regarding both the final design of the post-construction sound measurement protocol and the locations at which measurements will be collected.

15. Highland shall cooperate with the Commission and Commission staff to facilitate any third-party sound testing at the site of the proposed project.

16. The proposed project shall be considered to be in compliance with applicable noise limits if post-construction noise measurements show compliance at least 95 percent of the time. Highland shall work with Commission staff to finalize the post-construction testing methodology to be used consistent with this percentage-based standard.

17. Highland shall limit the turbine model selected for the proposed project to the Siemens SWT-2.3, or another turbine model with equivalent noise specifications.

18. Highland shall comply with the following Wis. Admin. Code ch. PSC 128 provisions: 128.13(1), Siting criteria (setbacks); 128.14, Noise criteria except as modified by this Final Decision on Reopening; 128.15, Shadow flicker; 128.16, Signal interference; 128.17, Stray voltage as discussed in this Final Decision on Reopening; 128.18(1)(f) and (g), 128.18(4)(a) and (b), Construction and operation; 128.19, Decommissioning except as modified by this Final Decision on Reopening; 128.33(3), Monetary compensation of good neighbor payments, as

discussed in this Final Decision on Reopening; 128.40, Complaint process; 128.41, Monitoring committee; and, 128.42, Notice to property owners and residences.

19. Highland shall work with Forest to comply with the requirements of Wis. Admin. Code § PSC 128.19 regarding decommissioning. If Highland and Forest cannot agree upon decommissioning cost estimators within 60 days, and if Highland can demonstrate to Commission staff's satisfaction that it participated in good faith in an effort to reach agreement, then Commission staff shall supervise the process of collecting decommissioning cost estimates.

20. Highland shall provide good neighbor payments consistent with Wis. Admin. Code § PSC 128.33(3), including the related escalation and disclosure provisions.

21. Highland shall construct all collector circuits for the proposed project using underground configurations.

22. Highland shall construct, maintain, and operate all project facilities in a manner that complies with the National Electrical Safety Code and Wis. Admin. Code ch. PSC 114.

23. Highland shall work with affected jurisdictions regarding a plan to repair or compensate the jurisdictions for damage to county and local roads resulting from construction of the proposed project.

24. Highland shall work with local electric distribution companies to test for stray voltage prior to construction and again after construction is complete, consistent with the requirements of Wis. Admin. Code § PSC 128.17.

25. The Commission grants Highland the ability to use up to 44 of the 52 specific sites Highland has proposed for its turbines and associated facilities, as otherwise consistent with this Final Decision on Reopening. The Commission grants Highland the ability to move turbines or

facilities to any of Highland's proposed alternate sites on its own volition, as otherwise consistent with this Final Decision on Reopening.

26. The Commission grants Highland the ability to make minor siting modifications, as defined in this Final Decision on Reopening, if it provides advance notice to and receives approval from Commission staff. Highland shall submit a formal letter for Commission staff review and approval that describes the nature of the proposed change, the reason for it, the incremental environmental impact differences based on the approved facilities location, and Highland's communications with all affected landowners.

27. Highland shall conduct one year of post-construction bird and bat mortality monitoring. In addition, Highland shall conduct an additional year of bat mortality study if Commission and DNR staff determine that it would substantially improve the estimate of bat fatalities or improve methods used to reduce bat fatalities.

28. Highland shall report to the Commission any project modifications implemented to reduce potential bald eagle impacts.

29. This authorization is valid only if construction commences no later than one year after the date this Final Decision on Reopening is served.

30. This Final Decision on Reopening supersedes the Final Decision dated March 15, 2013, and is effective one day after the date of service.

31. Jurisdiction is retained.

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Dissent

Commissioner Nowak dissents and writes separately (see attached).

Dated at Madison, Wisconsin, this 25th day of October, 2013.

By the Commission:

A handwritten signature in cursive script that reads "Sandra J. Paske".

Sandra J. Paske
Secretary to the Commission

SJP:JAL:jlt:DL: 00868198

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN
610 North Whitney Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

PETITION FOR REHEARING

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of the date of service of this decision, as provided in Wis. Stat. § 227.49. The date of service is shown on the first page. If there is no date on the first page, the date of service is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

PETITION FOR JUDICIAL REVIEW

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of the date of service of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of the date of service of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission serves its original decision.¹¹ The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: March 27, 2013

¹¹ See *State v. Currier*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin 2535-CE-100

DISSENT OF COMMISSIONER ELLEN NOWAK

I dissent from the Commission's order granting a Certificate of Public Convenience and Necessity (CPCN) to Highland Wind Farm, LLC (Highland), for the construction of a new 101.2 megawatt (MW) wind electric generation facility.¹ The project includes construction of up to 44 wind electric generating turbines, depending on turbine model selected, and associated facilities to interconnect with the existing Northern States Power Company-Wisconsin (NSPW) electric transmission system in the towns of Forest and Cylon, in northeast St. Croix County, Wisconsin.

I previously joined the majority in the decision not to grant a CPCN for Highland on the basis that Highland failed to demonstrate compliance with the noise standards in Wis. Admin. Code § PSC 128.14. I also voted against reopening the proceeding to allow Highland to submit what I contend was an application for a redesigned project, in an attempt to make the project meet the noise standards in Wis. Admin. Code § PSC 128.14. ([PSC REF#: 182254.](#))

In the reopened proceeding, Highland submitted a plan that requires curtailment in order to meet the sound limits in Wis. Admin. Code § PSC 128.14. While the Commission did not

¹ In its Petition, Highland agreed to eliminate the loudest of the three turbine models under consideration for the proposed project. (Petition at 19, [PSC REF#: 183159.](#)) Prior to the elimination of that turbine, the electric generating capacity of the project was 102.5 MW.

explicitly decide the issue, I am not convinced that Wis. Admin. Code ch. PSC 128 contemplated the type of curtailment plan proposed by Highland as a method for permanent compliance with sound limits. I think the use of curtailment in the manner proposed by Highland undermines the sound limits that were discussed at length and vetted by the Wind Siting Council.

Assuming that a curtailment plan such as the one submitted by Highland is allowable, I was not convinced that the modeling in the record would ensure compliance with the noise standards in Wis. Admin. Code § PSC 128.14. For the reasons explained below, I believe that Highland failed to meet its burden to show that its proposal is in the public interest and that the project will not cause undue adverse impact.

Highland argued that its modeling was the “most conservative” because it used a ground absorption coefficient of 0.0 and followed the criteria in International Organization for Standardization (ISO) Standard 9613-2. However, use of those two criteria does not render the modeling the “most conservative.” While I agree with Highland that the use of a 0.0 ground attenuation factor is the most conservative value for *that* factor, I disagree with its assertion that the use of a 0.0 factor renders the entire model the “most conservative” and negates the need to account for other factors that impact noise.

I was also not persuaded by Highland’s argument that a 0.0 factor is extreme and will almost never occur. To the contrary, credible evidence was submitted showing that a 0.0 factor will occur in the case of hard, bare ground in the winter, ice covered snow, or a concrete driveway in front of a house. These conditions are hardly extreme and are certain to occur in northwest Wisconsin in the long winter months, at the least.

Also, Highland's failure to include a factor of safety in its modeling renders the results unreliable. Indeed, Highland's modeling omitted several other conditions that are too important to ignore. For example, ISO Standard 9613-2 does not consider the effects of temperature variations, directivity, atmospheric turbulence and other conditions affecting sound propagation. As a result, Highland's modeling was too uncertain to make it reliable. Uncertainty can be mitigated with a factor of safety built into the design, but Highland chose not to do so, and in turn, its modeling was not sufficient to ensure that noise levels would always be below the allowable limits. In sum, there is not enough in the record to substantiate Highland's claim that use of a 0.0 ground attenuation factor obviates the need to consider other factors that impact noise or build in a factor of safety.

Highland argued that on the whole, its modeling is conservative, but Highland seems to concur that there are points in time where the modeling may not be accurate. It is these points in time when the sound levels will likely be exceeded under the current design. The Commission recognized that temporary excursions above the allowable noise limits should be minimized,² and without a factor of safety built in, there will more exceedances than is acceptable in my mind.

The conditions imposed in the Certificate of Public Convenience and Necessity by the majority do not compensate for the shortcomings in Highland's modeling. Specifically, the failure to impose a 24-hour 40 dBA (A-weighted decibels) limit at the sensitive residences is a mistake. The different standards in Wis. Admin. Code ch. PSC 128 account for the affects turbine noise can have on sleep. Sleep disturbance, however, is not the issue here. The identified individuals have specific conditions that exist 24 hours a day. Those individuals

² Final Decision, [PSC REF#: 182254](#), pages 18-19.

should be able to be in their homes 24 hours a day. The majority should not discount the fact that there are factors other than, or in addition to, sleep disturbance that need to be addressed. I would have imposed a 24-hour dBA standard to ensure the health and safety of the individuals at the sensitive residences.

Highland has submitted evidence on the effect of a 24-hour dBA standard on power generation, but that is irrelevant. Highland originally suggested making special accommodations for these more sensitive individuals, so to later claim that it cannot do so because it will negatively affect power production is disingenuous.

The post-construction monitoring imposed by the majority also falls short. The majority failed to ensure that there will be sufficient monitoring at the project site. The footprint of the project is approximately 26,000 acres. While the majority did increase the number of permanent/fixed monitors from two to four, they failed to require more than one roving monitor. I would have included at least one more roving monitor to address situations where there are simultaneous complaints and an affected homeowner is denied testing because a monitor is currently in use at another location. One roving monitor is insufficient to establish compliance with the applicable noise limits.

Highland and intervenors disagree on what denial of this application means for the future of wind energy in Wisconsin. The record in this case contained information about the effects of other wind projects in Wisconsin. Some residents in those areas testified about health difficulties and attribute a lot of it to the wind farm. Before a wind farm is built, the Commission should make sure that it has done all it can to protect the residents of that area. If a project, like this one, is built without full, complete, and accurate analysis, it has the potential to cause even more

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problems, and result in even more scrutiny or skepticism of future projects. The best thing this Commission can do for the future of wind energy in Wisconsin is to ensure that a full and thorough analysis is done before approving such a project. Here, the majority failed to ensure that safeguards are in place, and that modeling and testing was exhaustive and accurate.

DL: 00885578

APPENDIX C:

ORDER TO MODIFY SECOND PREHEARING CONFERENCE MEMORANDUM

DATED JUNE 25, 2013

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public
Convenience and Necessity to Construct a 102.5 Megawatt Wind
Electric Generation Facility and Associated Electric Facilities, to be
Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

ORDER TO MODIFY SECOND PREHEARING CONFERENCE MEMORANDUM

This Order modifies Section II and III of the [Second Prehearing Conference Memorandum - PSC REF#: 185730](#), as directed by the Commission at its Open Meeting on June 21, 2013, as follows:

II. Issues:**A. The record shall present detailed evidence that addresses the following:**

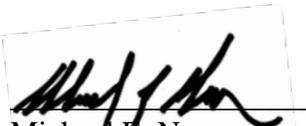
1. Can the project comply with the noise standards in Wis. Admin. Code ch. PSC 128?
2. Can the project achieve a 40 dBA nighttime noise standard at the six residences identified in the existing record as occupied by persons with special needs?
3. Will the proposed curtailment plan ensure compliance with the noise standards in Wis. Admin. Code ch. PSC 128 and a 40 dBA noise standard for (i) between the hours of 10 pm and 6 am, and (ii) for 24 hours (daytime and nighttime hours) at the six residences identified in the existing record as occupied by persons with special needs?
4. What post-construction sound testing protocols and compliance procedures are necessary to ensure ongoing compliance with the noise standards in Wis. Admin. Code ch. PSC 128 and a 40 dBA noise standard for (i) between the hours of 10 pm and 6 am, and (ii) for 24 hours (daytime and nighttime hours) at the six residences identified in the existing record as occupied by persons with special needs?

B. Without limitation to any other relevant legal issue, briefs shall address the following:

1. Will the project, as modified to meet the noise standards described in Issues A.1 and A.2, remain within the scope of Commission jurisdiction under Wis. Stat. § 196.491(3)?
2. Does PSC 128 allow curtailment: (i) as a design factor; (ii) only if the project is found to be out of compliance after it is built but not during the project planning phase; or (iii) at any time?

III. The schedule appears below:

- Friday, July 19, 2013, at 12 noon Applicant and Intervenors who generally support - Supplemental Direct testimony and exhibits only to the extent necessary to address changes to the issues, as modified by this Order
- Monday, July 29, 2013, at 12 noon Intervenors critical of the Application and Commission Staff - Direct testimony and exhibits
- Friday, August 9, 2013, at 12 noon All parties and Commission staff - Rebuttal testimony and exhibits
- Monday, August 12, 2013, at 12 noon All parties and Commission staff - Errata or replacement pages to testimony and exhibits
- Wednesday, August 14, 2013, at 9:30 a.m. Party Hearing Session begins – PSC Building
- Tuesday, September 3, 2013, at 12 noon Initial Briefs
- Tuesday, September 10, 2013, at 12 noon Reply Briefs


Michael E. Newmark
Administrative Law Judge

MEN: DL: 00754891

APPENDIX D:
SECOND PREHEARING CONFERENCE MEMORANDUM

DATED MAY 31, 2013

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public
Convenience and Necessity to Construct a 102.5 Megawatt Wind
Electric Generation Facility and Associated Electric Facilities, to be
Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

SECOND PREHEARING CONFERENCE MEMORANDUM

This memorandum orders the following consistent with the prehearing conference held on May 13, 2013, and pursuant to Wis. Admin. Code § PSC 2.04(1). Sections II and III are tentative, subject to Commission review. Efficient process requires that parties and Commission staff rely on this interim issue list and schedule, until ordered otherwise by the Commission.

I. The following are parties to this proceeding:**A. Applicant:**

1. Highland Wind Farm, LLC

B. Intervenors:

1. Forest Voice, Inc.
2. RENEW Wisconsin
3. Town of Forest
4. Clean Wisconsin

II. Issues:**A. The record shall present detailed evidence that addresses the following:**

1. Can the project comply with the noise standards in Wis. Admin. Code ch. PSC 128?
2. Can the project achieve a 40 dBA night-time noise standard at the six residences identified in the existing record as occupied by persons with special needs?
3. How effective curtailment will be as a noise mitigation strategy for this project?
4. Will the Applicant's proposed post-construction sound testing protocols and compliance procedures be effective, reasonable, and in the public interest?

B. Without limitation to any other relevant legal issue, briefs shall address the following:

1. Will the project, as modified to meet the noise standards described in Issues A.1 and A.2, remain within the scope of Commission jurisdiction under Wis. Stat. § 196.491(3)?

III. The schedule appears below:

- Friday, June 14, 2013, at 12 noon Applicant and Intervenors who generally support -
Direct testimony and exhibits
- Tuesday, July 16, 2013, at 12 noon Intervenors critical of the Application and Commission Staff -
Direct testimony and exhibits
- Tuesday, July 30, 2013, at 12 noon All parties and Commission staff -
Rebuttal testimony and exhibits
- Tuesday, August 6, 2013, at 12 noon All parties and Commission staff -
Surrebuttal testimony and exhibits
- Friday, August 9, 2012, at 12 noon All parties and Commission staff -
Errata or replacement pages to testimony and exhibits
- Tuesday, August 13, 2013, at 9:30 a.m. Party Hearing Session begins – PSC Building
- Tuesday, September 3, 2013, at 12 noon Initial Briefs
- Tuesday, September 10, 2013, at 12 noon Reply Briefs

IV. Other facilitating matters:

A. Filing and Service

1. Procedure

- a. The assigned Commission staff attorney is the first point of Commission contact for a party on any procedural matter related to the docket.
- b. File by ERF. If ERF cannot accept a document, contact the Commission's Records Management Unit at (608) 261-8521 for further instructions.
- c. File all documents offered as exhibits except for the following:
 - i. An entire document that already appears on ERF in this docket. *See* Prehearing Conference Memorandum § IV. A. 4 (b).

request, with an exception of 30 days allowed for just cause. For any request made in response to rebuttal testimony respond in full no later than 7 days after service of the request. For any request made in response to surrebuttal testimony respond in full no later than 2 days after service of the request.

- b.** Notify a requester of the intent to answer a discovery request or data request solely by objection, or by objection and partial-response, notwithstanding the objection, within 3 days after service of the request. For any request made in response to rebuttal testimony serve the notice 2 days after service of the request. For any request made in response to surrebuttal testimony serve the notice within 1 day after service of the request.
- c.** Serve any, but file no, party discovery requests or notices to object, with the Commission staff docket coordinator.
- d.** File a request for protective order to a discovery request or data request. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after filing of the response.
- e.** File any request to compel a response to a discovery request or data request 3 days after service of the notice to object. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after filing of the response.

3. Other Requests

- a.** File any request for intervention under Wis. Admin. Code § PSC 2.21(4). File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after the filing of the response.
- b.** Unless made at hearing, file any request to waive or modify the application of this order in particular circumstances for good cause. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after the filing of the response.
- c.** File any request for interlocutory review under Wis. Admin. Code § PSC 2.27. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after the filing of the response.
- d.** File any request for leave to file a non-party brief. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after the filing of the response.

4. Prehearing Testimony and Exhibits

- a.** File any prehearing testimony and exhibits indicated in the above schedule by the deadline assigned.
- b.** When offering as an exhibit, an entire document already filed on ERF in this docket, file only a letter that identifies the document by PSC REF #: and the exhibit number requested. File the letter under the “Prehearing/Prefiled Exhibit/Testimony” document type. File all such requests in one letter for each round of testimony.
- c.** When only part of a document relates to the purpose of the filer, file only the first page of the document and the relevant portion of the document. Offer testimony

from a prior docket, as an exhibit, only in the form of an excerpt from a sworn transcript.

- d. File any objection to prehearing testimony and exhibits by the deadline of the next round of filing. File any response by 12 noon 3 days after the filing of the objection and any reply by 12 noon 2 days after filing of the response. This paragraph does apply to the last round of prehearing testimony and exhibits. *See* Prehearing Conference Memorandum § IV. E. 2.
- e. File the volume of written testimony for any witness being compelled to appear, and corresponding exhibits, by the deadline to file rebuttal testimony.
- f. File all corrections to prehearing testimony and exhibits by one day prior to the party hearing session. Timely filed corrections require no request or pre-approval from the Administrative Law Judge, but such corrections are subject to objection at hearing.
 - i. For testimony, a correction may take the form of either a replacement page or an errata sheet that indicates the location of each correction by page and line number.
 - ii. For exhibits, a correction shall take the form of a replacement exhibit.

5. Post Hearing

- a. File any document not filed prior to the party hearing session but received into the record at the party hearing session by 12 noon 3 days after the last day of the party hearing session.
- b. File documentary evidence not previously filed but offered at the party hearing session for which offer into the record is delayed until after the party hearing session by 12 noon 3 days after the last day of the party hearing session unless a different filing date is set at the hearing.
- c. File the affidavit of any witness attesting to the truthfulness and accuracy of that witness's written testimony and exhibits offered into the record in the absence of a live oath or affirmation by 12 noon 3 days after the hearing.
- d. File any objection to or request to offer rebuttal or countervailing evidence for:
 - i. Any evidence offered by a member of the public, by 12 noon 2 days after service of the transcript of the public hearing session. File any response by 12 noon 3 days after the filing of the objection and any reply by 12 noon 2 days after filing of the response.
 - ii. Any documentary evidence not previously filed but identified at the party hearing session for which offer into the record is delayed until after the party hearing session, by 12 noon 3 days after the date of filing. File any response by 12 noon 3 days after the filing of the objection and any reply by 12 noon 2 days after filing of the response.
- e. File any transcript correction by 12 noon 5 days prior to the deadline to file the initial post hearing brief. In a docket without briefs file any transcript correction by 12 noon 5 days after issuance of the final transcript volume.
- f. File any request for leave to present additional evidence [*See* Wis. Stat. § 227.45(2)] or request to take official notice under Wis. Stat. § 227.45(3). Verify

any exhibits offered after the hearing by affidavit. File any response by 12 noon 3 days after the filing of the request and any reply by 12 noon 2 days after the filing of the response.

- g.** File any response to a notice by the Commission of its desire to avail itself of any evidence in its possession under Wis. Stat. § 227.45(2), by 12 noon 3 days after the notice issues. File any reply by 12 noon 2 days after the filing of the response.
- h.** File any request for rehearing or reopening under Wis. Stat. §§ 196.39 or 227.49. File any response by 12 noon 5 days after the filing of the request. The Commission shall accept no reply from the requester.

6. Paper Copies

- a.** Within 5 calendar days after any filed document identified below appears on ERF, a party shall provide to the Commission Records Management Unit:
 - i.** 10 collated paper sets of all exhibits.
 - ii.** 10 collated paper sets of all prehearing testimony that contain any page rendered in color.

B. Hearing Preparation

- 1.** The scope of written testimony is narrowed with each round of filing such that it addresses only the testimony filed in the previous round.
- 2.** Unless a witness retracts a position stated in prior testimony that position is retained. To avoid unduly repetitive testimony, if restating a position stated in prior testimony is necessary, instead of providing that position again, incorporate the prior statement by reference.
- 3.** No evidence shall enter the record solely by citation to an Internet hyperlink or PSC REF #.
- 4.** Any party who compels a witness to appear at hearing shall create a volume of written testimony for that witness in the form of either a deposition or interrogatory. This requirement shall not apply if the party receives consent of the other parties and Commission staff prior to the deadline to file such testimony.
- 5.** A party shall endeavor to identify its employees or members who wish to file written comments or participate at the hearing in support of that party's position and shall use best efforts to organize the testimony of such witnesses in a manner that avoids undue repetition.
- 6.** The applicant shall make an adequate number of personnel with knowledge of the issues in this docket available at each hearing to answer questions from members of the public.
- 7.** Attempt to obtain consent under Wis. Stat. § 807.13, in sufficient time to plan an in-person witness appearance, if necessary.
- 8.** Contact parties, Commission staff and the Administrative Law Judge by 12 noon 1 day prior to the first day of the party hearing session to:
 - a.** Request to take a witness at a specific prearranged time.

- b. Identify the witnesses that a party or Commission staff intends to cross-examine. This does not waive the right to cross-examine other witnesses.
- c. Identify any need to conduct a portion of the hearing *in camera*.
- d. Identify any witness appearing by telephone. *See* Prehearing Conference Memorandum § IV. E. 4.
- e. Request the scheduling of additional hearing time.

C. Confidentiality

1. Wis. Admin. Code § PSC 2.12 already protects from public disclosure any record filed with the Commission under a request for confidential handling that meets the requirements of that section. Such protection renders unnecessary other protective measures available from the Administrative Law Judge to prevent public disclosure of a trade secret, or other confidential research, development, or commercial information filed in this docket unless and until a party demonstrates a specific and credible threat of disclosure.
2. The Commission shall hear *in camera* any oral testimony and cross-examination to which a claim that confidential handling under Wis. Admin. Code § PSC 2.12 should apply and place such testimony in a separate transcript volume. To maintain this claim, the claimant shall file a request as described in Wis. Admin. Code § PSC 2.12(3)(a) along with a redacted copy of the volume consistent with Wis. Admin. Code § PSC 2.12(4) by 12 noon 5 days after issuance of the volume by mail from the Administrative Law Judge. The claimant shall omit from the original volume any affirmation of the veracity of that volume from the court reporter. The redacted volume exists only for Commission staff to evaluate the claim and for public convenience. The redacted volume provides no authoritative record of the proceedings. In the case of any discrepancy between the original volume and the redacted volume, the original volume shall control.
3. The Commission shall afford to any transcript volume receiving confidential handling under Wis. Admin. Code § PSC 2.12 the same handling and retention process and procedure that applies to all other documents which the Commission grants confidential handling.

D. Format Requirements

1. **Prehearing Testimony and Exhibits**
 - a. Paginate every page of prehearing testimony, centered at the bottom, and according to the following convention:
 - “[identify the round of testimony]-[identify the party]-[identify the witness]-[page #]”
 - “Direct-PSC-Smith-1”
 - b. Page numbers for each filing shall begin at “1” and continue in numerical order for that filing.
 - c. Mark every exhibit using a cover page centered at the bottom, and according to the following convention:

- Ex.-[identify the party]-[identify the witness]-[exhibit #]”
- “Ex.-PSC-Smith-1”
- d. Exhibit numbers for each witness shall begin at “1” and continue in numerical order for that witness.
- e. Shade (use no color highlighting) any specific text filed under request for confidential handling treatment as follows:
 - Public Version: “The cost was █████....”
 - Confidential Version: “The cost was \$2.00....”
- f. The public version shall contain no text beneath a redaction that computer manipulation of the document can reveal.
- g. Paginate any written testimony and mark any exhibit filed under request for confidential handling treatment under the proper numbering convention succeeded by the letter “c”.
 - “Direct-PSC-Smith-1c”
- h. Paginate any prehearing testimony and mark any exhibit filed publicly for which another version is filed under request for confidential handling treatment the proper numbering convention succeeded by the letter “p”.
 - “Direct-PSC-Smith-1p”
- i. Paginate any replacement page and mark any replacement exhibit with the same page or exhibit number as the original version, except the letter “r” shall immediately succeed the number.
 - “Direct-PSC-Smith-1r”
 - “Direct-PSC-Smith-1cr”
 - “Direct-PSC Smith-1pr”
- j. Refer to any existing prehearing testimony or marked exhibit by using the assigned page or exhibit number.
 - “As mentioned in Direct-PSC-Smith-15”
 - “I prepared Ex.-PSC-Smith-1....”
- k. Except for the existing testimony or a marked exhibit in this docket, include in any reference to a document already posted on ERF, the ERF identifier in the following format “PSC REF#:_____”.
 - “As demonstrated in the Applicant’s March 2001 report (PSC REF#: 123456)”

2. Paper copies

- a. Organize the paper submission according to the following convention:
 - i. Punch each paper filing to fit a standard three ring binder. Do not include a binder.
 - ii. For testimony, precede each submission with a tabbed 3-hole punched page that identifies the following:
 - “[round of testimony]-[party]-[witness]”
 - “Direct-PSC-Smith”
- b. For exhibits, precede each set of exhibits with a tabbed 3-hole punched page that indicates the following:
 - “Ex.-[identify the party]-[identify the witness]-[exhibit #]”

- “Ex.–PSC–Smith-1”
- c. For any filing made under a request for confidential handling, only submit in paper, the confidential version of the filing. Do not submit a paper copy of the redacted version of the filing.
- d. Every paper copy shall exactly duplicate its corresponding ERF filing, including any color rendering and, except for confidential versions, the PSC REF#.

3. Briefs

- a. For any filed motion, petition, brief, or request, and any response and reply thereto:
 - i. Use 12 point double-spaced type and one-inch margins.
 - ii. Shade (use no color highlighting) any specific text filed under request for confidential handling treatment as follows:
 - Public Version: “The cost was [REDACTED]”
 - Confidential Version: “The cost was \$2.00....”
 - iii. The public version shall contain no text beneath a redaction that computer manipulation of the document can reveal.
 - iv. Cite to the record all noted evidence and assertions of fact.
 - v. Cite to no evidence or assertion of fact outside the record.
 - vi. Limit the number of pages as follows:
 - 1. Initial brief - 30 pages.
 - 2. Reply brief - 15 pages.
 - 3. Non-party brief - 15 pages.
 - 4. Request for rehearing or reopening and response to request - 15 pages.

E. Hearing Procedure

1. Before the call of witnesses, the Administrative Law Judge shall:
 - a. Hear corrections to the Pre-Hearing Witness and Exhibit List.
 - b. Hear any remaining corrections to the prehearing testimony and exhibits.
 - c. Hear any pending or allowable objections.
 - d. Enter the items identified on the Pre-Hearing Witness and Exhibit List into the record, as modified by any corrections and sustained objections.
 - e. The Administrative Law Judge shall hear oral arguments in lieu of briefs at the beginning of the first day of the party hearing session with respect to any pending motion for which the deadline to file briefs would not expire prior to that day.
 - f. If the Administrative Law Judge issues a Pre-Hearing Witness and Exhibit List, the items on the list shall enter into the record at the beginning of the first day of the party hearing session, subject to any verification by the witness, pending or allowable objections, and corrections to the list.
2. Object to the last round of prehearing testimony and exhibits at the beginning of the party hearing session.
3. The sponsor of any pre-filed testimony or exhibit not received into the record may make such filings into an offer of proof. The sponsor of any oral testimony not

received into the record may make a brief oral offer of proof. *See* Prehearing Conference Memorandum § IV. F. 3.

4. The order of appearances and cross-examination by parties shall follow the order of parties as provided in the list above. Commission staff shall follow all parties. Each party and Commission staff may arrange the order of its witnesses.
5. A rebuttable presumption of good cause under Wis. Stat. § 807.13, exists to allow witnesses to appear by telephone.
6. Prior to cross-examination, any witness may offer brief oral testimony that responds only to the last round of prehearing testimony or any subsequent testimony of another witness received at the hearing. Parties and Commission staff shall use best efforts in this matter to avoid undue surprise or prejudice.
7. Limit cross-examination of a witness by the length and scope required to reasonably investigate matters with respect to the testimony of that witness. To investigate beyond these parameters requires the party to have followed the applicable prehearing process for compelling the witness to appear at hearing for direct examination.
8. Provide an adequate number of copies of any document referred to during the hearing, but not previously offered into the record.
9. The Commission intends to webcast all hearings held in Madison. Therefore, the Commission will make no phone lines available to monitor hearing.

F. Post-Hearing Procedure

1. The record closes upon the issuance of the Post Hearing Witness and Exhibit List subject to a request for leave to present additional evidence or take official notice.
2. If before the Commission takes action to review the record a request is filed for leave to present additional evidence or take official notice, the Administrative Law Judge may grant the request upon reasonable terms if the additional evidence or noticed fact is material and good cause prevented its presentation at hearing. However, such request does not automatically stay any Commission open meeting discussion with respect to the existing record, or the issuance of a final decision by the Commission. Either action effects a denial of the request unless otherwise indicated by the Commission.
3. The record on review under Wis. Stat. § 227.55, shall contain any offer of proof. However, no offer of proof shall enter the evidentiary record unless the Commission or a court overturns the ruling to exclude the evidence and provides an opportunity for cross-examination or the offer of countervailing evidence.

G. ALJ Orders

1. Unless made at hearing, the Administrative Law Judge shall act only on a request officially filed.
2. Written orders and notices of the Administrative Law Judge shall be issued to parties using only the Commission e-mail service list.

3. Any request that contains a representation or certification of the consent of the parties and Commission staff shall be granted without order unless otherwise ordered within 3 days of filing.
4. Any request to which a response is authorized, but no timely response is filed, shall be granted without order, unless otherwise ordered within 3 days after the deadline to respond.
5. The Administrative Law Judge may waive or modify the application of this order in particular circumstances for good cause.



Michael E. Newmark
Administrative Law Judge

MEN: DL:00727485

APPENDIX E:

ORDER TO REOPEN

DATED MAY 14, 2013

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin 2535-CE-100

ORDER TO REOPEN

This is the Order on the Highland Wind Farm, LLC (Highland) Petition to Reopen, or in the alternative, for Rehearing ([PSC REF#: 183159](#)). The Commission considered this Petition, and responses filed by intervenors Forest Voice and the town of Forest, at its open meeting on May 2, 2013. The proceeding is reopened under Wis. Stat. § 196.39(1).

A reopening is appropriate under the unique circumstances of this case. However, the proceeding is reopened for the limited purpose of taking evidence on whether and how Highland's proposed project can meet the noise standards in Wis. Admin. Code ch. PSC 128.

In a separate notice, the Administrative Law Judge shall issue a Notice of Prehearing Conference. That Notice shall identify specific issues to be addressed at hearing. While sufficient time should be scheduled to provide intervenors with the opportunity to provide countervailing evidence, this reopened proceeding should be completed as soon as practicable.

Because this matter is reopened under the Commission's own motion under Wis. Stat. § 196.39(1), the Commission does not reach a decision regarding Highland's contention that the proceeding be reopened under Wis. Stat. § 227.49(3).

Commissioner Nowak dissents and writes separately (attached).

Dated at Madison, Wisconsin, this 10th day of May, 2013.

By the Commission:



Sandra J. Paske
Secretary to the Commission

SJP:JAL:cmk:DL:00722505

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

DISSENT OF COMMISSIONER ELLEN NOWAK

I dissent from the Commission's decision to reopen the Highland Wind Farm application for a Certificate of Public Convenience and Necessity (CPCN) to build a 102 megawatt wind farm (Project) under Wis. Stat. § 196.39(1). Highland Wind Farm, LLC (applicant), did not present any reason why the Commission should exercise its discretion and reopen the proceeding. The Commission's decision allows the applicant to present a new legal argument after its previous arguments failed, which is not proper justification for reopening. Moreover, the applicant will be presenting a redesigned Project under its own interpretation of Wis. Admin. Code § PSC 128.14, a concept which was vehemently rejected by the applicant during the original proceeding.

The applicant asked the Commission to reopen the case in order present new modeling based on a combination of technical information in the record and a novel legal interpretation of the wind siting laws. The applicant is asking the Commission to consider curtailment as a design factor and to allow new modeling which demonstrates that the Project is capable of operating below the sound limits set by the Commission if curtailment is used.

Wisconsin Stat. § 196.39(1) gives the Commission the authority to reopen a case, following the issuance of a final order, for any reason. It is a useful tool, but the Commission

must be mindful of overusing it. While we clearly have the authority, it is not appropriate to exercise that authority in order to allow a new legal argument or approach when previous arguments have been rejected. Reopening this docket sets a precedent whereby losing parties will need nothing more than a new approach on an argument to have a final decision reopened.

The majority's Order to Reopen states that a "reopening is appropriate under the unique circumstances of this case." This case, however, is not unique. It is not a unique situation for the Commission to issue a decision that an applicant does not anticipate, and doing here so does not warrant giving this applicant the opportunity to present a different legal opinion or different modeling to support an application. The information presented by the applicant is not new. It could have been, but was not, explored during the initial case. Nothing has changed since the Commission's initial rejection of the application. Thus, there is nothing unique about this proceeding.

Parties need and deserve certainty in our decisions. The intervenors in this proceeding spent significant time and resources evaluating the application and record presented by the applicant. Only after the CPCN was rejected did the applicant concoct a new legal theory to meet the Wis. Admin. Code ch. PSC 128 sound limits. The intervenors will now be asked to address different argument, and possibly on an expedited schedule.

The Order to Reopen also states that this reopener is for the limited purpose of taking evidence on whether and how the applicant's proposed Project can meet the noise standards in Wis. Admin. Code ch. PSC 128, but that is an oversimplification. Changing one model parameter can have a significant effect on the results. For example, changing the speed at which the turbines operate can affect bird and bat mortality rates. Similarly, micro-siting can affect

shadow flicker on nearby residences. We would be remiss to consider one model parameter in isolation, and I expect the parties will fully re-address all of these issues.

In addition to the new legal argument, the applicant states it will present what would be considered, under the applicant's interpretation of Wis. Admin. Code § PSC 128.14, a redesign of the project.¹ The applicant spent significant time and energy rejecting the option of redesigning the Project to meet sound limits during the original application process.² The intervenors were willing to present redesign options, but the applicant continually (and successfully) argued that the evaluation was of the Project as presented, and that any suggestion of redesign should be struck from the record.

The applicant also successfully argued that any redesign proposal by the intervenors, which was presented in November, should have been presented with direct testimony in August, before the technical hearing, so it could have been fully vetted during the proceeding.³ However, now that the Project, as presented, was rejected by the Commission, the applicant is more than willing to propose a "design" change, along with an expedited timeline for the Commission and other parties to evaluate the proposal.

If the Commission agrees with the applicant's interpretation of Wis. Admin. Code § PSC 128.14, it is illogical to allow the applicant to contradict an argument on which they relied throughout the case. A redesigned project should require a new CPCN application.

¹ The applicant interprets Wis. Admin. Code §§ PSC 128.14(2)-(4) to allow curtailment as a design factor, meaning curtailment can be used in the design phase of the project to show compliance with applicable noise standards. Under that interpretation, changing the curtailment parameters would amount to a project redesign. I do not necessarily agree with this interpretation.

² Highland Response Brief to Town of Forest Appeal (Dec. 10, 2012) at 6-7. (PSC REF#: 177677.)

³ *Id.* at 7.

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I also disagree with my colleagues' position that we should reopen this case because we expect the applicant to file a new CPCN application if we choose not to reopen. Re-filing a new application is an option for any applicant. The mere threat of doing so should not affect our decision on whether to reopen. This frustrates the need for finality to our decisions.

For the reasons above, I dissent from the decision to reopen the Highland Wind Farm CPCN application under Wis. Stat. § 196.39(1).

EN:EN:DB:sp\2535-CE-100 Dissent.docx

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APPENDIX F:

FINAL DECISION

DATED MARCH 15, 2013

SERVICE DATE
Mar 15, 2013

PSC REF#:182254

Public Service Commission of Wisconsin
RECEIVED: 03/15/13, 11:28:00 AM

PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

FINAL DECISION

This is the Final Decision regarding the application of Highland Wind Farm, LLC (Highland), to construct a new wind electric generation facility. Highland is seeking a Certificate of Public Convenience and Necessity (CPCN) from the Commission, as provided in Wis. Stat. § 196.491(3). Highland proposes to construct this facility in the towns of Forest and Cylon, St. Croix County, Wisconsin. The project includes construction of up to 44 wind electric generating turbines, depending on turbine model selected, and associated facilities to interconnect with the existing Northern States Power Company-Wisconsin electric transmission system in the area. The project would have a generating capacity of up to 102.5 megawatts (MW).

The CPCN application is DENIED. Highland's Emergency Request filed on February 22, 2013, is also DENIED.

Introduction

On December 19, 2011, pursuant to Wis. Stat. § 196.491 and Wis. Admin. Code chs. PSC 4 and 111, Highland filed with the Commission an application for a CPCN to construct its proposed project. The Commission found the application to be complete on March 29, 2012. A Notice of Proceeding was issued on April 20, 2012. Wisconsin Stat. § 196.491(3)(g) requires that the Commission take final action within 180 days after it finds a CPCN application complete unless the Commission receives an extension from the Dane County Circuit Court. On August 13,

Docket 2535-CE-100

2012, the Circuit Court granted the Commission an extension of 180 days. The Commission must now take final action on or before March 25, 2013, or the application is approved by operation of law.

A prehearing conference was held on May 30, 2012. Requests to intervene were granted to Clean Wisconsin (Clean WI), Forest Voice, Inc. (Forest Voice), RENEW Wisconsin (RENEW), and the town of Forest. The parties, for the purposes of review under Wis. Stat. §§ 227.47 and 227.53, are listed in Appendix A.

Subsequently, requests for intervenor compensation (IC) were filed by Forest Voice and Clean WI. By *Order* dated July 20, 2012, the Commission modified and approved Forest Voice's application for IC in the amount of \$20,000. By *Order* dated June 25, 2012, the Commission modified and approved an application for IC filed by Clean WI in the amount of \$43,000. By *Order* dated December 3, 2012, the Commission modified and approved a supplemental IC application of Clean WI and Forest Voice in the amount of \$21,929, for measurement of infrasound and low-frequency noise (ILFN)¹ at the Shirley Wind Farm (Shirley).

The Commission held technical hearing sessions in Madison on October 9, 10, and December 3, 2012. Additional technical hearing sessions regarding ILFN measurements at Shirley were held in Madison on January 17 and 18, 2013. Public hearings were held in the project area on October 11, 2012, in Forest, Wisconsin.

At the technical sessions, expert witnesses offered testimony and exhibits on behalf of Clean WI, Forest Voice, the town of Forest, and Highland. The Commission conducted its hearings as Class 1 contested case proceedings, pursuant to Wis. Stat. §§ 196.491(3)(b),

¹ Infrasound is generally defined as sounds below 20 hertz (Hz), and low frequency noise as sounds between 20 and 200 Hz.

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227.01(3)(a), and 227.44. At the public hearings in Forest, the Commission accepted both oral and written testimony from members of the public. The Commission also requested and received comments from members of the public through its Internet web site.

The issue for hearing, as determined at the May 30, 2012, prehearing conference, was:

Does the project comply with the applicable standards under Wis. Stat. §§ 1.11, 1.12, 196.025, 196.49, and 196.491, and Wis. Admin. Code chs. PSC 4 and 111?

Initial and reply briefs were filed on December 17, 2012, and January 3, 2013, respectively.

Initial briefs opposing the project, or aspects of it, were filed by Forest Voice and the town of Forest. Clean WI and Highland filed initial briefs in support of the project. Reply briefs were filed by Clean WI, Forest Voice, the town of Forest, and Highland. Additional initial and reply briefs regarding the ILFN portion of the proceeding were filed by Clean WI, Forest Voice, the town of Forest, and Highland on January 29 and 31, 2013, respectively.

The Commission discussed the record in this matter at its open meeting of February 14, 2013. On February 22, 2013, Highland filed an “Emergency Request” requesting that the Commission reconsider its “preliminary determination” in this docket and for leave to present additional evidence. The Commission further discussed this matter at its open meeting of March 1, 2013.

Findings of Fact

1. Highland is proposing to construct a wholesale merchant plant, as defined in Wis. Stat. § 196.491(1)(w). Highland will not provide retail electric service, nor is it a public utility or an affiliate of a public utility.

2. The Highland project, based upon the design as presented and the accompanying modeling in this record, is not in the public interest and would create undue adverse impacts on

public health and welfare, and individual hardships because there are multiple nonparticipating residences where Highland has failed to demonstrate compliance with the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA (A-weighted decibels).

Conclusions of Law

1. The Commission has jurisdiction under Wis. Stat. §§ 1.11, 1.12, 44.40, 196.02, 196.025, 196.395, and 196.491 to issue this Final Decision.
2. The Commission must consider, under Wis. Stat. § 196.491(3)(dg) and Wis. Admin. Code § PSC 128.02(3), whether the Highland project is consistent with the standards set forth in Wis. Admin. Code ch. PSC 128 when reviewing an application filed on or after March 1, 2011.
3. Pursuant to Wis. Admin. Code § PSC 128.02(4), nothing in Wis. Admin. Code ch. PSC 128 precludes the Commission from giving individual consideration to exceptional or unusual situations and applying requirements to the Highland project that may be lesser, greater, or different from those provided in Wis. Admin. Code ch. PSC 128.
4. The Commission's Environmental Assessment (EA) complies with Wis. Stat. § 1.11.

Opinion

Project Description

Highland proposes to construct a new wind electric generation facility in the towns of Forest and Cylon, in northeast St. Croix County, Wisconsin. The project would include up to 44 wind turbines with an electric generating capacity of up to 102.5 MW, depending on the turbine model selected. The facility would consist of the wind turbines, access roads to the turbines, an

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underground 34.5 kilovolt cable system to collect the power produced at each turbine, a new interconnection substation to connect the facility to the existing electric transmission system, an operations and maintenance building, and associated facilities. All of the wind turbines would be located in the town of Forest. A portion of the electric collector circuits and the interconnection substation would be located in the town of Cylon.

The project area consists of about 26,500 acres of predominantly agricultural land. Highland holds agreements with landowners for about 6,200 acres within the project area upon which project facilities could be located. The community of Forest lies in the southwestern corner of the project area.

Highland proposes to use one of three turbine models for the project. The overall height of the turbines would be between 491 and 497 feet, depending on the turbine selected. The turbine models, generating capacity, number required, and total facility nameplate generating capacity are included in Table 1, below.

Table 1 Wind turbine models under consideration

| Turbine Model | Turbine Nameplate Capacity | Required Number of Turbines | Project Nameplate Capacity |
|----------------------|-----------------------------------|------------------------------------|-----------------------------------|
| Nordex N100 | 2.5 MW | 41 | 102.5 MW |
| Nordex N117 | 2.4 MW | 42 | 100.8 MW |
| Siemens SWT-2.3 | 2.3 MW | 44 | 101.2 MW |

Highland has identified 41 primary and 11 alternate sites in the project area capable of supporting wind turbine installations. Highland states that these sites have adequate wind resources and are acceptable considering environmental and other concerns.

In its CPCN application, Highland provided a proposed project layout consisting of the preferred 41 turbine sites for each of the wind turbine models under consideration. In response to

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concerns expressed by residents of the project area at the public hearing, Highland provided revised project layouts, which use some alternate turbine sites rather than Highland's original preferred sites. These revised project layouts include 41, 42, and 44 turbines for the Nordex N100, Nordex N117, and Siemens SWT-2.3 turbines, respectively. Highland indicated at the conclusion of these proceedings that it would not object should the Commission wish to exclude the Nordex N100 model from consideration for this project.

Noise

Wisconsin Admin. Code § PSC 128.14(3) states:

PSC § 128.14(3) NOISE LIMITS. (a) Except as provided in par. (b), subs. (4)(c) and (5), an owner shall operate the wind energy system so that the noise attributable to the wind energy system does not exceed 50 dBA during daytime hours and 45 dBA during nighttime hours.

Of the two common types of wind noise limits, absolute and ambient-based, the Wis. Admin. Code § PSC 128.14 noise limits are considered to be absolute limits. Absolute limits are maximum sound levels from wind facilities at sensitive receptors, regardless of the ambient sound level. Ambient-based noise limits typically specify some increment above the ambient sound level that may not be exceeded.

The intent of the Wind Siting Council when considering the Wis. Admin. Code ch. PSC 128 noise limits is documented in the *Wind Siting Council Final Recommendations to the Public Service Commission*, which states:

For all system size categories, the noise attributable to the system should never be allowed to exceed 45 dBA at night or 50 dBA during the day, as measured at the outside wall of any nonparticipating residence or occupied community building. As required by the Commission's *Measurement Protocol for Sound and Vibration*

Assessment of Proposed and Existing Wind Electric Generation Plants (Noise Protocol), Highland

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provided as part of its CPCN application noise modeling predicting the noise impact of the proposed project at nonparticipating residences in the project area. The sound contours were generated using the WindPRO computer modeling software, which implements International Organization for Standardization (ISO) Standard 9613-2. The sound contours provided in Highland's CPCN application use a ground absorption coefficient setting of 0.0 in the WindPRO software. Commission staff's noise analysis of the project as initially proposed was completed solely on the modeling included in Highland's CPCN application. Highland later provided WindPRO modeling using a ground absorption coefficient of 0.5, for revised project layouts intended to address concerns expressed by residents of the project area at the public hearing. Clean WI advocated for using a ground absorption coefficient of 0.5, contending that it was a more realistic predictor given the type of terrain at the Highland project site and that the use of 0.0 would overstate the expected sound levels from the project. The town of Forest and Forest Voice offered testimony in support of the more conservative 0.0 ground absorption coefficient. Modeling using a ground absorptivity coefficient of 0.0 was not provided for the revised project layouts.

In sound modeling, a ground absorption coefficient is used to characterize the ability of the ground to attenuate sounds. A ground absorption coefficient of 0.0 represents hard, acoustically reflective ground, while a value of 1.0 represents highly-absorptive conditions. A ground absorption coefficient of 0.5 represents semi-absorptive conditions. The lower the ground absorptivity value used, the higher the predicted sound level will be at residences represented in the model. Section 7.3 of ISO Standard 9613-2 specifies criteria for use of ground absorption coefficient values for various ground conditions. Wisconsin Admin. Code § PSC 128.14 does not

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address ground absorption. Use of a 0.0 ground absorption coefficient would result in the highest, or worst-case, predicted sound levels from a proposed project.

The results of Highland’s computer modeling show compliance with the Wis. Admin. Code § PSC 128.14(3) daytime noise limit of 50 dBA for the original project layout using the ground absorptivity coefficient of 0.0. However, the modeling shows that the Wis. Admin. Code § PSC 128.14(3) nighttime noise limit of 45 dBA would not be met for between 20 and 45 nonparticipating residences. These results are summarized in the following table by turbine model alternative:

| | Total | 45.1-46.0 dBA | 46.1-47.0 dBA | 47.1-48.0 dBA | 48.1-49.0 dBA | 49.1-50.0 dBA |
|---------------------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Nordex N100/100 | 45 | 18 | 18 | 7 | 2 | 0 |
| Nordex N117/91 | 27 | 18 | 7 | 2 | 0 | 0 |
| Siemens SWT-2.3-113 | 20 | 16 | 4 | 0 | 0 | 0 |

The Noise Protocol also requires that the post-construction noise study demonstrate compliance with applicable noise limits. Mitigation options to achieve compliance after construction is complete are limited should an exceedance of the applicable noise limit be identified during any post-construction noise study. Wisconsin Admin. Code § PSC 128.14(4)(c) authorizes the use of operational curtailment as a method available to comply with the audible noise standards set forth in Wis. Admin. Code § PSC 128.14. However, at the present time, these mitigation options are limited to operating the turbines in noise reduction modes, or not operating certain turbines under certain conditions. Such operational curtailment strategies often result in reduced electrical output from the affected turbines. Further, use of operational curtailment to ensure compliance with the audible noise standard could often place the burden on the impacted

landowner to complain and demonstrate non-compliance before operations are curtailed. (*See Wis. Admin. Code §§ PSC 128.14(4)(b).*)

As such, the Commission finds that it is prudent to ensure compliance with applicable audible noise limits using conservative computer modeling prior to construction. These sound modeling assumptions may vary from case to case depending upon the specific facts and circumstances of any given case. The Commission recognizes that modeling is imperfect and merely a predictive tool. Given the inherent imperfections in the use of modeling, the Commission finds that it is reasonable to err on the side of conservative assumptions so as to reduce the risk of under-stating the potential impacts on nonparticipating landowners.

The Commission finds that the sound modeling in this case using a ground absorption coefficient of 0.0 for this project is reasonable, consistent with ISO Standard 9613-2, and supported by this record. The fact that Highland used this factor in its initial modeling is also a good indication that even the applicant, at least initially, concluded that 0.0 is reasonable.

The Commission further finds that it is reasonable to require Highland to show compliance with the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA under worst-case computer modeling assumptions using a ground absorption coefficient of 0.0. The Commission recognizes that operational curtailment may be used after the turbine is constructed to achieve compliance with this limit. Although the Commission does not make a definitive conclusion regarding whether curtailment should be considered in the design phase, or only as a mitigation method to comply with noise standards after the system is built, it does conclude that there is insufficient evidence in this record to demonstrate that this is a viable pre-construction design tool. There is limited information in this record regarding curtailment other than statements

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by Highland that it will comply with the noise standards using curtailment as a mitigation strategy, if necessary. Included in the record, is also some limited information that the proposed turbines have a noise reduction mode that could be used. Highland concedes that it did not run any models that included operation of the turbines in noise reduction modes.

Wisconsin Admin. Code § PSC 128.14(2)(c) requires that an owner “design a wind energy system to comply with the noise standards in this section under planned operating conditions.” Highland has not provided modeling using the most conservative modeling assumptions that demonstrate that under planned operating conditions the project complies with the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA. The Commission concludes that it is appropriate to deny Highland’s application for a CPCN. Highland may either request reopening of this case under Wis. Stat. § 196.39, petition for rehearing under Wis. Stat. § 227.49, or file a new application under Wis. Stat. § 196.491 if and when it can demonstrate through sound modeling using a ground absorption coefficient of 0.0 that the project as designed and operated will not, based upon the model results, have any nonparticipating residences that exceed the Wis. Admin. Code § PSC 128.14(3) nighttime audible noise limit of 45 dBA.

Highland’s Emergency Request

Following the Commission’s discussion of the record in this proceeding, and prior to issuance of this Final Decision, Highland filed an “Emergency Request” asking that the Commission reconsider its “preliminary determination” in this docket and for leave to present additional evidence pursuant to Paragraph IV.A.5.f of the Prehearing Conference Memorandum.² Forest Voice filed a preliminary response in opposition to the request and requested an extension

² The Prehearing Conference Memorandum permits such filings consistent with Wis. Stat. § 227.45.

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of time to more fully respond. Other parties to this proceeding also filed responses to this request, and Highland filed replies thereto.³ One non-party attempted to weigh in on the request.⁴

Highland's Emergency Request comes after almost one year of work on this docket by Commission staff and others,⁵ after more than 300 public comments have been received, and after six days of hearings. It also comes on the eve of the Commission's statutory deadline pursuant to Wis. Stat. § 196.491(3)(g) to take final action. Highland concedes its request is "extraordinary." (Request, at p. 16.)

Highland's stated basis for this extraordinary request is, in sum, to salvage its business investment:

If the Commission denies the Application rather than conditioning its approval, the value of Highland's \$2.0 million investment and six years of labor will evaporate. The investment will be lost because there is no time left for refileing a new application, seeking rehearing, or seeking reopening of a final order. If an order conditionally approving the Application is not issued before March 25, 2013, Applicants will miss the opportunity to participate in the recently announced Xcel Energy Wind RFP process and the chance to use production tax credits to help finance the Project, opportunities which are critical to the ultimate success of the Project.

(Request, at p. 2.) Clean Wisconsin and RENEW support Highland's request. Forest Voice and the town of Forest object to Highland's request.

Highland's request for this Commission to reconsider its "preliminary determination" has no statutory basis. Only final decisions or orders are subject to reconsideration or rehearing. *See* Wis. Stat. §§ 196.39 and 227.49. While the Commission discussed the record and made

³ *See* Renew Wisconsin's Comments on Highland Wind Farm's Emergency Request for Leave to Present Additional Evidence; Clean Wisconsin's Comments on Highland Wind Farm's Emergency Request for Reconsideration and Leave to Present Additional Evidence; Town of Forest's Response to Highland's Emergency Request; Response to Forest Voice's Preliminary Statement in Opposition to Highland Wind Farm LLC's Request to Reconsider and Present Additional Evidence; Highland Wind Farm LLC's Response to Town of Forest's Response to Highland's Emergency Request.

⁴ As Wis. Stat. § 227.45 provides the opportunity for parties to comment, the Commission rejected this response and did not consider it.

⁵ In its Emergency Request, Highland notes that it has been working on this project for six years. (Request, at p. 1.)

preliminary determinations based upon that discussion at its open meeting of February 14, 2013, there is no decision subject to reconsideration or appeal unless and until the written Final Decision is approved by the Commission and signed by the Secretary to the Commission. The fact that a private service may make available a purported written transcript of the open meeting discussion does not elevate that discussion to the status of a final order that can be reviewed or appealed. The Commission speaks through its written Final Decision. Permitting parties to preemptively request reconsideration based upon an open meeting discussion record runs contrary to the law and sound Commission practice.

Highland argues “[n]one of the procedural remedies typically available in the post-final decision phase, such as formal rehearing or reopening, can be completed in time for the investment to be rescued.” (Request, at p. 2.) The Commission finds that Highland has not offered sufficiently compelling reasons to deviate from past Commission practice and the statutorily prescribed review process. Highland began its work on this project and filed this application more than one year ago—long before the recently announced Xcel Energy Wind Request for Proposals (RFP). While changes in the energy market may make this RFP particularly appealing, Highland started this project long ago without a particular RFP opportunity in sight and ran the risk that changes in the marketplace could occur. The Commission finds that the fact that this business risk assumed by Highland has apparently come to fruition does not warrant side-stepping the statutory post-decision review process. Accordingly, the Commission denies Highland’s unprecedented request.

Even if the Commission were to conclude that an extraordinary circumstance was present to justify deviation from past Commission practice and the normal statutory process, the

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Commission denies this request on due process grounds. Forest Voice argues that granting the request “would be an extraordinary denial of due process to Intervenor.” (Forest Voice Response, at p. 1.) The Commission agrees.

Highland requests that the Commission accept new evidence that Highland contends addresses the concerns with the project that the Commission expressed at its open meeting of February 14, 2013. Forest Voice notes that Wis. Stat. § 227.45(2) requires that “every party shall be afforded adequate opportunity to rebut or offer countervailing evidence.” Highland counters, contending that in the 21 business days between the date of filing of its Emergency Request and before the CPCN deadline, there is time for Forest Voice and the other parties to respond. The Commission disagrees.

Forest Voice notes that Highland “had notice for months that whether the proposed turbines would meet the PSC 128 noise standards is an issue in this docket, and there can be no excuse or exception for the failure to offer this evidence at an earlier stage in this proceeding when it would have been subject to thorough review and cross-examination.” (Forest Voice Response, at p. 5.) To the extent, as Highland claims, the new evidence it now presents is in response to concerns raised by the Commission, there is no reason why that new evidence should not be subject to the same scrutiny as all of the other evidence that has been entered into this record. To be fair to all of the parties and interested persons, more than 21 days is necessary. Unfortunately, the CPCN statutory deadline cannot, as a matter of law, be extended any further. Too much time and effort by all of the parties, the public, and Commission staff have gone into this proceeding to jeopardize it now at the eleventh hour with a potential procedural misstep that fails to provide an adequate opportunity for all of the parties to rebut or offer countervailing evidence. This is particularly true

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where there are other avenues of review available to Highland to have any new or additional evidence considered after the issuance of this Final Decision. As a result, the Commission denies Highland's request to accept additional evidence at this late stage in the proceeding. As noted previously, Highland is free to offer this additional evidence in a subsequent reopener, a request for rehearing, or a new application.

Compliance with the Wisconsin Environmental Protection Statute

Although this application is denied for the reasons stated, the Commission concludes its environmental review in this docket has been appropriate. Wisconsin Stat. § 1.11 requires all state agencies to consider the environmental impacts of "major actions" that could significantly affect the quality of the human environment. In Wis. Admin. Code ch. PSC 4, the Commission has created three tables that categorize the types of actions it undertakes for purposes of complying with this statute. Table 1 identifies proposed projects that qualify as major actions, for which an environmental impact statement (EIS) is always needed; Table 2 lists proposals with the potential to significantly affect the quality of the human environment, for which the Commission will produce an environmental assessment (EA) in order to determine whether an EIS is needed; and Table 3 describes actions that normally require neither an EIS nor an EA. The Highland project fits within Table 2, item br., as a new wind-powered electric generating facility that is 10 MW or larger. To prepare either an EA or an EIS, Commission staff gathers available information from previously completed studies, published research literature, public comments, staff experience, site visits, and other agencies and experts. All of this information is then compiled in an EIS or EA to inform the public and the Commission about the expected and potential impacts of the project.

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An EA dated July 18, 2012, was prepared by Commission staff in consultation with the Wisconsin Department of Natural Resources. Based on the detailed environmental review of this project, a determination was initially made that the potential impacts of the project would not have a significant effect on the human environment and, therefore, preparation of an EIS for the proposed project was not required.

The Commission received information in these proceedings regarding ILFN. A team of acoustic experts obtained ILFN measurements at three residences near Shirley during the period December 4 through 7, 2012. The results of the team's ILFN measurements, *A Cooperative Measurement Survey and Analysis of Low Frequency and Infrasound at the Shirley Wind Farm in Brown County, Wisconsin*, (Shirley Report) has been filed using the Commission's Electronic Regulatory Filing (ERF) system. ([PSC REF#: 178263.](#))

Subsequently, after the Shirley Report was filed, the Commission prepared a Supplemental EA focusing solely on the information provided in the report. A Preliminary Determination that no EIS was necessary was issued on January 24, 2013. Comments on the Preliminary Determination were collected through February 8, 2013. Based on the additional review presented in the Supplemental EA, the initial determination was affirmed that the potential impacts of the project would not have a significant effect on the human environment.

The Commission finds that this analysis and review meet the requirements of Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4. The EA and Supplemental EA compiled information regarding the potential environmental and health impacts of the project to inform the Commission's decision and concluded that an EIS was not necessary or required. The EA,

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Supplemental EA, and the additional record evidence submitted by the parties thoroughly examine the potential health effects.

Future Applications

As Highland's application is the first such application received since the promulgation of Wis. Admin. Code ch. PSC 128, and given some of the unique issues presented in this proceeding, the Commission will address some of these issues to provide guidance to Highland and future applicants seeking Commission approval of wind energy systems in Wisconsin.

Land Use and Development Plans

Wisconsin Stat. § 196.491(3)(d)6. requires, in order to approve a CPCN application, that the Commission must find that the proposed facility "will not unreasonably interfere with the orderly land use and development plans for the area involved."

While it is not necessary for the Commission to make this finding in this case given the Commission's denial of Highland's application on other grounds, the Commission observes that the statute recognizes that a project may have some interference with the land use and development plans for the area, but that any such interference cannot be unreasonable. The Commission also notes that the statute provides that the land use and development plans must be "orderly." The statute does not define "orderly" and prior Commission decisions have not elaborated upon the meaning of this term. In prior cases, the Commission has found that development of wind generation facilities in rural, agricultural project areas did not unreasonably interfere with the land

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use and development plans at issue in those proceedings.⁶ Any future wind development in Wisconsin will most likely be in rural areas. An issue that may require Commission decision in the future is whether a land use plan that prohibits the construction of wind energy systems in such areas would be considered “orderly” within the meaning of the statute or whether any such plan would be legal.⁷

Noise Modeling

As discussed in this Final Decision, the Commission concludes that use of a ground absorption coefficient of 0.0 is the appropriate factor to be used in the pre-construction sound modeling for this case. The Commission is not, however, prepared at this time to direct Commission staff to modify the Commission’s Noise Protocol to select a single ground absorption factor to be used in all cases. The Commission recognizes that neither a factor of 0.0 nor a factor of 0.5 is perfect as neither may be representative of the absorptive conditions of the ground year-round. The Commission found it helpful to have models using both 0.0 and 0.5 ground absorption coefficients. Future applicants should conduct their pre-construction sound modeling using both 0.0 and 0.5 ground absorption coefficients, and submit both models to the Commission with the application.

⁶ *See, e.g., Application of Wisconsin Electric Power Company for a Certificate of Public Convenience and Necessity to Construct Wind Electric Generation Facility and Associated Electric Facilities, to be located in the Towns of Randolph and Scott, Columbia County, Wisconsin, docket 6630-CE-302, Final Decision (January 22, 2010) (PSC REF#: 126124); Application of Forward Energy LLC for a Certificate of Public Convenience and Necessity to Construct a Wind Electric Generation Facility and Associated High Voltage Electric Transmission Facilities, to be Located in Dodge and Fond du Lac Counties, Wisconsin, docket 9300-CE-100, Final Decision (July 14, 2005) (PSC REF#: 37618).*

⁷ Wisconsin Admin. Code § PSC 128.13(2)(a) prohibits a political subdivision from establishing “long-term land use planning requirements or practices that preclude construction of a particular type, or any type, of wind turbine or wind energy system within the political subdivision’s jurisdiction, except as provided in s. 66.0401(4)(f)2., Stats.”

Audible Noise and Infrasound Low-Frequency Noise Testing

There was discussion in the record for this proceeding as to how compliance with an audible noise requirement is to be determined. As discussed previously in this Final Decision, Wis. Admin. Code § PSC 128.14(3) provides that “an owner shall operate the wind energy system so that the noise attributable to the wind energy system does not exceed 50 dBA during the daytime hours and 45 dBA during the nighttime hours.” The rule does not articulate the methodology that is to be used to measure compliance or what constitutes compliance with this absolute limit. Clean WI offered evidence in this case that in order to meet an absolute limit 100 percent of the time, the design goal of the project would need to be up to 10 dBA below the noise limit. This would be necessary to avoid temporary excursions above the noise limit which Clean WI witness David Hessler stated are unavoidable. Mr. Hessler also testified that if measured sound level is in compliance with the limit 95 percent of the time or more, he would consider the development to be in compliance.

The Commission’s decision in this proceeding and its direction to future parties to use conservative sound modeling assumptions such as a 0.0 ground absorption coefficient is intended to minimize the possibility of temporary excursions above the noise limit and may achieve the same objective as having a lower design goal for projects as offered by Mr. Hessler. However, the Commission recognizes that there may be unavoidable circumstances notwithstanding the use of the most conservative modeling where curtailment may be necessary to avoid or respond to temporary excursions above stated audible noise limits. In future cases, it may be helpful for the parties to develop the record on this issue further and submit for the Commission’s consideration

some sort of percentage-based standard that takes into account the possibility of infrequent and unavoidable exceedances of stated limits.

Another item that would be helpful in future cases is a better developed record on the proposals for the methodologies that will be used post-construction to demonstrate compliance with the established audible noise limits. The Commission's Noise Protocol requires applicants to take post-construction measurements. This demonstration of compliance is included in the post-construction noise studies for the Glacier Hills Wind Project, docket 6630-CE-302, ([PSC REF#: 169890](#)) and all other wind projects previously authorized by the Commission.

At typical setback distances, project-only and ambient sound levels are often of similar magnitudes, meaning that any total measured sound level is influenced by both sources. As such, it is not appropriate to assume that any measured sound level is entirely from the project or the ambient. Because Wis. Admin. Code § PSC 128.14 includes an absolute noise limit, the project-only sound level must be calculated by measuring the total sound level with the wind turbines operating, then subtracting the ambient sound level occurring under similar wind and atmospheric conditions. While there are difficulties involved in making these calculations, two methods have been used for previous post-construction noise studies filed with the Commission:

- Place continuously recording sound level monitors at points of interest within the project area to record the combined ambient and project sound levels. Place additional sound level monitors well away from the project, but in areas with similar ambient sound levels and use those measurements to estimate the likely ambient sound level within the project area. Measure the sound levels both in the project area

and away from the area over several days, correlate the measurements, and estimate the project-only sound level.

- Take ten-minute sound level measurements on a moderately windy day with all wind turbines within several miles of the measurement points operating, then take additional measurements immediately afterward with the turbines shut down and the blades parked.

Under the second method, the wind speed must be within a narrow range, such that the turbines are operating, yet the wind speed at the measurement point is not so high that the measurements are highly influenced by “pseudo-noise” associated with air passing over the sound level meter microphone.

While these two methodologies have been used in the past, there may be others that should be considered. Having a clearer understanding at the onset as to the methodologies that will be used to show compliance would be helpful for the Commission and the public. Future applicants are encouraged to work closely with Commission staff in developing the post-construction noise testing study parameters, methodologies, and testing locations.

The Commission received information in these proceedings regarding ILFN. A team of acoustic experts obtained ILFN measurements at three residences near Shirley during the period December 4 through 7, 2012. This team of experts consisted of Messrs. George F. and David M. Hessler of Hessler and Associates, Inc., Dr. Bruce Walker of Channel Islands Acoustics, Dr. Paul Schomer of Schomer and Associates, Inc., and Mr. Robert Rand of Rand Acoustics. Michael Hankard of Hankard Environmental, acoustical consultant for the Highland and Shirley projects, accompanied, assisted, and observed the investigators on behalf of Highland on Wednesday,

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December 5, 2012. These experts documented the results of the team's ILFN measurements in the Shirley Report.

Subsequent to the filing of the Shirley Report, and in cooperation with Mr. Wade Bray of HEAD Acoustics, additional analysis of the data gathered during the testing was conducted by Mr. Richard James on behalf of Forest Voice. Mr. James was not present while the measurements were gathered.

The Commission was presented with alternatives in this proceeding as to whether it should: (1) direct Commission staff to modify the Commission's Noise Protocol to require collection of post-construction ILFN sound measurements similar to those collected by the experts at Shirley for future wind electric generating facilities constructed in Wisconsin; (2) include in any future Commission order authorizing a new wind electric generating facility a requirement that the ILFN measurements be collected with the full cooperation of the development operators; and (3) require Highland to, as part of its post-construction noise study, undertake one or more specific tasks to further study ILFN.

The Commission thanks the collaboration of acousticians who worked cooperatively to provide the Commission with information on ILFN. This is a developing issue. The testing report, as well as additional substantial testimony, was included in this record on the subject. The Shirley Report documented the measurable presence of ILFN, but was not intended to be an exhaustive study of the subject matter and was not peer reviewed. Based upon the Shirley Report and the additional information presented by the acousticians in this proceeding, the Commission is not convinced that a causal link between ILFN at wind generating facilities and human health risks has been established to a reasonable degree of scientific certainty. That is not to say, however, that the

topic is not worthy of further study, and all of the acousticians agree on this point. The Commission believes that no single applicant seeking approval for a wind generating facility should have to shoulder the burden and costs alone of this further study.

While the Commission finds that it is premature at this point to modify the Noise Protocol to address ILFN or to mandate post-construction ILFN testing or further study, the Commission encourages the developers and operators of all wind generating facilities in Wisconsin to lend their support to and cooperation in future studies relating to ILFN as this is an industry-wide issue that should be examined further. Applicants should also consider addressing ILFN in future wind energy development applications.

Consistency with Wis. Admin. Code ch. PSC 128

When reviewing applications under Wis. Stat. § 196.491(3)(dg), the Commission is required to consider whether the installation of a wind energy system is consistent with the standards specified in Wis. Admin. Code ch. PSC 128. Additionally, pursuant to Wis. Admin. Code § PSC 128.10(4), there are certain provisions of chapter PSC 128 that are mandatory for all wind energy projects.⁸ The Commission is not required to apply all aspects of Wis. Admin. Code ch. PSC 128 because “[n]othing in this chapter shall preclude the commission from giving individual consideration to exceptional or unusual circumstances and applying requirements to an

⁸ Wis. Admin. Code § PSC 128.10 (4) MANDATORY REQUIREMENTS.

(a) Section PSC 128.105 applies to every owner of a wind energy system, regardless of the political subdivision in which the wind energy system is located and regardless of the contents of a political subdivision's ordinance or the lack of an ordinance.

(b) Section PSC 128.13 (2) (a) applies to every political subdivision, regardless of the contents of its ordinance or the lack of an ordinance.

(c) Section PSC 128.19 applies to every owner of a wind energy system of at least one megawatt, regardless of the political subdivision in which the wind energy system is located and regardless of the contents of a political subdivision's ordinance or the lack of an ordinance.

individual wind energy system that may be lesser, greater, or different from those provided in this chapter.” (Wis. Admin. Code § PSC 128.02(4).)

At several places in this record, Highland states that its project will comply with Wis. Admin. Code ch. PSC 128. (*See, e.g.*, Direct-HWF-Mundinger-8.) The record was a bit muddled, however, as to which part or parts of Wis. Admin. Code ch. PSC 128 Highland was agreeing to comply with and which parts it deemed either inapplicable or was requesting something different from what the rules provide.⁹ It would be helpful in future CPCN applications if the applicant could explicitly state and cite with specificity which provisions from Wis. Admin. Code ch. PSC 128 with which it intends to comply. This will greatly assist the Commission in making its determination as to whether the project is consistent with the requirements of Wis. Admin. Code ch. PSC 128.

Some of the requirements of Wis. Admin. Code ch. PSC 128 from which Highland specifically requested deviation were the requirements relating to decommissioning, Wis. Admin. Code § PSC 128.19. The Commission notes that these requirements are among those mandatory requirements that are, absent an exceptional or unusual circumstance, to be applied to all wind energy systems. While the Commission is willing to consider deviation from some of the decommissioning requirements in this and future cases, future applicants are encouraged to more clearly articulate the provisions for which they seek modification and why. Further, for those provisions that are mandatory pursuant to Wis. Admin. Code § PSC 128.10(4), applicants should

⁹ Based upon Commission staff’s parsing of this record, it appears that Highland was agreeing to comply with the following provisions: Wis. Admin. Code §§ PSC 128.14, 128.15, 128.16, 128.18(1)(f) and (g), 128.18(4)(a) and (b), and 128.40 to 128.42.

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make a clear argument demonstrating the exceptional or unusual circumstance that supports a Commission waiver or modification of the provision under Wis. Admin. Code § PSC 128.02(4).

Order

1. Highland's application for a CPCN is denied.
2. Highland's request for Emergency Relief is denied.
3. Jurisdiction is retained.
4. This Final Decision shall take effect one day after the date of service.

Concurrence and Dissent

Commissioner Callisto concurs in part, dissents in part, and writes separately (attached).

Dated at Madison, Wisconsin, this 14th day of March, 2013.

By the Commission:



Sandra J. Paske
Secretary to the Commission

SJP:JAL:cmk:DL: 00646525

See attached Notice of Rights

PUBLIC SERVICE COMMISSION OF WISCONSIN
610 North Whitney Way
P.O. Box 7854
Madison, Wisconsin 53707-7854

**NOTICE OF RIGHTS FOR REHEARING OR JUDICIAL REVIEW, THE
TIMES ALLOWED FOR EACH, AND THE IDENTIFICATION OF THE
PARTY TO BE NAMED AS RESPONDENT**

The following notice is served on you as part of the Commission's written decision. This general notice is for the purpose of ensuring compliance with Wis. Stat. § 227.48(2), and does not constitute a conclusion or admission that any particular party or person is necessarily aggrieved or that any particular decision or order is final or judicially reviewable.

PETITION FOR REHEARING

If this decision is an order following a contested case proceeding as defined in Wis. Stat. § 227.01(3), a person aggrieved by the decision has a right to petition the Commission for rehearing within 20 days of mailing of this decision, as provided in Wis. Stat. § 227.49. The mailing date is shown on the first page. If there is no date on the first page, the date of mailing is shown immediately above the signature line. The petition for rehearing must be filed with the Public Service Commission of Wisconsin and served on the parties. An appeal of this decision may also be taken directly to circuit court through the filing of a petition for judicial review. It is not necessary to first petition for rehearing.

PETITION FOR JUDICIAL REVIEW

A person aggrieved by this decision has a right to petition for judicial review as provided in Wis. Stat. § 227.53. In a contested case, the petition must be filed in circuit court and served upon the Public Service Commission of Wisconsin within 30 days of mailing of this decision if there has been no petition for rehearing. If a timely petition for rehearing has been filed, the petition for judicial review must be filed within 30 days of mailing of the order finally disposing of the petition for rehearing, or within 30 days after the final disposition of the petition for rehearing by operation of law pursuant to Wis. Stat. § 227.49(5), whichever is sooner. If an *untimely* petition for rehearing is filed, the 30-day period to petition for judicial review commences the date the Commission mailed its original decision.¹⁰ The Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

If this decision is an order denying rehearing, a person aggrieved who wishes to appeal must seek judicial review rather than rehearing. A second petition for rehearing is not permitted.

Revised: December 17, 2008

¹⁰ See *State v. Currier*, 2006 WI App 12, 288 Wis. 2d 693, 709 N.W.2d 520.

Appendix A
SERVICE LIST

In order to comply with Wis. Stat. § 227.47, the following parties who appeared before the agency are considered parties for purposes of review under Wis. Stat. § 227.53.

PUBLIC SERVICE COMMISSION OF WISCONSIN

(Not a party, but must be served)

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PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Highland Wind Farm, LLC, for a Certificate of Public Convenience and Necessity to Construct a 102.5 Megawatt Wind Electric Generation Facility and Associated Electric Facilities, to be Located in the Towns of Forest and Cylon, St. Croix County, Wisconsin

2535-CE-100

CONCURRENCE AND DISSENT OF COMMISSIONER ERIC CALLISTO

I concur in the Final Decision's conclusion as to compliance with the Wisconsin Environmental Policy Act, Wis. Stat. § 1.11, and its prospective guidance on land use development plans and how future applicants for a Certificate of Public Convenience and Necessity (CPCN) should be more specific in identifying which portions of Wis. Admin. Code ch. PSC 128 they plan to comply with and to what extent.¹ I respectfully dissent from all other conclusions in the Final Decision.

The Commission denies Highland Wind Farm, LLC's (Highland) CPCN application and its related Emergency Request for leave to present additional evidence. I dissent because the CPCN denial misapplies our wind siting rules, Wis. Admin. Code ch. PSC 128, and introduces substantial uncertainty into the regulation of wind siting in Wisconsin. The Final Decision also incorrectly concludes that allowing limited, additional evidence into the record — evidence that would be subject to public hearing, cross-examination and rebuttal — would violate the due process rights of intervening parties. We should have allowed Highland to present its very limited additional evidence into the record since the evidence offered is precisely what the Commission asked for during its open meeting discussion of February 14, 2013.

¹ See Final Decision in this docket, at pp. 14-17, 22-24.

The CPCN Denial

The Final Decision's stated reason for denying the CPCN application is because Highland failed to demonstrate that the proposed project would comply with the nighttime noise limit of 45 dBA found in Wis. Admin. Code § PSC 128.14(3)(a).² Our rules require that wind facilities be designed "to comply with the noise standards [in Wis. Admin. Code § PSC 128.14] under planned operating conditions." Wis. Admin. Code § PSC 128.14(2)(c). The noise standards include maximum noise limits of 50 dBA during the day and 45 dBA during the night. Wis. Admin. Code § PSC 128.14(3)(a). The crux of the Final Decision is that because the applicant's pre-construction noise modeling predicts levels above 45 dBA (but below 50 dBA) at several non-participating residences, the project is inconsistent with the noise criteria in Wis. Admin. Code § PSC 128.14, and thus not in the public interest under the CPCN law, Wis. Stat. § 196.491. The Commission's reasoning rests on a faulty interpretation of Wis. Admin. Code § PSC 128.14(3)(a).

Our rules on wind turbine noise cannot rationally be read to require that projects be designed and modeled to never exceed 45 dBA at all non-participating residences. The rules plainly allow the operation of turbines at 50 dBA during the day,³ as the Final Decision itself acknowledges.⁴ While the Commission may deviate from the standards in Wis. Admin. Code § PSC 128.14, it is not purporting to do so in this case. Indeed, nowhere in the Final Decision is there a finding that the Highland project, or any other wind facility, may not emit noise levels that exceed 45 dBA (up to 50 dBA) during the day. It makes no sense to simultaneously allow turbines to operate at 50 dBA during the day, while also requiring that those same turbines be

² See Final Decision in this docket, Finding of Fact #2, at p. 4.

³ See Wis. Admin. Code § 128.14(3)(a).

⁴ See Final Decision in this docket, at p. 6.

site-designed in advance to never, under any circumstances, operate at levels that exceed 45 dBA.⁵ But that is exactly the effect of the Final Decision, and it is the chief reason why it is incorrect.

The proper interpretation of our rules is that they require projects to be designed to emit no more than 50 dBA, but that they must operate at 45 dBA at night. Clear support of that reading is the plain text of the rule — which specifically allows operation at 50 dBA, but requires the lower limit of 45 dBA at night. Wis. Admin. Code § PSC 128.14(3)(a). The question then is how does a project that is designed to operate at up to 50 dBA during the day stay below 45 dBA at night? Our rules again provide the answer: “[m]ethods available for the owner to comply with [the noise limits of 50 dBA during the day and 45 dBA at night] shall include operational curtailment of one or more wind turbines.” Wis. Admin. Code § PSC 128.14(4)(c).⁶ The only reading of Wis. Admin. Code § 128.14 that gives meaning and effect to both of the rule’s audible noise limits (50 dBA and 45 dBA) is one that contemplates the use of curtailment or other noise reduction technologies on a permanent and ongoing basis.⁷

⁵ The Commission’s preferred ground absorption coefficient of 0.0 predicts a worst-case scenario with respect to expected noise level emissions from a proposed project. See Final Decision in this docket at p. 8 (“Use of a 0.0 ground absorption coefficient would result in the highest, or worst-case, predicted sound levels from a proposed project.”)

⁶ Cf. *Final Decision, Application of Wisconsin Electric Power Company for a Certificate of Public Convenience and Necessity to Construct [the Glacier Hills Wind Park]*, docket 6630-CE-302, dated January 22, 2010, at p. 50, Order Point #10 (PSC REF#: 126124) (“WEPCO shall operate the project in a manner that meets noise limits of 50 dBA during daytime hours, and, upon complaint . . . , shall be permanently reduced to 45 dBA during nighttime hours Methods available for WEPCO to comply with both the daytime and nighttime noise limits shall include, but are not limited to, operational curtailment of the turbine or turbines contributing to the exceedance of the noise limits.”).

⁷ Without operational curtailment or the use of noise reduction modes, the only way for a project design to meet 45 dBA at night, but be allowed to exceed 45 dBA during the day, is to imagine physically moving the turbines every night at 10:00 p.m. and then physically putting them back where they were every morning at 6:00 a.m. — an absurd requirement. Note too that Wis. Admin. Code § PSC 128.14(4)(c) distinguishes between compliance with the 50 dBA and 45 dBA standards in Wis. Admin. Code § PSC 128.14(3)(a) and the “steady pure tone” standards in Wis. Admin. Code § PSC 128.14(3)(b). Operational curtailment is available only on a temporary basis for resolving violations of the “steady pure tone” standards in Wis. Admin. Code § PSC 128.14(3)(b), while the rule includes no such restrictions governing the duration of operational curtailment as a means to comply with the 50 dBA and 45 dBA noise limits found in Wis. Admin. Code § PSC 128.14(3)(a).

The Emergency Request

Highland made an Emergency Request for leave to present additional evidence in response to the Commission's concerns voiced during the open meeting of February 14, 2013. Specifically, Highland sought to introduce evidence of pre-construction noise modeling runs using a 0.0 ground absorption coefficient, predicting noise levels at all non-participating residences within the 45 dBA nighttime noise limit. The additional modeling runs assume that the noise reduction (or "cut-out") technology available on the turbines under consideration would be employed under certain wind speed and directional conditions. The Commission refused to consider the new modeling evidence because, in the majority's view, to do so would be a "deviation from past Commission practice" and a violation of due process.⁸

While not perfect, there was ample opportunity for sufficient due process had the Commission been interested in considering the newly-offered evidence. The applicant filed its Emergency Request and limited additional evidence on February 22, 2013, and the Commission discussed the request at its open meeting on March 1, 2013. At that open meeting, the Commission could have set a hearing date, with at least 10 days of advance notice consistent with Wis. Stat. § 227.44(1), and allowed for cross-examination and the opportunity to present rebuttal evidence. *See* Wis. Stat. § 227.45(2) ("Every party shall be afforded adequate opportunity to rebut or offer countervailing evidence."). The new modeling runs offered by Highland total 21 pages. The question at issue — noise modeling and compliance methods — is a primary issue in the case and is not new or novel to any of the parties. A properly noticed full hearing, including the opportunity for cross-examination and rebuttal testimony, all focused on just 21 pages of evidence, is more than due process under well-accepted notions of

⁸ *See* Final Decision in this docket at pp. 12-13.

administrative procedure and would subject Highland's new evidence to at least "the same scrutiny as all of the other evidence that has been entered into this record."⁹

Regulatory Certainty

Perhaps most troubling about the Final Decision is its lack of clear and coherent regulatory direction for the wind energy industry and those affected by wind energy development. This is a step backward. Through legislation and administrative rule-making, Wisconsin has enacted a uniform system of statewide wind siting rules.¹⁰ A key purpose of the rules is to provide certainty to local governments that desire to regulate wind siting, to the wind development industry as it evaluates where to pursue projects, to potentially affected landowners, and to the industry's supply-chain manufacturers, including those doing business in Wisconsin. Prior to the uniform rules, Wisconsin's approach to non-utility wind siting was a confusing, inconsistent patchwork that varied from jurisdiction to jurisdiction, often functioning as *de facto* moratoria on any and all wind development, and frequently inviting protracted litigation. It wasn't working, and so the Legislature and Commission developed rules that would apply statewide. The rules weren't easy to write and they were controversial (as are nearly all energy infrastructure siting issues), but ultimately the Commission promulgated a comprehensive regulatory package that the Legislature, after much debate, allowed to take effect.

For a moment, it appeared that the industry was on notice of what the rules were and how to play by them. The Final Decision undoes that. In its wake, we will have a 50 dBA day time

⁹ See *id* at p. 13. Not even Forest Voice argues that there would be a denial of due process if the parties had until March 13, 2013, to respond, the opportunity "to file full argument and countervailing evidence," and "the right to cross examination of witnesses." See generally *Forest Voice's Preliminary Statement in Opposition, and Request for Extension of Time to Fully Respond, to Highland Wind Farm's Emergency Request*, dated February 25, 2013, and at p. 9 (PSC REF#: 181283).

¹⁰ See 2009 Wisconsin Act 40; Wis. Admin. Code ch. PSC 128.

operational noise limit, but a pre-construction design requirement of 45 dBA for both day and night. We will have a rule that specifically provides for operational curtailment as a preferred method to comply with audible noise limits, but a Commission apparently unwilling to consider noise modeling evidence that shows how curtailment affects predicted noise levels. This is not a regulatory environment that is conducive to business development or one which provides clear direction for local governments seeking to enact wind siting ordinances.

While I share some of my colleagues' concerns about Highland's pre-construction noise modeling, I was initially prepared to approve the CPCN with a specific condition regarding further modeling. Following Highland's Emergency Request, I would have allowed the new modeling runs into the record, set a hearing date, allowed for input from the other parties, and been prepared to take up the full CPCN before the statutory deadline. We have uniform wind siting rules on the books. It is time to clearly and transparently apply them.