



BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN

Application of Madison Gas and Electric Company for a Certificate of Authority, Approval of Fixed Financial Parameters and Capital Cost Ratemaking Principles, Any Other Authorizations Needed to Construct and Place Into Operation a 30 MW Generating Facility, known as the Top of Iowa Wind Farm, Phase 3, in Worth County, Iowa

3270-CE-126

CERTIFICATE AND ORDER

On January 19, 2007, Madison Gas and Electric Company (MGE) filed an application with the Commission for authority under Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 112 to construct, own, and operate a wind electric generating facility. The facility, known as the Top of Iowa 3 Wind Farm (TOI 3), will be located approximately four miles west of Kensett in Worth County, Iowa. The project will include approximately 18 wind turbines with a total generating capacity of approximately 30 megawatts (MW). MGE intends to use the Vestas V82 wind turbines with 80 meter towers.

The application is APPROVED, subject to conditions and as modified by this Certificate and Order.

Findings of Fact

1. MGE is a public utility, as defined in Wis. Stat. § 196.01(5)(a), engaged in rendering electric service in Wisconsin. MGE is proposing to construct a wind-powered electric generating facility, to be known as TOI 3, as described in its application and as modified by this

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Certificate and Order. MGE estimates the total capital cost of the project to be \$62,200,000, including \$2,800,000 in allowance for funds used during construction.

2. Conservation or other renewable resources, as listed in Wis. Stat. §§ 1.12 and 196.025, or their combination, are not cost-effective alternatives to MGE's proposed facility.

3. The MGE project, as modified by this Certificate and Order, satisfies the reasonable needs of the public for an adequate supply of electric energy.

4. The MGE project, as modified by this Certificate and Order, will not substantially impair MGE's efficiency of service or provide facilities unreasonably in excess of probable future requirements. In addition, when placed in operation, the project will increase the value or available quantity of MGE's electric service in proportion to its cost of service.

5. The MGE project, as modified by this Certificate and Order, assists MGE in complying with the Renewable Portfolio Standard under Wis. Stat. § 196.378.

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

Conclusions of Law

The Commission has jurisdiction under Wis. Stat. §§ 1.11, 1.12, 196.02, 196.025, 196.395, 196.40, and 196.49, and Wis. Admin. Code chs. PSC 4 and 112, to issue a certificate and order authorizing MGE, as an electric public utility, to construct and place in operation a wind-powered electric generation facility with a capacity of approximately 30 MW and to impose the conditions specified in this Certificate and Order.

Discussion

MGE is a public utility, as defined in Wis. Stat. § 196.01(5)(a), engaged in rendering electric service in Wisconsin. It is proposing to build the TOI 3 wind electric generating facility

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with approximately 18 wind turbines with a generating capacity of approximately 30 MW. MGE estimates that TOI 3 will have an operational life of 25 years. MGE states that TOI 3 is a portion of an out-of-state project that has received or soon will receive all approvals applicable in Iowa and will be constructed regardless of MGE's participation. TOI 3 was originally developed as part of a larger, 67 turbine TOI "Phase 2" site, which has been subdivided into two separate sites: TOI 2 and TOI 3. MGE contracted with two limited liability companies for the purchase of the assets comprising a fully-developed site for the construction of an 18-turbine wind farm (TOI 3). This Certificate and Order is the Commission's final action on MGE's application for authority under Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 112 to construct, own, and operate a wind electric generating facility in Worth County, Iowa.

While the TOI 3 wind project is located in Iowa and has received or soon will receive all approvals applicable in Iowa, MGE as a public utility is required to obtain construction authority for the project under Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 112. As a result, MGE is required to obtain authorization to construct the project from the Commission as the cost of the project exceeds the construction cost filing threshold listed in Wis. Admin. Code § PSC 112.05(3)(a)3.

MGE has secured the rights to interconnect the TOI 3 project to the transmission grid under an existing agreement held by Northern Iowa Windpower II, LLC.

On January 19, 2007, MGE filed with the Commission its application for authority under Wis. Stat. § 196.49 and Wis. Admin. Code ch. PSC 112 to construct, own, and operate the proposed wind electric generating facility. Subsequent to the filing, Commission staff submitted several data requests to the applicant.

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In its February 16, 2007, Notice of Proceeding and Prehearing Conference relating to MGE's fixed financial parameters application portion of this docket,¹ the Commission gave notice that this is a Type III action under Wis. Admin. Code § PSC 4.10(3). Type III actions normally do not require the preparation of an environmental impact statement under Wis. Stat. § 1.11 or an environmental assessment. In its notice, the Commission solicited comments on the environmental aspects of this docket. No comments related to environmental issues were received.

The Commission investigated the potential for significant environmental effects that would occur as a result of MGE's ownership and operation of the TOI 3 facilities and determined that preparation of neither an environmental impact statement nor an environmental assessment is required.

Project Need

According to Commission staff's preliminary EGEAS modeling² for the proposed project, the optimal, least-costly expansion plan would add more fossil fuel generation. However, while the modeling indicates that constructing more fossil fuel generation could be less expensive than MGE's project, at this time it is difficult to identify exactly how much less expensive. Depending upon variables such as the cost of fossil fuels in the future, when the United States is likely to begin regulating greenhouse gas emissions, and the extent to which MGE may sell its wind energy at wholesale, this project could include a cost premium that

¹ MGE notified the Commission it intended to withdraw its fixed financial parameters portion of this docket on May 4, 2007, and the Commission authorized its withdrawal on May 24, 2007.

² The Commission uses the Electric Generation Expansion Analysis System (EGEAS), a complex interactive computer model developed by the Electric Power Research Institute. Over the past decade, the Commission has consistently used and required utilities to use EGEAS to evaluate electric generation expansion plans for cost-effectiveness and optimality.

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ranges from less than zero to approximately \$12 million. Based on the EGEAS output files, the difference in the levelized system average rate between the base Optimal plan and the base TOI 3 - Forced plan is \$.234 per MWh.

While modeling is an important analytical tool available to the Commission as it does its needs determination, it is only one factor to be considered. A new Renewable Portfolio Standard (RPS) exists in Wisconsin, and the Commission must consider its obligation to ensure that MGE increases the amount of renewable energy resources in its system to meet the RPS. The Renewable Portfolio Standard in 2005 Wis. Act 141 and Wis. Stat. § 196.378, which took effect on April 1, 2006, established state policy to increase aggressively the level of renewable resources in the electric supply mix. Under these new requirements, each Wisconsin electric provider must increase its renewable energy levels by 2 percentage points by 2010 and by 6 percentage points by 2015, above its 2001 to 2003 baseline average. MGE will be required to generate 129,000 MWh of its Wisconsin retail electric sales from renewable energy by 2010 and 283,000 MWh by 2015. Assuming commercial operation by the end of 2007 as planned, this project will assist MGE in meeting its Renewable Portfolio Standard obligations through 2015.

Under Wis. Stat. § 196.49(3)(b), which also focuses on project need, the Commission may not authorize a construction project if the project will do any of the following:

- 196.49(3)(b)1. Substantially impair the efficiency of the service of the public utility.
2. Provide facilities unreasonably in excess of the probable future requirements.
3. When placed in operation, add to the cost of service without proportionately increasing the value or available quantity of service unless the public utility waives consideration by the commission, in the fixation of rates, of such consequent increase of cost of service.

Because of the requirements of the Renewable Portfolio Standard and the Energy Priorities Law, MGE needs more renewable resource generating facilities. Based on MGE's application, this project is a means of complying with MGE's renewable resource requirements and the project meets the criteria specified in Wis. Stat. § 196.49(3)(b). The project will not result in unreasonable excess facilities and will satisfy the reasonable needs of the public for an adequate supply of electric energy.

The Commission must implement a state energy policy when reviewing any application. Known as the Energy Priorities Law, it establishes the preferred means of meeting Wisconsin's energy demands as listed in Wis. Stat. §§ 1.12 and 196.025(1).

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" Because wind is a noncombustible renewable resource, MGE's proposed electric facility fits within the second-highest statutory priority.

The Commission implements the energy priorities by determining whether any higher-priority alternatives to a proposed project would be cost-effective, technically feasible and

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environmentally sound while meeting the objectives the proposed project is intended to address. Regarding other noncombustible renewable energy resources, no other form of currently available renewable generation is as cost-effective and technically feasible as wind. For these reasons, the Commission concludes that the MGE project complies with the Energy Priorities Law.

Impact on Locational Marginal Prices and Congestion

To determine whether TOI 3 would have a significant effect on transmission congestion costs or location marginal prices (LMP) for transmission service, Commission staff reviewed the 2006 hourly LMPs for the Alliant West Worth County Wind Farm (WORT1) node and the MGE system node, as well as the 2006 wind data for the TOI 3 project site. The WORT1 node is the point at which TOI 3 generation is injected into the electric transmission grid, as well as the generation from a number of other wind farms. Commission staff compared the LMP prices at the WORT1 node with the TOI 3 project site wind data for the months of January, April, July and October 2006, to determine if the wind turbines had an impact on the local LMP prices. Commission staff also compared the LMP at the WORT1 node with the MGE system node for the months of January, April, July, and October 2006, to determine if congestion costs would be an issue. Based on the 2006 historic data, wind generation at TOI 3 is not expected to impact the LMPs nor does the cost of congestion associated with transporting power from the WORT1 node to the MGE system node appear to be an issue at this time.

Environmental Factors

MGE's project will have a number of positive environmental effects. The energy produced by the project will avoid many of the impacts that fossil fuel and nuclear power electric

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generation create. The operation of this wind farm will produce none of the “criteria” air pollutants that are regulated under the federal Clean Air Act,³ will release no greenhouse gases, which are the electric industry’s principal contribution to global warming and climate change, and will emit no hazardous air pollutants such as sulfuric acid, hydrochloric acid, ammonia, benzene, arsenic, lead, formaldehyde, and mercury. Furthermore, it will generate power without using any significant amount of water or producing any solid waste.

There are no wetlands or waterways on or immediately adjacent to the TOI 3 project area. Thus, no impacts to these resources are expected. MGE’s project does not conflict with the land use plans of the local townships or Worth County. Easement agreements have been executed with property owners for all turbine sites.

Correspondence received from the Iowa Department of Natural Resources (IDNR) indicated that it had found no records of rare species or significant natural communities that would be impacted by the project. An in-depth study of bird and bat behavior and mortality was conducted for the TOI 1 wind farm located approximately five miles west of the TOI 3 site. The study concluded that the “TOI 1 wind farm had minimal impact on birds in the region.” IDNR staff agreed that it would not be necessary to duplicate or expand that study for the TOI 2 and TOI 3 sites.

MGE’s proposed wind-powered electric generating facility is a renewable resource that offers significant benefits to the upper Midwest. The air pollution and greenhouse gas emissions it avoids, the lack of solid waste, and the fact that it consumes virtually no water are important

³ These pollutants are small particulate matter, sulfur dioxide, carbon monoxide, volatile organic compounds, and nitrogen oxides. See 42 USC 7409 and Wis. Admin. Code ch. NR 405.

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environmental benefits. This project will support the state's goal of increasing its reliance upon renewable resources. It fits well with existing land uses, will help preserve the agricultural nature of the project area, will impose no reliability, safety, or engineering problems upon the electric system, and based on present day knowledge, is unlikely to have undue adverse impacts on environmental values. After weighing all the elements of MGE's project, including the conditions imposed by this Certificate and Order, the Commission finds that authorizing the project will promote the public health and welfare and is in the public interest.

Brownfield Siting

Under Wis. Stat. § 196.49(4), the Commission may not issue a certificate for the construction of electric generating equipment unless it determines that brownfields are used to "the extent practicable." However, 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. MGE's project complies with Wis. Stat. § 196.49(4).

Compliance with Wisconsin Environmental Policy Act

Wis. 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 categorized the types of actions it undertakes for purposes of complying with this law. As provided by this rule, and due to the fact that this project, which was planned, developed and permitted for construction in a state other than Wisconsin, would be constructed regardless of MGE's involvement, the Commission categorized

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this project as a Type III action, which normally requires the preparation of neither an environmental impact statement nor an environmental assessment. The Commission's review of the application and environmental permitting requirements concluded that the project is unlikely to have a significant impact upon the quality of the human environment. The Commission finds that the requirements of Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4 have been met.

Project Cost and Construction Schedule

MGE requests that the Commission authorize the project cost assuming that construction work begins between April and July 2007. On this basis, the estimated cost of the project by major plant account supplied by MGE is as follows:

Plant Account	Description	Cost
341	Structures and Improvements	\$15,400,000
343	Prime Movers	17,500,000
344	Wind Turbine Generators, Engineering, Procurement, Construction Management, Erection	22,000,000
345	Accessory Electrical Equipment	4,500,000
	AFUDC	<u>2,800,000</u>
	Total Capital	\$62,200,000

MGE anticipates that the project will be constructed in time for a commercial operation date of November 2007.

Certificate

MGE may construct the Top of Iowa 3 Wind Farm with a generating capacity of up to 30 MW, as described in its application and subsequent filings and as modified by this Certificate and Order.

It is ordered:

1. MGE may construct its project in conformance with the design specified in its application and subsequent filings subject to the conditions specified in this Certificate and Order.

2. The total gross project cost is estimated to be \$62,200,000.

3. This authorization is for the specific project as described in the application and subsequent filings and at the stated cost. Should the scope, design, or location of the project change significantly, or if the project cost exceeds \$62,200,000 by more than 10 percent, MGE shall promptly notify the Commission.

4. MGE shall notify the Commission in writing, within ten calendar days, of each of the following: the date of commencement of construction of the interconnection substation, the date of commencement of construction of project facilities other than the interconnection substation, and the date that the facilities are placed in service.

5. MGE shall ensure that all necessary permits have been obtained prior to commencement of construction and operation of the facilities and it shall submit to the Commission quarterly reports of the status of the environmental permitting process for TOI 3. The first report is due 90 days after the issuance of this decision and reports shall continue through commencement of operation of TOI 3.

6. MGE shall submit to the Commission the final actual costs segregated by major accounts within one year after the in-service date. For those accounts or categories where actual costs deviate significantly from those authorized, MGE shall itemize and explain the reasons for such deviations in the final cost report.

7. Until its facility is fully operational, MGE shall submit quarterly progress reports to the Commission that summarize the status of construction, the anticipated in-service date, and the overall percent of physical completion. MGE shall include the date when construction commences in its report for that three-month period. The first report is due for the quarter ending June 30, 2007, and each report shall be filed within 31 days after the end of the quarter.

8. MGE shall work with affected residents to mitigate the impacts of shadow flicker.

9. No turbine or other project facility may be constructed within the path of line-of-sight communication technology.

10. If the facilities contribute to television, radio, internet, or telecommunications interference, MGE shall work with affected parties to mitigate such interference. Mitigation may include actions such as improving the antenna, changing the antenna location, supplying satellite television, and installing relays to re-transmit and boost the signal.

11. MGE shall comply with the requirements of the National Electric Safety Code when constructing, maintaining and operating its facility.

12. MGE shall notify the Commission in writing within ten days of any decision not to proceed with its project or to enter into any partnership or other arrangement with a third party concerning ownership or operation of the facility.

13. All commitments and conditions of this Certificate and Order shall apply to MGE and to its agents, contractors, successors and assigns.

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14. This Certificate and Order takes effect on the day after it is mailed.
15. Jurisdiction is retained.

Dated at Madison, Wisconsin, May 31, 2007

By the Commission:



Sandra J. Paske
Secretary to the Commission

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See attached Notice of Appeal Rights

Notice of Appeal Rights

Notice is hereby given that a person aggrieved by the foregoing decision has the right to file a petition for judicial review as provided in Wis. Stat. § 227.53. The petition must be filed within 30 days after the date of mailing of this decision. That 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 Public Service Commission of Wisconsin must be named as respondent in the petition for judicial review.

Notice is further given that, if the foregoing decision is an order following a proceeding which is a contested case as defined in Wis. Stat. § 227.01(3), a person aggrieved by the order has the further right to file one petition for rehearing as provided in Wis. Stat. § 227.49. The petition must be filed within 20 days of the date of mailing of this decision.

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

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.

Revised 9/28/98