Public Service Commission of Wisconsin

Rebecca Cameron Valcq, Chairperson
Ellen Nowak, Commissioner
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4822 Madison Yards Way
P.O. Box 7854
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December 7, 2021

Re: Joint Application of Wisconsin Public Service Corporation and Madison Gas and Electric Company for a Certificate of Authority to Purchase the Red Barn Wind Energy Center Generation Facility in the Towns of Wingville and Clifton, Grant County, Wisconsin — 5-BS-256

Comments Due:	Address Comments To:
Friday, December 17, 2021 – 1:30 p.m.	**Steffany Powell Coker** Public Service Commission P.O. Box 7854 Madison, WI 53707-7854
This docket uses the Electronic Records Filing system (ERF).	

To the Parties:

The Commission memorandum concerning joint application of Wisconsin Public Service Corporation and Madison Gas and Electric Company for a certificate of authority to purchase the Red Barn Wind Energy Center Generation Facility is being provided to the parties for comment. Comments must be received by 1:30 p.m. on Friday, December 17, 2021. Party comments must be filed using the Commission's ERF system. The ERF system can be accessed through the Public Service Commission's web site at http://psc.wi.gov. Members of the public may file comments using the ERF system or may file an original in person or by mail at the Public Service Commission, 4822 Madison Yards Way, P.O. Box 7854, Madison, Wisconsin 53707-7854.

Please direct questions about this docket or requests for additional accommodations for persons with a disability to the Commission's docket coordinator Jeff Kitsembel at (608) 266-9658 or Jeff.Kitsembel@wisconsin.gov.

Sincerely,

Steffany Powell Coker
Secretary to the Commission

SPC:JAK:jlt:DL:01842098

Attachment

PUBLIC SERVICE COMMISSION OF WISCONSIN

Memorandum

December 7, 2021

FOR COMMISSION AGENDA

TO: The Commission

FROM: Martin R. Day, Administrator
Tara N. Bachman, Deputy Administrator
Jeff Kitsembel, Docket Coordinator
Division of Energy Regulation and Analysis

RE: Joint Application of Wisconsin Public Service Corporation and Madison Gas and Electric Company for a Certificate of Authority to Purchase the Red Barn Wind Energy Center Generation Facility in the Towns of Wingville and Clifton, Grant County, Wisconsin — 5-BS-256

Suggested Minute: The Commission (approved/approved with conditions/did not approve) the proposed application of Wisconsin Public Service Corporation and Madison Gas and Electric Company for a Certificate of Authority to Purchase the Red Barn Wind Energy Center Generation Facility in the Towns of Wingville and Clifton, Grant County, Wisconsin.

Introduction

On May 6, 2021, Wisconsin Public Service Corporation (WPSC) and Madison Gas and Electric Company (MGE) (together, applicants) filed an application under Wis. Stat. §§ 196.49 seeking approval from the Commission for a Certificate of Authority (CA) allowing applicants to purchase the approximately 92 megawatt (MW) proposed Red Barn Wind Energy Center Generation Facility (project), a wind-powered electric generating facility, following its construction and after it has achieved commercial operation, at a total cost of approximately $162,000,000. (PSC REF#: 409470, PSC REF#: 409471, PSC REF#: 409472, PSC REF#: 409473, PSC REF#: 409474, PSC REF#: 409475, PSC REF#: 409476, PSC REF#: 409477, PSC

REF#: 409478, PSC REF#: 409479, PSC REF#: 411085, PSC REF#: 411087, PSC REF#: 411089, PSC REF#: 411091, PSC REF#: 411183.)

The applicants state that the acquired assets of the project will include wind turbine generators, project collector substation, operation and maintenance (O&M) building, underground collection lines, gravel access roads, two meteorological towers, generator interconnection agreement[1], real property rights, all permits, and books and records. The applicants further state that each will acquire an interest in the project's common facilities and other assets proportional to each applicant's' share of the project's total generating capacity.

The construction of the proposed project is scheduled to begin in early 2022 and is expected to be completed by December 31, 2022. The applicants state this timeline will allow the project to qualify for 80 percent production tax credits and allow them to use the associated capacity to meet their Midcontinent Independent System Operator, Inc. (MISO) Planning Year 2023/2024 obligations.

The proposed project is being developed and constructed in the Towns of Wingville and Clifton, Grant County, Wisconsin. ALLETE Clean Energy will acquire the project from Red Barn Energy LLC (Seller), an affiliate of PRC Wind, and will construct the project. The applicants state that ALLETE Clean Energy is headquartered in Duluth, Minnesota, and that it acquires, develops, and operates clean and renewable energy projects. As the project is being developed and constructed by a wholesale merchant and has a nominal 92 MW nameplate capacity, the project does not come to the Commission for construction authorization and siting review. The project must go through local zoning and permitting processes. Table 1-1 of the

[1] In its application, the Seller stated that it has filed an Interconnection Request with MISO and is in the MISO August 2017 DPP Study Cycle, with the assigned queue position of J855. Phase 1, Phase 2, and Phase 3 of the MISO study process are complete and the Seller is waiting to execute a Generator Interconnection Agreement (GIA).

application shows that the Seller has already received zoning and conditional use permits from Grant County. (PSC REF#: 407668.) The Seller will obtain all other necessary construction permits, including environmental permits, prior to its transfer to the applicants.

A Notice of Investigation was issued on October 14, 2021. (PSC REF#: 423183.) The Notice stated that the Commission did not intend to hold a hearing in this matter. A hearing was neither requested nor held.

Background

MGE is an investor-owned public utility, as defined in Wis. Stat. § 196.01(5), that is engaged in the generation and distribution of electricity to approximately 153,000 customers in Dane County, and in the purchase, transportation, and distribution of natural gas to customers in Columbia, Crawford, Dane, Iowa, Juneau, Monroe, and Vernon Counties. MGE is a wholly-owned subsidiary of MGE Energy, Inc., which is a holding company as defined in Wis. Stat. § 196.795(1)(h).

WPSC is a public utility, as defined in Wis. Stat. § 196.01(5), engaged in the production, transmission, distribution, and sale of electricity, and in the purchase, distribution, and sale of natural gas in a service area of approximately 11,000 square miles in north-central and northeastern Wisconsin and adjacent parts of upper Michigan. Cities that WPSC serves with retail electric service or natural gas service include Green Bay, Marinette, Oshkosh, Rhinelander, Sheboygan, Stevens Point, and Wausau in Wisconsin, and Menominee in Michigan. WPSC is an operating subsidiary of WEC Energy Group (WEC), a holding company based in Milwaukee, Wisconsin.

Project Description and Purpose

The proposed project is a wind powered electric generation facility and is expected to have a nameplate capacity of approximately 92 MW alternating current (AC). The applicants state the project is being developed by PRC Wind and will be built by ALLETE Clean Energy, both experienced, U.S.-based wind facility developers. The project will be sited under Wis. Admin. Code ch. PSC 128. The applicants state that, if the proposed CA is approved, WPSC will acquire 90 percent (approximately 83 MW), and MGE 10 percent (approximately 9 MW), ownership of the approximately 92 MW of wind generating nameplate capacity.

The applicants state that they seek approval of the purchase as part of a larger effort to transition their respective generation fleets. WEC recently announced plans to lower its carbon emissions by 70 percent from 2005 levels by 2030 and for its generation fleet to be net carbon zero in 2050. It aims to achieve that goal by retiring older, less efficient fossil fuel plants, and investing in low-cost, highly-efficient natural gas generation, renewable generation and storage resources in Wisconsin. MGE stated it will need over 250 MW of new capacity by 2024 due to previously announced retirements of legacy assets and expiration of existing Purchase Power Agreements (PPA).

Purchase and Sale Agreement

On November 12, 2021 the applicants submitted their Purchase and Sale Agreement[2] (PSA) with the Seller for the applicants' purchase of the project. The Seller is an affiliate of PRC Wind. ALLETE Clean Energy will acquire the project from the Seller, and will construct the project. Headquartered in Duluth, Minnesota, ALLETE Clean Energy acquires, develops,

[2] Response-Data Request-PSC-Kitsembel-Vbl-102221 Rev CONFIDENTIAL - PSC REF#: 425542
Response-Data Request-PSC-Kitsembel-Vbl-102221 Rev CONFIDENTIAL (REDACTED COPY) - PSC REF#: 425543

and operates clean and renewable energy projects. ALLETE Clean Energy operates, has in advanced construction, and has delivered build-transfer projects totaling more than 1,500 MW of nameplate wind capacity across seven states.

Under the PSA, the Seller will undertake all development and construction of the project, including the facilities necessary to interconnect the project to the electric grid.[3] Except for the CA the applicants seek in this application, the Seller is responsible for obtaining all environmental and other governmental permits for construction and operation of the project.[4] The PSA includes a number of provisions that would provide protections to ratepayers, some of the more significant examples of which include:

- The Seller's obligation to "engineer, design, construct, interconnect, commission, test and, prior to Closing, operate and maintain the Project, all in accordance with the Applicable Standards." Also, the Seller "shall incorporate the Technical Specifications in the EPC agreement, the Turbine Supply Agreement and any other applicable Contract relating to the engineering or construction of the Project." (PSA, Article 5.1.)
- The Seller's representation that the environmental and other governmental permits for the construction and operation of the facility are in final and non-appealable form. (PSA, Article 3.3.3.)
- The Seller's obligation to have the project substantially complete and operational prior to purchase by the applicants. (PSA, Article 5.1.)
- The applicants assume only the liabilities set out in the PSA. (PSA, Articles 2.1.3 and 2.1.4.)

[3] PSC REF#: 425543 at page 20.
[4] PSC REF#: 425543 at page 45.

The PSA also requires the Seller to construct the proposed project in accordance with the PSA's applicable standards, the technical specifications set out in the EPC agreement and the turbine supply agreement, applicable law, applicable permits, and manufacturer warranties and recommendations. The applicants must notify the Seller whether they have obtained the Commission's issuance of a CA. The applicants are permitted to terminate the PSA as set forth in Article 10 of the PSA.

Similar to the renewable energy buy-sell application recently approved by the Commission in docket 4220-BS-100, this application proposes that the applicants acquire the project only after construction and initial operation of the facility has been completed. This approach, combined with the stipulations outlined in the PSA, would help to further insulate Wisconsin ratepayers from the exogenous financial risk stemming from a merely announced or in-construction facility. Endogenous risk is also more adequately controlled in this acquisition arrangement by ensuring cost overruns and permitting issues are addressed in the terms of the PSA prior to the sale of the facility. Together, the provisions of the PSA are designed to ensure that the Seller develops, builds, interconnects, operates, and transfers to the applicants a well-constructed and fully permitted renewable generation asset capable of performing well, with adequate warranties and free of environmental liabilities or liens.

Standard for Approval

The applicants seek approval for a CA under Wis. Stat. § 196.49. Wis. Stat. § 196.49(2) states:

> [n]o public utility may begin the construction, installation or operation of any new plant, equipment, property or facility, nor the construction or installation of any extension, improvement or addition to its existing plant, equipment, property, apparatus or facilities unless the public utility has complied with any applicable rule or order of the commission.

Under the provisions of Wis. Stat. § 196.49(3):

> The Commission may require by rule or special order that no addition to a plant "may proceed until the Commission has certified that public convenience and necessity require the project." Wis. Stat. § 196.49(3). The Commission may refuse to certify a project if it appears that the completion of the project will do any of the following:
> 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.

Pursuant to Wis. Admin. Code § PSC 112.05(1)(a), electric utilities must obtain Commission authorization to place in service a generating plant or unit whose costs exceed the threshold established in Wis. Admin. Code § PSC 112.05(3). The applicants are required to obtain a CA to acquire the project because the purchase price allocated to each applicant exceeds the threshold cost level of $11,935,000 applicable to each applicant.[5]

Commission staff also considered whether approval might also be required under Wis. Stat. § 196.80. The applicants did not address the potential applicability of this provision in their application. Wisconsin Stat. § 196.80(1m)(e) provides that with consent and approval, but not otherwise, a public utility may "[s]ell, acquire, lease or rent any public utility plant or property constituting an operating unit or system." The standard for approval of a transaction under this statute is whether "the proposed action is consistent with the public interest." Wis. Stat. § 196.80(3). In reaching its determination, the Commission is required to "take into consideration the reasonable value of the property and assets of the corporation to be acquired or merged." *Id.*

[5]Construction Cost Threshold Update Letter 2020 correction - PSC REF#: 387134.

A distinction between Wis. Stat. §§ 196.49(3) and 196.80(1m)(e) relates to the nature of the facility being acquired. Wisconsin Stat. § 196.49(3) makes no mention of whether facilities subject to acquisition are considered public utility plant or property constituting an operating unit or system, whereas Wis. Stat. § 196.80(1m)(e) explicitly applies to acquisitions of a "public utility plant or property constituting an operating unit or system." Whether the project is considered public utility plant could potentially affect the required accounting for the purchase by the applicants under the Uniform System of Accounts.

As discussed above, the PSA requires the Seller to undertake all development, construction, commissioning, and operation of the project, including the facilities necessary to interconnect the facility to the electric grid, and to obtain all environmental and other governmental permits for construction and operation of the project, with the exception of the CA the applicants seek in this application. Closing under the PSA will occur and the project will be transferred to the applicants in exchange for payment, in the aggregate, upon mechanical completion and operation of the Red Barn facility. (PSC REF#: 425543, Red Barn – Purchase and Sale Agreement attachment at 8.)

Given these circumstances, this case is potentially similar to prior cases in which the Commission has determined Wisconsin Statute § 196.80 did not apply.[6] In those cases, the facility being acquired was not only constructed by a merchant, but had been operational for a

[6] *Joint Application of Wisconsin Public Service Corporation, Wisconsin Power and Light Company, and Madison Gas and Electric Company for Approval to Purchase the Forward Wind Energy Center from Forward Energy, LLC,* Commission Docket No. 5-BS-226*; Application of Wisconsin Public Service Corporation for Authority to Purchase Fox Energy Company, LLC, and Place in Service Fox Energy Center,* Commission Docket No. 6690-EB-105*; Application of Wisconsin Power and Light Company for Approval to Purchase the Riverside Energy Center From Riverside Energy Center, LLC,* Commission Docket No. 6680-EB-105*; Application of Wisconsin Electric Power Company for Authority to Purchase and Place in Operation the 592 MW Presque Isle Power Plant and Certain Related Transmission and Distribution Facilities, All Located Near Marquette, Michigan in the Upper Peninsula,* Commission Docket No. 6630-CE-138*; and Application of Wisconsin Electric Power Company for Authority to Purchase the Montfort Wind Energy Center, Iowa County, Wisconsin, from Badger Windpower, LLC,* Commission Docket No. 6630-EB-103.

period of time prior to acquisition[7], as is the case in this docket. In docket 5-BS-226 the Commission thus determined:

> that Wis. Stat. § 196.80 [did] not apply to [the] purchase and sale because [Forward Wind Energy Center] [was] not currently a public utility plant or a property constituting an operating unit or system. The Commission determine[d] that FWEC, which was constructed and initially operated by a merchant, was not devoted to public service at the time of initial operation.
>
> (PSC REF#: 339856 at 6.)

The PSA in this case similarly provides that the Red Barn facility will and must be operating prior to the acquisition. The Commission could therefore reasonably conclude that Wis. Stat. § 196.80 does not apply to this application, and that it need only consider the request under Wis. Stat. § 196.49, as the applicants cited in their application.[8]

Commission Staff Analysis

The Commission may refuse to issue a CA in this docket if the Commission finds that it cannot certify that the public convenience and necessity require the project, or if it finds that the acquisition will result in any of the three factors listed in Wis. Stat. § 196.49(3)(b). Commission staff considered these questions by reviewing MGE's and WPSC's system need modeling, economic analysis, and other application materials, as discussed more particularly below.

[7] This case is similar to the acquisition considered in Commission Docket No. 5-BS-228, *Joint Application of Madison Gas and Electric Company and Wisconsin Public Service Corporation for Approval to Acquire Ownership Interests in Solar Electric Generating Facilities.* The Commission did not examine or address the applicability of Wis. Stat. § 196.80 in that docket.

[8] In any event, even if Wis. Stat. § 196.80 were to apply, there would be no acquisition adjustment due to the timing of the transaction, so there would be little to no practical effect, since the standard under Wis. Stat. § 196.80, that the acquisition must be in the public interest, is similar to the standard under Wis. Stat. § 196.49, which considers whether the public convenience and necessity require the project.

WPSC System Need and Modeling Overview

In preparing the application, WPSC used PLEXOS market simulation software to assess each utility's long-term growth plan in each utility's generation reshaping plan. PLEXOS permits WPSC to project future generation portfolios and LMPs across the MISO footprint, to find low cost resource options to meet the utilities' future system needs, and to simulate the dispatch, costs, and revenues of those portfolios as part of the MISO market.

Commission staff reviewed WPSC's PLEXOS modeling analysis, and conducted discussions with staff at WPSC about the PLEXOS modeling, assumptions of the model and the model results.

WPSC illustrated two scenarios for the PLEXOS analysis. The first scenario contemplated adding the proposed project to WPSC's portfolio. The second scenario, the Status Quo Alternative, assumed the continuation of WEC's current portfolios without the addition of the proposed project with a small exception for WPSC, as described in the Economic Analysis in Appendix B. Next, WPSC performed a sensitivity analysis to determine the effect of 11 different independent assumptions across the following modeling input variables: gas price forecast; avoided dispatch costs from reshaping the combined generation fleet; CO_2 content for market energy purchases; must run status on Oak Creek and Columbia Units; escalation rate; BESS ancillary revenue estimates in the generation reshaping plan; and fixed O&M estimates in the generation reshaping plan. The other model input variables use similar scenarios. Commission staff reviewed the model assumptions and did not find them to be unreasonable. Moreover, Commission staff reviewed and did not raise any objections to the quantities and scenarios assigned to the assumptions.

Commission staff was, however, unable to independently validate the results of the PLEXOS model runs because the Commission does not have a license to use the software.

MGE System Need and Modeling Overview

MGE stated that the key drivers for adding renewable energy resources to its generation fleet in the near-term are reserve margin requirements (reliability/capacity needs), cost-effectiveness (economics), and risk mitigation (environmental standards). Capacity needs in the near term are due to the expiration of MGE's existing PPAs and the retirement of its existing, aging generating units built in the 1950s, 1960s, and 1970s that have reached the end of their useful lives. MGE states that it also aims to address capacity needs through the proposed MGE acquisition of a 10 percent ownership share of the Paris Solar/Battery project, which is being considered in Commission Docket Number 9801-CE-100.

MGE believes that the cost-effectiveness of renewable energy and battery energy storage resources in the near-term arises from a number of factors, including; (1) recent reductions in the installed costs of solar photovoltaic (PV) systems and lithium-ion battery technology; (2) improvements in renewable technology performance in the form of increased capacity factors for wind and solar; (3) the current favorable interest rate environment where interest rates have been relatively low and stable as compared to historical levels; (4) lower federal tax rates as a result of recently enacted tax reform that helps lower the costs of capital intensive investments such as renewable energy and energy storage projects; and (5) federal production and investment tax credits that are available now before being gradually phased down or phased out in the coming years.

MGE also believes that renewable resources provide a hedge against uncertainty in future delivered fossil-fuel costs while serving to mitigate the potential risks and costs attributable to possible future regulation of carbon dioxide (CO_2) emissions.

MGE used the Electric Generation Expansion Analysis System (EGEAS) model to evaluate the acquisition of the proposed project over a range possible futures. Additionally, MGE used PROMOD to forecast annual locational marginal price differentials in the PROMOD model and used those results as inputs into its EGEAS modeling.

MGE analyzed a range of scenarios including, in addition to MGE's Reference Scenario. The Reference Scenario contemplated the approval of the application presented in this docket and the retirement of existing, aging generating units and other renewable energy facilities, such as the proposed Paris Solar project. Those other scenarios that were analyzed considered futures such as the possibility of carbon constraints, higher natural gas prices, and higher energy market prices; and lower MISO assigned capacity credit values for solar resources as the penetration of solar capacity in MISO increases in the future.

MGE stated that the results for all scenario and sensitivity analyses performed by MGE showed that adding the proposed project is part of the least cost plan as optimized by EGEAS. (PSC REF#: 423494.)

Commission staff reviewed and independently reran the modeling and economic analysis submitted by MGE as part of the application in this docket. Commission staff checked the PROMOD analysis for replicability and to see how the outputs might vary under different input assumptions. Commission staff achieved perfect replicability of the filings in one of the six supplied runs, leading to a conclusion that the other runs would similarly be replicable. Commission staff then implemented a number of changes to the PROMOD model to see if there

would be any change to the locational marginal pricing (LMP) differential. Among the changes implemented were different generator retirement assumptions, different capacity factors for proposed units including the proposed project, and the inclusion of some Commission approved projects in the state of Wisconsin. These changes resulted in relatively small changes to LMP between the proposed project's electrical bus and the MGE load zone. Commission staff drew the conclusion that LMP differentials therefore are relatively invariant to a variety of factors that staff has tested in the past, which lends credibility to the differentials that MGE provided in its original analysis.

Commission staff then did a limited set of EGEAS runs to determine the value at which the proposed project would no longer be picked due to the LMP differential, which is just one of many input variables that EGEAS uses to perform its cost optimization. The value of the LMP differential necessary for EGEAS not to select the proposed project was considerably larger than the LMP differentials being predicted by PROMOD, which led to the conclusion that EGEAS is most likely to use other inputs to determine the inclusion of the proposed project in the MGE portfolio. In addition to the modeling originally submitted by MGE, Commission staff modeled each MGE scenario, inputting a higher mature forced outage rate for the project than that used in the MGE modeling. Increasing the mature forced outage rate had the effect of lowering the project's annual capacity factor. The EGEAS modeling performed by Commission staff show that the proposed project remains part of a least cost plan as optimized by EGEAS even at lower capacity factors than forecast by MGE. The results of these additional sensitivities show that the proposed project acquisition would remain part of the least cost plan as optimized by EGEAS for meeting MGE's future capacity need.

The capacity factors necessary for the EGEAS program were also compared to operational history of the Quilt Block wind facility, in a similar geographic region compared to the proposed project, with operational data since 2018. The capacity factors necessary for the proposed project to be chosen are in line with historical capacity factors achieved at the Quilt Block facility, again lending credibility to the concept that the Red Barn facility could be part of a least cost MGE capacity expansion plan.

Applicants' Needs, Alternatives, and Economic Analysis

The applicants state that in order to manage market risk and reliably serve their customers, they will need to build a substantial amount of replacement generating capacity over the next several years. The applicants stated that WPSC's PLEXOS modeling analysis demonstrated that the proposed project is the lowest-cost option for WPSC's customers to meet WPSC's projected capacity need, when compared to the Status Quo Alternative. In maintaining the Status Quo Alternative, WPSC would need to procure capacity and energy from the market to meet future needs. WPSC has stated that the proposed project is less risky than acquiring capacity and energy from the market.

MGE provided economic modeling of its 10 percent ownership of the project in the EGEAS modeling platform. MGE's analysis echoed a similar perspective to WPSC. A summary and analysis of the applicants' economic modeling are contemplated in this analysis.

On May 6, 2021, WPSC filed an economic model for its generation reshaping plan portfolio, including a net present value of the revenue requirement (NPVRR) for the proposed project. (PSC REF#: 411089 confidential, PSC REF#: 411090 public.) The model provided for the project includes base capital cost estimates, as well as additional sensitivity analyses from that base under a variety of economic assumptions. Also on May 6, 2021, WPSC filed an

avoided cost analysis for the proposed project which is also evaluated by Commission staff in this docket. (PSC REF#: 411091 confidential, PSC REF#: 411092 public.) WPSC calculated the net present value (NPV) of the avoided fuel costs resulting from the project. MGE supplied its economic modeling analysis on May 7, 2021. (PSC REF#: 411183 confidential, PSC REF#: 411184 public.)

WPSC Economic Model

Commission staff found, in its analysis of WPSC's PLEXOS modeling analysis, that the Red Barn facility will provide additional megawatt-hours (MWh) of zero fuel cost energy, which would reduce WPSC's reliance on the MISO market purchases. Given the lower capacity value MISO assigns to wind facilities, the proposed project provides more value in terms of energy than it does capacity. Therefore, it is WPSC's contention that it is easier to identify the precise impact, such as NPV savings, the proposed project provides compared to the balance of WPSC's generation reshaping plan. WPSC was able to quantify this value by performing an additional PLEXOS model run in which the proposed project was eliminated from the Base Case run and replaced with market capacity and energy. This comparison shows that having the project facility in WPSC's portfolio will provide customers about $88 million in NPV savings and a 20-year nominal savings of $107 million compared to the Status Quo Alternative. WPSC's analysis of the proposed project shows that it would provide savings in the third year of service, and would continue to provide savings through the end of the study period. Again, while Commission staff did not raise any objections to the quantities and scenarios assigned to the assumptions in the modeling, Commission staff was unable to validate the results of the PLEXOS model runs because we do not have a license to use the software.

MGE Economic Model

MGE's approach to modeling the economic impact of the proposed project was similar to WPSC's in that MGE also utilized the approved weighted average cost of capital (WACC) (7.21 percent) from their most recent rate case (docket 3270-UR-123) as the discount rate in their model. Due to the size and scale of MGE's ownership in this project, a discount rate stress test was not contemplated for MGE. However, MGE's analysis did include capital costs for the project on a per kilowatt basis. MGE projects the installed capital cost of the proposed project to be $1,774 per kW ($16.25 million). Using Standard & Poor's Capital IQ Pro platform, Commission staff compared this capital cost with other similarly sized announced or under construction wind projects in the MISO footprint. The results of this analysis show that the projected capital cost is in range with other similar MISO wind projects.

Table 1 Capital Cost of MISO Wind Projects

Project Name	*New Capacity (MW)*	*Primary Fuel Group*	*State, Province, or Admin Region*	*Year in Service*	*Current Development Status*	*Estimated Construction Cost ($000)*	*Cost per kW*
Maple Rapids Wind Project	117.6	Wind	MI	NA	Early Development	$ 217,560	$ 1,850
Ford Ridge Wind Farm (Ford County)	121.3	Wind	IL	2022	Construction Begun	$ 206,142	$ 1,700
Highland Wind Farm	102.5	Wind	WI	2022	Early Development	$ 199,875	$ 1,950
Buffalo Ridge Wind Project	109.2	Wind	MN	NA	Advanced Development	$ 196,596	$ 1,800
Midland Wind Farm	115.0	Wind	IL	2022	Early Development	$ 195,500	$ 1,700
Rocky Road Wind Farm	100.0	Wind	IA	NA	Announced	$ 195,000	$ 1,950
Geronimo Stutsman Wind Farm	100.0	Wind	ND	NA	Announced	$ 195,000	$ 1,950
Audubon Wind Farm	100.0	Wind	IA	NA	Announced	$ 195,000	$ 1,950
Walleye Wind Project	109.7	Wind	MN	2021	Advanced Development	$ 189,584	$ 1,728
Ceres Wind Project	100.0	Wind	MN	NA	Announced	$ 180,000	$ 1,800
Rolette Wind Power Project	100.4	Wind	ND	NA	Early Development	$ 175,000	$ 1,743
Southern Hills Wind Expansion Project	94.5	Wind	IA	NA	Early Development	$ 170,100	$ 1,800
Rail Splitter II Wind Farm	100.0	Wind	IL	2024	Announced	$ 170,000	$ 1,700
Crowned Ridge Wind Energy Center Project I	99.0	Wind	SD	NA	Advanced Development	$ 168,300	$ 1,700
Bennington Wind (Minonk Stewardship Wind)	93.0	Wind	IL	2021	Construction Begun	$ 158,100	$ 1,700
Red Barn Wind Farm	91.6	Wind	WI	2022	Early Development	$ 155,720	$ 1,700

Financial Analysis

Commission staff reviewed WPSC's financial analysis and the reasonableness of the assumptions in that analysis. The total NPVRR calculation is approximately $63.720 million for the proposed project. WPSC chose to use the WACC approved for the utility in their most recent rate case (7.22 percent) as the discount rate applied to the project's economic analysis. Commission staff chose to alter this assumed discount rate when reviewing WPSC's model

because the WACC authorized in docket 6690-UR-126 is reflective of the analysis of market conditions dating back to 2019, and therefore may not reflect current market conditions. Thus, a stress test was conducted to analyze how a substantive increase in the chosen discount rate would impact the NPVRR of the project. For this test, Commission staff raised the discount by 2 percent (200 basis points) to 9.22 percent. This resulted in a total NPVRR calculation of $53.373 million. Even though the resulting decrease is substantial (approximately $10 million), the residual positive NPVRR continues to suggest positive economic benefits of the proposed project.

A 2 percent adjustment was also applied to the discount rate to demonstrate how a large increase in the discount rate may alter the avoided costs NPV savings. Changing the WACC to 9.22 percent reduces the NPV savings of avoided costs of having the proposed project in WPSC's portfolio to $63 million from the previously mentioned $88 million. This analysis continues to demonstrate a positive NPV savings with an elevated discount rate compared to the Status Quo Alternative.

Additionally, because WPSC has historically been a net importer of energy and is exposed to energy prices that are driven by fuel costs, WPSC contends that the proposed project will hedge against fuel price volatility. According to WPSC's avoided cost analysis, a review of fuel cost data from 2016 to 2020 showed the energy produced by the proposed project would have reduced market purchases and would have decreased fuel costs, thereby providing savings for ratepayers. Commission staff independently verified the approximated average cost savings. In order to verify this amount, the MWh of annual zero fuel cost energy was separately multiplied by the authorized fuel cost and the actual fuel cost for the nine month period from January to September 2021. These two computations produced cost savings comparable to the approximated average fuel cost savings of the proposed project.

Based on the positive NPVRR of the proposed project and the positive NPV of the fuel cost savings, the Commission may find the results of the economic analysis to be reasonable. This was further corroborated through the testing of a hypothetical increase in WPSC's applied discount rate. The analysis suggests that the proposed project produces financial savings over the Status Quo Alternative. From an economic analysis perspective, the information and analysis provided by the applicants and Commission staff supports the applicants' conclusion that the proposed project is the least cost option to support its stated need for additional capacity. While the future cannot be predicted with certainty, the Commission could conclude that, based on the application and Commission staff analysis, the applicants' modeling assumptions are reasonable.

Acquisition Price

The applicants stated that each utility will reflect the utility's respective portion of the acquisition price in the utility's rate base. The applicants requested approval to purchase the project for $162,000,000. The applicants' request was inclusive of the capital cost of the project, land agreements, transmission interconnection rights, and permits. The applicants stated that the fixed price will be subject to certain unanticipated scope changes or *force majeure* events that are beyond the parties' control that could increase the cost to complete the project. Therefore, the applicants believe that it is reasonable for the Commission to authorize up to 110 percent of this amount. The Commission may wish, as it has done in prior dockets, to require the applicants to promptly notify the Commission as soon as the applicants become aware of any possible change or cost increase beyond the estimated price of $162,000,000.

The Commission, consistent with its past practice, could also provide, in any Final Decision approving the application, that it will review, in a future rate case, the recoverability of

costs associated with the acquisition, operation and maintenance costs, and revenues associated with the applicants' purchase of the project. Though the applicants have represented that they will not be engaging in any construction, the Commission may wish to condition it approval on the applicants refraining from any construction activities associated with the project without prior authorization from the Commission. Proposed language for these proposed conditions is included in the order conditions discussion below.

Public Interest Considerations

The Commission staff review indicates that there is a need for replacement generation capacity for both WPSC and MGE. The applicants' acquisition of the wind facility will increase the quantity of service, adding a total of approximately 92 MW to the generating capacity of WPSC and MGE. Based upon the economic analysis demonstrating the customer benefits of the transaction and the other considerations discussed above, it is Commission staff's view that the Commission could reasonably find that the public convenience and necessity require the acquisition. Wis. Stat. § 196.49(3)(b). The Commission could similarly find that the applicants have demonstrated that the purchase of the project will not add to their cost of service without proportionately increasing the value or available quantity of service. Wis. Stat. § 196.49(3)(b)(3). In addition, the Commission may find it reasonable to conclude that the purchase of the project would neither substantially impair the efficiency of the applicants' service (Wis. Stat. § 196.49(3)(b)(1), nor provide facilities unreasonably in excess of their probable future requirements (Wis. Stat. § 196.49(3)(b)(2)).[9]

[9] If Wis. Stat. § 196.80 were found to apply, the Commission might similarly find it reasonable to conclude that the proposed acquisition is consistent with the public interest.

Energy Priorities Law

When reviewing an application, the Commission considers Wis. Stat. §§ 1.12 and 196.025(1), known as the Energy Priorities Law (EPL), which establishes the preferred means of meeting Wisconsin's energy demands. The EPL creates the following 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.
> (cm) Advanced nuclear energy using a reactor design or amended reactor design approved after December 31, 2010, by the U.S. Nuclear Regulatory Commission.
> (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.
>
> Wis. Stat. § 1.12(4).

In addition, Wis. Stat. § 196.025(1) declares that the Commission shall implement these priorities in making all energy-related decisions to the extent they are cost-effective, technically feasible and environmentally sound. The Commission has an obligation to consider these priorities in all energy related decisions, including construction of new electric generation facilities.

The proposed project will be a wind powered electric generation facility. It is a noncombustible renewable energy resource. Therefore, only energy conservation is a higher priority. In enacting the EPL, however, the Legislature made a point of recognizing that the bill did not create any standards for determining the extent to which the priority list is actually used in making such determinations, nor did the lawmakers establish that an item that is not on the top of the list cannot be built. Instead, the legislators made clear that agencies should look to how a

project could fit into the entire energy mix. "[C]ompliance with the directive that agencies follow the priority list will be reflected in the overall pattern of decisions made by each agency . . . the success of implementing the priority list will be reflected in the overall pattern of energy generation and use, across the state and through time." Prefatory Note to 1993 Assembly Bill 701.

The applicants state that the project is intended to replace retiring fossil electric generating facilities. Commission staff is not aware of any information showing that energy and capacity from the proposed project can be replaced by energy conservation and efficiency. The intended purpose of this project to replace retiring generating facilities makes a no-build alternative not feasible. As such, no higher priority options are cost-effective and technically feasible.

The Commission may conclude that the proposed project will replace facilities lower on the energies priorities list and cannot be replaced by higher priorities; thus it may conclude that the proposed project complies with the EPL and furthers the public policy of the state in encouraging the development of renewable resources.[10]

Environmental Impacts

The proposed acquisition of the project is different in several respects from many of the more recent electric generation facility acquisitions the Commission has considered. First, in the instant case, the wind electric generating facility to be constructed by ALLETE Clean Energy on behalf of the Seller is less than 100 MW and therefore does not require a Certificate of Public Convenience and Necessity (CPCN) from the Commission prior to commencement of construction. In recent facility acquisition dockets, the public utility sought to acquire from a

[10] *See* Wis. Stat. §§ 1.12(3)(b) and 196.377.

merchant a greater than 100 MW electric generating facility that required a CPCN.[11] In those proceedings, the Commission considered the CPCN in a separate docket and examined whether the facility design and location was in the public interest considering alternative locations or routes, individual hardships, safety, reliability, and environmental factors. Wis. Stat § 196.491(3)(d). In those separate dockets, the Commission fulfilled its obligations under the Wisconsin Environmental Policy Act (WEPA) with the preparation of an Environmental Assessment (EA).[12] If the proposed project was over 100 MW or the applicants were seeking authority to construct the project, an EA would have been completed for this project, evaluating the anticipated impacts of the construction and operation of the facility, as well as potential mitigation actions to reduce those impacts.

This acquisition is also distinguishable from prior electric generation facility acquisitions in that here, the applicants have represented and the terms of the PSA provide that, they will not be acquiring the facility until after the completion of construction and after commercial operation of the project has begun. In other words, the applicants will have no part in developing, siting, or constructing the project prior to its operation. The Seller will be siting and developing the project, with ALLETE Clean Energy constructing it. In some prior acquisitions, the merchant sited and developed the projects that required a CPCN, but the acquisition by the public utility occured prior to completion of construction, with some construction work being completed after the utility took ownership. In those acquisition dockets, the Commission relied upon the environmental analysis completed in the separate CPCN proceeding, and focused its analysis in

[11] *See, e.g.*, 5-BS-226 and 5-BS-234.

[12] While the Commission's action regarding a solar electric generation facility is considered a Type III action under Wis. Admin. Code § PSC 4.10(3) and does not require the preparation of an EA or an EIS, the Commission has completed an EA for such facilities due to the size and amount of land that is typically covered by such projects. Construction of a wind electric generation facility is considered a Type II action under Wis. Admin. Code § PSC 4.20(2) and would typically require the preparation of an EA.

the acquisition dockets on whether the acquisitions would substantially impair the efficiency of the service of the public utility or, when placed in service, provide facilities unreasonably in excess of the probable future requirements or add to the cost of service without proportionately increasing the value or available quantity of service. Wis. Stat § 196.49(3).

In this docket, environmental factors relating to the construction of the proposed project have not been reviewed in this or another docket because ALLETE Clean Energy, which is not a public utility, is undertaking the construction and the project does not require a CPCN. Pursuant to the PSA, the Seller is required to obtain all required construction and environmental permits. The Seller and ALLETE Clean Energy must obtain local, state, and federal permits pertaining to many of the environmental topics that would be reviewed in a Commission EA, such as siting (zoning and conditional use permits), wetland and waterway impacts (Department of Natural Resources Chapter 30 permits), road use and repair (county and Wisconsin Department of Transportation permits), and airspace impacts (Federal Aviation Administration permits). The project must be constructed and operated in compliance with Grant County's Wind Siting Ordinance, which incorporates requirements described in Wis. Admin. Code ch. PSC 128 in relation to noise, decommissioning, and setbacks, among others. Should complaints arise during the operational phase of the project, the project would need to comply with the complaint process identified in Wis. Admin. Code § PSC 128.40.

Though the applicants represent that they will only acquire the project after construction is completed and the project has achieved commercial operation, the Commission may wish to consider including conditions, similar to those conditions it has imposed in prior dockets, that could ensure that the environmental guardrails imposed on the developer will continue after the acquisition, including conditions requiring Commission permission should the applicants desire

to undertake construction activities to complete the project, requiring the applicants to continue to comply with conditional use permit requirements on an ongoing basis, and requiring a complaint process that could ensure the project remains in compliance with Wis. Admin. Code ch. PSC 128. Such conditions could provide the Commission with the opportunity to complete any additional environmental review as may be required by WEPA, and could ensure that community impacts covered by local zoning ordinances and conditional use permits are carried through the life of the project after ownership is transferred. Proposed language for these conditions is discussed more particularly in the suggested conditions section below.

As to the acquisition, as distinct from the construction of the project, the purchase, sale, or transfer of utility property is a Type III action under Wis. Admin. Code § PSC 4.10(3). No unusual circumstances suggesting the likelihood of significant environmental effects on the human environment have come to the Commission's attention. Preparation of an environmental impact statement (EIS) under Wis. Stat. § 1.11 is not required. The proposed ownership transfer is not expected to significantly affect any historic properties under Wis. Stat. § 44.40, or any threatened or endangered species under Wis. Stat. § 29.604. The developer is required to obtain all local permits, including environmental permits, from relevant agencies including the Department of Natural Resources, prior to and during construction of the solar facility. The applicants would adhere to any operational requirements of the permits after the transfer of the facility. The Commission may find it reasonable to determine that the proposed acquisition complies with Wis. Stat. § 1.11 and Wis. Admin. Code ch. PSC 4.

Use of Brownfields

When considering issuing a CA for the construction of electric generating equipment and associated facilities, the Commission may only grant a CA if it determines that brownfields were

used to the extent practicable. Wis. Stat. § 196.49(4). Because the application under consideration in this docket is an application to approve the purchase, as opposed to the construction, of electric generating equipment, this requirement is potentially inapplicable. Moreover, the applicants note in their application that they are not aware of any Wisconsin brownfield sites that would be of sufficient size and would meet the siting criteria for land and electric infrastructure for the project. No party introduced any evidence that contrary to that representation. The Commission may find it reasonable that the use of brownfields was not practicable.

Proposed Conditions

Section 196.49 of the Wisconsin Statutes specifically authorizes the Commission to impose terms and conditions on any CA approval. Wis. Stat. § 196.49(3)(c). If it approves the acquisition of the project, the Commission may find certain conditions on the approval to be appropriate, similar to those conditions that the Commission has previously imposed on a CA for a transaction of this type. The Commission has imposed similar conditions in prior dockets to ensure that the project continues to meet the statutory requirements for approval.

For purposes of clarity for both the Commission and the applicants, Commission staff suggests that the Commission may wish to include the following condition language in its Final Decision, should the Commission decide to approve the application:

1. The Commission, consistent with its past practice, shall review in a future rate case the recoverability of costs associated with the acquisition, O&M costs, and revenues associated with the project; provided, however, the recoverability of acquisition payments to ALLETE Clean Energy and the Seller shall not exceed $162 million. Notwithstanding the foregoing, the applicants may request in a future rate case recovery of acquisition costs in excess

of $162 million in the event that acquisition costs increase as a result of *force majeure* event(s) (provided, however, that the applicants have provided notice to the Commission within 30 days learning of any such *force majeure* event(s).) This exception does not bind the Commission to any specific treatment or recoverability of acquisition costs in any future rate case proceeding.

2. The applicants are expressly prohibited from engaging in construction activities associated with the project without prior authorization from the Commission.

3. The applicants shall notify the Commission of the effective date of the purchase of the project within 30 days of the effective date of the transfer. If the applicants do not proceed to closing or enter into any arrangement with another party regarding ownership or operation of the project, they shall provide prior notice to the Commission. Further, within 60 days of the effective date of the transfer, the applicants shall file with the Commission the final closing purchase price.

4. After the purchase of the facility, the applicants shall uphold all agreements made by the developer of the project, including but not limited to good neighbor agreements, shared economic payments and other local agreements, that mitigate environmental impacts of the project operation. The applicants shall be bound by all consumer protections outlined in the PSA, including but not limited to:

a. The applicants must obtain all environmental and other governmental permits from the Seller, in final and non-appealable form, for construction and operation of the facility. (PSA, Section 5.5and Schedule 6.11Exhibit E (list of permits).)

b. The applicants must conduct environmental site assessments to ensure that the Seller's transfer of the facility will not include future environmental liability. (PSA, Article 6.7)

5. All required governmental permits must be issued for the proposed project before the applicants may purchase and operate the facility, and applicants must comply with the requirements and conditions in all such permits, including without limitation the Grant County-issued conditional use permit and all requirements of landowner agreements associated with the proposed project.

6. If the applicants receive a complaint of a violation of the noise standards contained in PSC 128.14, the applicants shall provide Commission staff with the results of an accurate test conducted within 2 years of the date of the complaint showing that the wind energy system is in compliance with the noise standard at the location relating to the complaint. If an accurate test has not been conducted within 2 years of the date of the complaint, the applicants shall promptly conduct a noise study to evaluate compliance with the noise standards at that location using the most current version of the noise measurement protocol as described in PSC 128.50(2).

7. All commitments made by the applicants in their application and subsequent filings shall apply to the applicants, any agents, contractors, successors, assigns, corporate affiliates, and any future owners or operators of the project. To the extent the applicants transfer any ownership or operational interest in the project, in whole or in part, to a third party, such transfer does not confer either additional rights or obligations upon that third party other than what is afforded to the original owners of the project as specified in this docket.

Commission Alternatives

Alternative One: Approve the transaction as proposed in the application.

Alternative Two: Approve the proposed transaction with any or all of the conditions identified by Commission staff in this memorandum.

Alternative Three: Do not approve the proposed transaction.

MRD:JAK:jlt:DL: 01836805

Key Background Documents
Appendix E - Part 1 of 12 CONFIDENTIAL (Attachments Included) - PSC REF#: 409470
Appendix E - Part 1 of 12 CONFIDENTIAL (REDACTED COPY) (Attachments Included) - PSC REF#: 409471
Appendix E - Part 2 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409472
Appendix E - Part 3 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409473
Appendix E - Part 4 of 12 - PSC REF#: 409474
Appendix E - Part 5 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409475
Appendix E - Part 6 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409476
Appendix E - Part 7 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409477
Appendix E - Part 8 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409478
Appendix E - Part 9 of 12 (ATTACHMENTS INCLUDED) - PSC REF#: 409479
Red Barn Wind CA Application - CONFIDENTIAL - PSC REF#: 411085
Appendix A-CONFIDENTIAL Generation Reshaping Need Case - WEC Utilities_Red Barn - Revised - PSC REF#: 411087
Appendix B-CONFIDENTIAL Generation Reshaping Economic Evaluation -WEC Utilities_Red Barn - Revised - PSC REF#: 411089
Appendix B-CONFIDENTIAL Generation Reshaping Economic Evaluation -WEC Utilities_Red Barn - Revised (REDACTED COPY) - PSC REF#: 411090
Appendix C-CONFIDENTIAL WPSC Project Need - Red Barn - Revised - PSC REF#: 411091
Appendix C-CONFIDENTIAL WPSC Project Need - Red Barn - Revised (REDACTED COPY) - PSC REF#: 411092
MGE_Appendix_C_Red_Barn_Wind_Project_Addendum - PSC REF#: 411183
MGE_Appendix_C_Red_Barn_Wind_Project_Addendum (REDACTED COPY) - PSC REF#: 411184
Final Decision signed and served 3-20-18 - PSC REF#: 339856
Red Barn Wind CA Application - CONFIDENTIAL - PSC REF#: 407667
MGE-Response-Data Request-PSC-Kitsembel-3 - PSC REF#: 423494
Response-Data Request-PSC-Kitsembel-Vbl-102221 Rev CONFIDENTIAL (REDACTED COPY) - PSC REF#: 425543