

**BEFORE THE
PUBLIC SERVICE COMMISSION OF WISCONSIN**

**Joint Application of American Transmission
Company LLC and Northern States Power
Company – Wisconsin, as Electric Public
Utilities, For Authority to Construct and Operate
a New 345 kV Transmission Line from the La
Crosse area, in La Crosse County, to the greater
Madison area in Dane County, Wisconsin**

Docket No. 5-CE-142

POST-HEARING REPLY BRIEF

OF

**WIND ON THE WIRES, FRESH ENERGY, IZAAK WALTON LEAGUE – MIDWEST
OFFICE, AND MINNESOTA CENTER FOR ENVIRONMENTAL ADVOCACY
(COLLECTIVELY “CLEAN ENERGY INTERVENORS”)**

February 13, 2015

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Wind on the Wires, Fresh Energy, Izaak Walton League – Midwest Office, and Minnesota Center for Environmental Advocacy (“Clean Energy Intervenors” or “CEI”) respectfully submits its Reply Brief in the above-captioned matter in support of the joint application of American Transmission Company and Northern States Power Company of Wisconsin (the “Applicants”) for a certificate public convenience and necessity (“CPCN”) under Wisconsin Statutes section 196.491 for a 345 kilovolt (“kV”) line from LaCrosse to Middleton, Wisconsin (“Badger Coulee Project” or “Project”).

Clean Energy Intervenors’ brief responds to arguments from Save Our Unique Lands of Wisconsin, Inc. (“SOUL”), Citizens Energy Task Force, Inc. (“CETF”), and Environmental Law and Policy Center (“ELPC”) as submitted through their respective initial briefs that were filed with the Public Service Commission of Wisconsin on January 30, 2015.

I. INTRODUCTION

CEI continues to support granting a CPCN to the Applicants for the Project. Multi-Value Projects (“MVP”) such as the Project are needed to enable the development of additional wind resources in the Midwest. As argued in CEI’s initial brief, the Project meets Wisconsin’s statutory criteria for granting a CPCN, and the arguments that local actions—such as energy efficiency, load management and distributed generation—will provide the same benefits that this transmission project can provide has not been demonstrated by intervening parties. Although those local actions can be important components to reducing the region’s overall carbon footprint, they cannot be implemented in isolation or provide the regional benefits that the Project can provide. An upgraded transmission system is absolutely integral to reaching the level of renewable energy penetration—specifically wind—that is necessary to meet current and future policy goals such as the U.S. Environmental Protection Agency’s proposed Clean Power Plan

(“CPP”). Wind is also known to place downward pressure on wholesale electricity prices, which results in a lower cost of electricity for ratepayers.

II. REPLY

1. The Record Demonstrates The Need For And Significant Benefits Of The Project.

Multiple parties argue that the Applicants did not provide sufficient information to demonstrate that the Project meets the standard for granting a CPCN, or that the facts themselves are insufficient.¹ These parties are incorrect. It is clear from the overall record that the Project meets multiple needs and provides multiple benefits and that the Applicants should therefore be granted a CPCN. In demonstrating that finding, the Applicants analyzed numerous future scenarios that are reasonable and plausible—including two very low-load-growth futures. Moreover, the Project meets four significant needs: (a) lowering wholesale electricity prices for Wisconsin; (b) improving transmission import capability and reliability in Wisconsin; (c) increasing Wisconsin’s and multiple states’ access to low cost wind energy that can be used by the state to comply with the CPP; and (d) increasing multiple states’ access to low-cost renewable energy that can be used by the region to comply with state renewable portfolio standard (“RPS”) laws.²

There are 2,750 megawatts (“MW”) of wind generation facilities that are either operating or have approval to interconnect to the Midcontinent Independent Service Operator, Inc. (“MISO”) transmission system. The Project will allow these projects to either increase the number of hours in which they operate or allow them to come on-line. The additional wind energy can lower wholesale electricity costs. Wind resources have no fuel costs, so their bids into MISO’s wholesale electricity market are one of the lowest marginal costs. As such, they will

¹ See generally, SOUL Initial Brief; CETF Initial Brief; and ELPC Initial Brief.

² CEI Initial Brief, pp. 5-11.

always be one of the first forms of generation dispatched by the grid operator, thereby displacing units with higher marginal operating costs. As less efficient and more expensive plants are displaced, the wholesale market price is reduced and total production costs decrease. This lower cost and lower price can then be passed on to ratepayers. In addition, because wind's fuel costs are locked in at zero for the life of the project, wind energy helps to protect consumers from volatility in the price of other fuels.³

There are at least three sources demonstrating how the project resolves numerous reliability issues. First, the Applicants' analysis determined that twenty-nine reliability projects would be avoided.⁴ Second, MISO witness Rauch identified constraints that would be relieved on 345, 161 and 138 kV system elements running north south, constraints that would be relieved on west to east flows on the 161 kV line from Minnesota into Iowa, and reduction in loading on 60 highly loaded system elements.⁵ Third, CEI witness Michael Goggin described how the Project is needed to improve system import capability so congestion does not curtail approximately 2,750 MW of wind generation facilities that are either operating or have approval to interconnect to the MISO transmission system.⁶

An upcoming policy with significant impacts on the planning horizon of energy infrastructure is the CPP.⁷ On June 2, 2014 EPA published a draft rule to reduce the carbon dioxide ("CO₂") emissions from existing fossil fuel generation plants to target levels set by the EPA. A final rule is to be issued in the summer of 2015. EPA's proposed rule specifically allows

³ Direct-CEI-Goggin, p. 4.

⁴ Direct - Applicants - Burmester – 1, pp. 28-29; *see also*, Direct - Applicants - King-Huffman, pp. 15-17.

⁵ Direct - MISO - Rauch, pp. 25r-28r; *see also*, Exh. - MISO - Rauch - 2, Appendix E4.

⁶ Direct - CEI - Goggin, pp. 3-4 and 7.

⁷ CEI Initial Brief, pp. 4-5; *accord*, Direct - MISO - Rauch, p. 35r, *stating* that the MVP provides carbon emission reductions.

states to use renewable energy as a way to comply with the required carbon emission reduction targets.⁸ Wisconsin's emission target level significantly exceeds the amount of existing renewable energy generation both located in Wisconsin and currently being purchased for compliance with the Wisconsin RPS. Once the final emission levels are set for Wisconsin, the state is likely to have a need for more renewable energy.⁹

A transmission line in the same region as the Badger Coulee Project has been evaluated for more than fourteen years to increase electricity import capability or resolve reliability issues, or both.¹⁰ MISO incorporated the line as part of its MVP portfolio in an attempt to increase states' access to low cost wind energy¹¹ that could be used to meet state RPS laws.¹² There are seven states within the MISO footprint that can use wind energy resources that benefit from the Project being built. If we only evaluate Illinois, Missouri and Wisconsin, these states will need an incremental addition of wind capacity above their 2013 levels of something in the range of 5,771 to 8,084 MW to comply with their state RPSs.¹³

There are three credible estimates of the economic benefits the Project will provide Wisconsin—MISO's MVP Portfolio: Results and Analyses, MISO's Draft MTEP14 MVP Triennial Review and the Applicant's economic analysis. The Applicants found that the Project will produce *net* economic benefits ranging from \$118 million to \$702 million.¹⁴ Moreover, the

⁸ *Id.*, p. 5.

⁹ Direct-CEI-Goggin, pp. 5-6.

¹⁰ Direct- Applicants- Burmester, pp. 9:1 - 11:19.

¹¹ Direct - MISO - Rauch, pp. 33r and 37r.

¹² Ex. - MISO - Rauch - 1, pp. 16-17.

¹³ *Id.*, p. 4-5; *see also* Ex.-CEI-Goggin-3.

¹⁴ Ex.-Applicants-Henn-1r (Joint Application, Appendix D, Ex.1), Table G1.

Applicants evaluated two futures with load growth in ATC’s footprint of 0.2%—the Slow Growth and the Carbon Constrained futures.¹⁵

These findings are consistent with the results in two MISO MVP studies that were issued in 2012 and 2014. Wisconsin is split between two MISO Local Resource Zones. The table below summarizes the benefits of the portfolios of MVP transmission projects to the two Local Resource Zones in Wisconsin:

	2012 MVP Report	2014 Draft MVP Report
East Wisconsin	2.0:1 to 3.3:1 ¹⁶	2.3:1 to 2.6:1 ¹⁷
West Wisconsin	1.6:1 to 2.9:1 ¹⁶	2.5:1 to 3.9:1 ¹⁷

Thus, the entirety of the record demonstrates that there is sufficient need for the project and that the line provides significant benefits to Wisconsin and the Midwest region.

2. The Local Actions CETF/SOUL Has Discussed Do Not Rise To The Level Of Being Considered An Alternative To The Project.

SOUL and CETF raise the idea that a number of local actions can be done to address reliability issues.¹⁸ The local actions can include energy efficiency, demand response and distributed solar. Neither SOUL nor CETF have: shown that the local actions resolve reliability issues identified by MISO *under a broad range of futures*; demonstrated that the local actions provide the same level of regional benefits as the Project; identified the extent to which the local actions would need to be implemented to replace the Project under a broad range of futures; or analyzed the impacts the local actions have on generation dispatch and overall cost of electricity production.

¹⁵ *Id.*, p. Tables 12 and 13.

¹⁶ Direct - CEI - Goggin, p. 9; *see also* Ex.-MISO-Rauch-1, pp. 6 and 85.

¹⁷ Direct - CEI - Goggin, p. 12; *see also* Ex.-MISO-Rauch-3, p. 7.

¹⁸ SOUL Initial Brief, pp. 16-17, 28-29, 32-33; CETF Initial Brief, pp. 24-25, 27-28.

CETF/SOUL's analysis is intended to demonstrate that local actions offset reliability issues at zero to low load growth, however, CETF/SOUL does not analyze load growth rates greater than 0.2%—which is captured under four of the Applicants' six futures. More specifically, CETF/SOUL's analysis fails to estimate the cost for offsetting load growth rates greater than 0.2%.

CETF/SOUL's analysis fails to account for the need for renewable energy to meet state renewable energy laws that have increasing requirements beyond 2020, as well as demand for renewable energy in the Midwest due to the CPP.¹⁹ For the local actions to be equivalent to the Project, they need to provide the same level of benefits the Project can provide at a commensurate cost. Thus, there is no way to find that some combination of local actions would provide the same level of regional benefits as the Project.

Even if it were possible to develop a portfolio of local actions that provides an equivalent level of benefits as the Project, the use of local actions would fail to qualify for cost sharing with other MISO states (a cost sharing for which the Project qualifies). The consequence of the unavailability of cost sharing for local actions is that Wisconsin electric customers would pay for the entire cost of the local actions.

CETF/SOUL did not analyze a combination of local actions impacts on generation dispatch and overall cost of production of electricity. CETF/SOUL did not provide the results of a PROMOD or similar analysis that would provide such information.

Given the foregoing differences, it is clear that the local actions—energy efficiency, demand response (i.e., load management) and distributed solar—that CETF/SOUL has proffered

¹⁹ See CEI Initial Brief, pp. 6-7.

for discussion are incapable of meeting the same needs as the Project, providing the same level of benefits as the project or do so at a comparable cost.

3. In Evaluating The Project The Commission Should Not Ignore The Benefits The Project Provides Outside Of Wisconsin.

CETF states that “the transfer capacity the Commission must ensure exists is transfer capacity that brings energy *into* the state—not transfer capacity that takes energy out of the state.”²⁰ The need for the Project, however, is not Wisconsin-centric. It is a transmission line that has been specifically analyzed by the regional transmission organization—MISO—to provide multiple benefits. It was selected for its ability to facilitate development of renewable energy in Wisconsin and states west of Wisconsin that could be used to meet the renewable energy demands of any state within MISO that had the capability of purchasing that wind. It was also analyzed for its reliability benefits in Wisconsin and neighboring states.²¹ While the Commission’s obligation is to ensure just and reasonable rates to Wisconsin ratepayers, it cannot turn a blind eye to the entire picture—that the Badger Coulee Project provides benefits for, and outside of, Wisconsin. Those benefits need to be given appropriate weight in determining the reasonableness and likelihood of this line being necessary and in the public interest.

The goal of the portfolio of MVPs was to enable state renewable requirements to be met at the lowest delivered wholesale energy cost. As the 2012 MVP Report states:

The 2011 MVP portfolio analysis hypothesized that this set of candidate projects will create a high value transmission portfolio, enabling MISO states to meet their near term RPS mandates. The study evaluated the candidate MVP portfolio against the MVP cost allocation criteria to prove or disprove this hypothesis, as well as to confirm that the benefits of the portfolio would be widely distributed across the footprint. The output from the study, a recommended MVP portfolio, will reduce the wholesale cost of energy delivery for the consumer by enabling the delivery of low

²⁰ CETF Initial Brief, p. 25.

²¹ Ex.-MISO-Rauch-1, pp. 4 and 27-28.

cost generation to load, reducing congestion costs and increasing system reliability, regardless of the future generation mix.²²

Furthermore:

The cost calculation combined the expenses of the new transmission portfolios with the capital costs of the new renewable generation, balancing the trade offs of a lower transmission investment to deliver wind from low wind availability areas, typically closer to large load centers; against a larger transmission investment to deliver wind from higher wind availability areas, typically located further from load centers.²³

MISO's federal tariff specifically requires that the benefits of the portfolio of projects exceed the costs of those projects.²⁴ The specific justifications for the line are as follows:

The 345 kV line from North LaCrosse to North Madison creates a tie between the 345kV network in western Wisconsin to the 345 kV network in southeastern Wisconsin. This **creates an additional wind outlet path across the state; pushing power into southern Wisconsin, where it can go east into Milwaukee, or south to Illinois, providing access to less expensive wind power in two major load centers.** With the Brookings project, the **wind coming into North LaCrosse needs an outlet, and the line to North Madison is the best option studied.** From a reliability perspective, the addition of the North LaCrosse to North Madison to Cardinal 345 kV path helps relieve constraints on the 345 kV system parallel to the project to the north and south of the new line. **The 138 and 161 kV system in southwest Wisconsin and nearby in Iowa are also overloaded during certain contingent events,** and the new line relieves those constraints. This project will mitigate twelve bulk electric system (BES) NERC Category B thermal constraints and eight NERC Category C constraints. It will also relieve 30 non-BES NERC Category B and 36 NERC Category C constraints.²⁵

Through its analysis, MISO found that the most cost-effective way for MISO states to comply with their state renewable energy laws is for new transmission to be built to facilitate

²² *Id.*, p. 5.

²³ *Id.*, p. 4.

²⁴ *Id.*, p. 8.

²⁵ *Id.*, p. 28 (emphases added).

development of wind across the MISO footprint/region.²⁶ Because the MVP portfolio of transmission projects is to provide economic and reliability benefits to all states within MISO, the costs of the MVP projects are allocated to all of the MISO states based on their load.²⁷ Therefore, each state is paying according to the potential benefits it can receive from accessing new wind resources and from a lower generation production cost due to more wind and fewer transmission constraints from all of the transmission projects—including the Badger Coulee Project.

Thus the Project is intended to provide benefits to a regional area, and the regional area is paying for the construction costs, so the Commission should not ignore the regional benefits of the line.

4. There Is No Need For Further Study Of Low Load Scenarios.

SOUL, CETF and ELPC allege that the Applicants have not met their burden to demonstrate that the Project is beneficial because the Applicants have failed to provide information about all energy investment options relative to this Project.²⁸ These claims should be rejected. Applicants have looked at a wide range of growth scenarios including two scenarios—Slow Growth and Carbon Constrained—that include very low growth rates of 0.2%.²⁹ To get an idea of how low those load growth rates are, they are one-seventh as large as the mid-level growth rate used by the Applicants³⁰ and one fifth of the mid-level growth rate used by MISO in its 2014 transmission expansion plan.³¹ And MISO's mid-level growth rate was definitively

²⁶ *Id.*, p. 17.

²⁷ Direct - Applicants - Hodgson, p. 4.

²⁸ SOUL Initial Brief, pp. 6-12; CETF Initial Brief, pp. 32-35; ELPC Initial Brief, pp. 2-9.

²⁹ Ex.-Applicants-Henn-1r (Joint Application, Appendix D, Ex.1), Tables 12 and 13.

³⁰ *Id.*

³¹ Ex. - MISO- Rauch - 3, pp. 14-15.

characterized by MISO as being a relatively low growth future—it is “a slow recovery from the economic downturn [of 2009] and its impact on demand and energy projections.”³²

It is important to note that the Slow Growth and Carbon Constrained futures yield positive *net* economic benefits for Wisconsin.³³

Further analysis of a low load future would only unnecessarily delay the Project. There is a need for renewable energy in Wisconsin and in the region by 2020, and further analysis risks delaying an in-service date beyond 2020. A few of the drivers of need around that 2020 dates are Illinois’ and Missouri’s RPS need for low-cost renewable energy beyond 2020.³⁴ States throughout the Midwest will need renewable energy to comply with CPP as early as 2020 and continuing beyond 2030.³⁵ Finally, there are nearly 1,500 MW of wind generation facilities operating under Temporary Generation Interconnection Agreements (“GIAs”), and another approximately 1,250 MW of wind generation facilities in MISO’s generation interconnection queue ready for an off-taker and sufficient transmission capacity to allow them to be built.³⁶ The wind generating facilities operating under temporary GIAs are operating at less than their potential design capacity³⁷ and thus are not earning the revenue they should.³⁸ There is another 4,900 MW of wind generation facilities in development in states west of Wisconsin also in need of an off-taker and sufficient transmission capacity.³⁹ That equals approximately 7,650 MW of wind generation facilities whose full operation or interconnection to the transmission grid has

³² *Id.*, p. 14.

³³ , Ex.-Applicants-Henn-1r (Joint Application, Appendix D, Ex.1), Table G1.

³⁴ CEI Initial Brief, p. 6.

³⁵ *Id.*, p. 7.

³⁶ CEI Initial Brief, p. 7; *see* Direct - CEI - Goggin, pp. 3-5; *see also* Ex. - CEI - Goggin - 2.

³⁷ Direct - CEI- Goggin, p. 3.

³⁸ *Id.*, p. 26.

³⁹ CEI Initial Brief, p. 7; *see* Direct - CEI - Goggin, pp. 3-5; *see also* Ex. - CEI - Goggin - 3.

need for additional transmission capacity in western Wisconsin so as to meet the growing renewable energy demands of the Midwest.

It is unlikely the distributed solar espoused by SOUL and CETF can meet the needs for renewable energy in the region like the wind generating capacity described above and currently sitting ready to be built and operated. In support of solar energy's growing capabilities, SOUL/CETF witness Powers notes that a .305 MW and a .822 MW solar generation facilities operate along the proposed corridor of the Project and a 100 MW utility scale plant being built in Minnesota. While we do not oppose solar energy resources, there is a dearth of solar projects with sufficient capacity to provide the equivalent energy output of the up to 7,650 MW of wind generation capacity ready to be built if additional transmission is built in western Wisconsin.

5. SOUL's Proposal To Curtail Existing Wind Generation Plants As A Tool To Prevent NERC Violations Is Imprudent.

SOUL suggests that curtailing wind under the Low Voltage Alternative to the Project would be an effective way to avoid NERC violations.⁴⁰ It is important to point out that SOUL provides no analytical support justifying the extent to which wind could or should be curtailed, or if it would be cost effective under any of the futures analyzed by the Applicants.

There are approximately 1,500 MW of wind generation plants operating under Temporary GIAs. Typically, under a temporary GIA a wind generating facility is operating at less than its potential design capacity.⁴¹ If wind were to be actively and routinely curtailed under a Low Voltage Alternative, then new, additional renewable resources would need to be built to replace the potential wind resource that is currently interconnected but is being under-utilized due to curtailments. This unnecessarily requires new renewable generation be added to the system, which multiplies the cost of producing wholesale electricity.

⁴⁰ SOUL Initial Brief, pp. 19-20.

⁴¹ Direct - CEI - Goggin, pp. 3, 24 and 26.

Numerous studies have demonstrated that wind and transmission can lower the overall wholesale cost of electricity. Analyses of a transmission overlay in the Southwest Power Pool and a separate analysis of adding seventeen gigawatts of wind to MISO through transmission upgrades would yield annual benefits three to four times the annual cost of the project.⁴² And a 2012 study by Synapse Energy found that the addition of 20 to 40 gigawatts of wind energy to the MISO grid would save a homeowner between \$63 and \$200 per year.⁴³ SOUL/CETF has not demonstrated that the local actions it reviewed would yield the same magnitude of benefits above cost or a similar amount of savings to homeowners.

Because the curtailment of wind would unnecessarily increase the cost of production of renewable energy above what could optimally be achieved with existing renewable energy resources and SOUL/CETF has not demonstrated that local actions would reduce the cost to produce electricity similar to the wind that would be curtailed, this idea it is imprudent.

III. CONCLUSION

Wisconsin Statute section 196.491 establishes the criteria the Commission must consider when reviewing an application for a CPCN. CEI, through this brief, has responded to key issues raised by Intervenors related to the Project's need and benefits. CEI respectfully recommends that the Commission adopt the arguments herein and in our initial brief, and grant the Applicants' CPCN.

⁴² *Id.*, pp. 19-20.

⁴³ *Id.*, p. 20.

Dated: February 13, 2015

Respectfully submitted,

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