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PUC Docket No. CN-06-1115

STATE OF MINNESOTA
OFFICE OF ADMINISTRATIVE HEARINGS
FOR THE PUBLIC UTILITIES COMMISSION

In the Matter of the Application of Great
River Energy, Northern States Power
Company (d/b/a Xcel Energy) and others for
Certificates of Need for the Cap X 345-kV
Transmission Projects.

CITIZENS ENERGY TASK FORCE
POST-HEARING BRIEF ON THE
MERITS OF THE APPLICATION FOR
CERTIFICATES OF NEED

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INTRODUCTION

Xcel Energy and Great River Energy (“GRE”), together the “Applicants,” have requested certificates of need for three CapX2020 345 kV transmission line projects, representing nearly \$2 billion in potential expenditures. As proposed in the Application for their certificates of need, the CapX2020 projects would have cost from \$1.4 to \$1.7 billion; in the current “upsized” version requested by Applicants, the projects would cost from \$1.6 to \$1.9 billion.¹ It is fitting that the term “CapX” refers both to “capacity expansion” and to “capital expenditures.”²

The Applicants’ CapX2020 proposal requests certificates of need for three separate transmission projects: a 345 kV transmission line from the Twin Cities to La Crosse, Wisconsin approximately 150 miles long and associated 161 kV transmission lines and connections (“La Crosse Project”); a 345 kV transmission line from the Twin Cities to Fargo, North Dakota approximately 250 miles long and associated connections (“Fargo Project”); and a 345 kV transmission line from the Twin Cities to Brookings, South Dakota approximately 200 miles long and associated transmission lines and connections (“Brookings Project”).³

The Applicants have requested certificates of need not only on their own behalf, but also on behalf of other entities that are currently participating in the CapX2020 projects by virtue of Project Development Agreements signed in March 2007 or who may participate in the CapX2020 projects in the future. Applicants have proposed to make a compliance filing after the certificate of need and all major permits are obtained disclosing ownership of the projects.⁴ The entities currently entitled to own specified percentages of the CapX2020 projects are public utilities.⁵ However, non-regulated

¹ Ex. 1, p. 1.17 (Application); Ex. 91 (Stevenson Chart).

² Tr. V. 6, p. 34 (McCarten).

³ More detailed descriptions of the CapX2020 projects are provided in CETF Findings of Fact.

⁴ See Applicants’ Post-Hearing Brief on the Merits of the Application for Certificates of Need, p. 1.

⁵ Central Minnesota Municipal Power Agency (Brookings Project); Dairyland Power Cooperative (La Crosse Project), Great River Energy (Fargo Project, Brookings Project), Minnesota Power (Fargo Project), Missouri River Energy Services (Fargo Project, Brookings Project), Otter Tail Power Company (Fargo Project, Brookings Project), Rochester Public Utilities (La Crosse Project), Southern Minnesota Municipal Power Agency (La Crosse Project), Wisconsin Public Power Inc. (La Crosse Project), Xcel Energy (La Crosse Project, Fargo Project, Brookings Project). Ex. 1, Apx. B-2, Apx. B-3, Apx. B-4 (Application).

entities have expressed interest in participating in the CapX2020 projects in the past,⁶ and a transmission-only company such as TransLINK or ITC could obtain all or part ownership shares of the CapX2020 projects in the future.⁷

Applicants and other utilities developed the plans for the CapX2020 projects that are the subject of these proceedings over several years and conducted the studies that are contained in their Application from 2004 through 2005. To a large extent their studies were based on projecting forward historical demand and historical patterns of generation. What is evident on this record is that Minnesota legislation enacted in 2007 substantially changed the reasonableness of reliance on these projections. Minnesota statutes enacted in 2007 established Renewable Energy Standards (“RES”);⁸ set goals and requirements for energy conservation;⁹ established greenhouse gas emissions policy, including a moratorium on construction or import of coal energy that increases greenhouse gases;¹⁰ and required a detailed study of the potential for dispersed renewable generation across Minnesota.¹¹ These new laws, in addition to Minnesota’s environmental protection statutes and preferences for conservation and renewable energy, are fundamental to analysis of the need for the proposed CapX2020 projects.

The CapX2020 projects have been reviewed in an extensive public hearing and public comment process, in discovery and in a lengthy administrative hearing. Citizens Energy Task Force (“CETF”), a grassroots organization of property owners and citizens formed to address concerns about the CapX2020 projects, has appreciated the participation of hundreds of community members and local officials in public hearings and the filing of public comments. The public record of this matter includes more than 220 individualized comments expressing concerns about some aspect of the CapX2020 projects. These comments reflect substantial public opposition to the CapX2020 projects, particularly the 345 kV La Crosse line. Citizens have expressed concerns that the

⁶ Minnesota Municipal Transmission Group (MMTG) is a signatory to the CapX2020 Participation Agreement, Ex. 1, Apx. B-1, p. 2, 27 (Application), although it has no current ownership rights. ITC, an independent transmission-only company, has previously expressed interest in CapX2020 participation, Tr. V. 6, p. 62 (McCarten); Tr. V. 14, pp. 11-12 (Grover).

⁷ Tr. V. 6, pp. 98-99 (McCarten); Tr. V. 14, p. 51 (Grover).

⁸ 2007 Minn. Laws, Ch. 136, Art. 6, amending Minn. Stat. § 216B.1691, subd. 2a.

⁹ 2007 Minn. Laws, Ch. 136, Art. 2, §§ 4-5, amending Minn. Stat. § 216B.2401.

¹⁰ 2007 Minn. Laws, Ch. 136, Art. 5, enacting Minn. Stat. § 216H.01 et seq.

¹¹ 2007 Minn. Laws, Ch. 136, Art. 4, §17.

CapX2020 projects may be used to transmit power from coal, rather than wind energy. The record expresses strong public sentiment that conservation, local renewable generation including C-BED projects, and smaller transmission lines provide a better solution to Minnesota's electricity needs than the CapX2020 projects. The public record also demonstrates serious misgivings about environmental and health effects of the proposed CapX2020 projects, including health effects of electromagnetic fields as well as concerns about the impacts to the Mississippi River Flyway and the Upper Mississippi River Wildlife Refuge if the La Crosse Project were to be constructed.¹²

CETF has appreciated the participation of other parties in this proceeding and the ways in which the Administrative Law Judge ("ALJ"), Court Reporter, Department of Commerce staff and Applicants have provided information and an opportunity for discovery and cross-examination, enabling our small and unfunded organization to develop a record of documentary and expert evidence in this complex matter.

Although little of the evidence from the administrative hearing in this matter is reflected in Applicants' Proposed Findings of Fact, a thorough and comprehensive record has been developed calling into question the needs for the CapX2020 projects asserted by Applicants and providing the foundation for the ALJ to recommend and the Minnesota Public Utilities Commission ("Commission") to conclude that a measured and discriminating response to Applicants' application for certificates of need is required to meet Minnesota's energy and reliability needs consistent with applicable law and policy.

This Brief on the Merits of Certificates of Need and the Proposed Findings submitted by CETF analyzes Applicants' proposal, applicable law and the full record developed in this matter to respectfully request that the ALJ recommend the following to the Commission:

- (i) that all certificates of need for the CapX2020 La Crosse Project be denied;
- (ii) that a certificate of need be granted for the segment of the CapX2020 Fargo Project from Monticello to St. Cloud, but that any other certificates of need for the Fargo Project be denied;

¹² Public comments are summarized in CETF's Proposed Findings of Fact.

- (iii) that certificates of need be granted for the CapX2020 Brookings Project, along with conditions to ensure that it be used for the purposes for which it is needed, namely to provide generation outlet support for wind energy from the Buffalo Ridge;
- (iv) that no certificates of need for any portion of the CapX2020 projects be granted for facilities “upsized” beyond those proposed in the Application;
- (v) that additional specified conditions be attached to any certificates of need issued in these CapX2020 proceedings to increase conformity with state policies, enhance socioeconomic benefits and protect ratepayers and residents.

SUMMARY

A. The CapX2020 High Voltage Transmission Projects Would Cause Environmental Impairment and Involuntary Costs to Property Owners and Ratepayers.

The Minnesota Supreme Court has determined that, “by definition, the siting of HVTLs [high voltage transmission lines] will cause some impairment of the environment.” People for Environmental Enlightenment and Responsibility (PEER), Inc. v. Minnesota Environmental Quality Board (MEQB), 266 N.W. 2d 858, 867-868 (Minn. 1978). The record in this proceeding confirms that the proposed CapX2020 projects would entail adverse impacts to the natural environment and potential health risks.

Under normal operating conditions, the CapX2020 transmission lines will create audible noise, interference with electromagnetic signals and electrical and magnetic fields extending along the entire length of the transmission lines.¹³ Modern farm equipment that relies on radio frequency technology to help steer tractors and more accurately till and spread chemicals can be affected by electromagnetic noise from high voltage power lines.¹⁴

The higher the operating electric voltage of a power line, the greater intensity of its electric field.¹⁵ Tall equipment used on a farm could create a risk of electrocution from direct contact with power lines¹⁶ and normal farm operations, such as parking a vehicle or using livestock fences near transmission lines, can result in induced voltage from power

¹³ Tr. V. 12, pp. 131-132 (LaCasse); Ex. 126, p. 2 (LaCasse Direct).

¹⁴ Tr. V. 12, p. 152 (LaCasse).

¹⁵ Tr. V. 12, pp. 152-153 (LaCasse); Ex. 126, p. 7 (LaCasse Direct).

¹⁶ Tr. V. 12, p. 156 (LaCasse).

lines through the air into the vehicle or fence.¹⁷ Transmission lines can also induce “stray voltage” on an electric distribution circuit that is parallel or under a transmission line. Farm animals affected by this stray voltage may not milk properly and may not feed properly.¹⁸ The predicted electric fields for the CapX2020 projects also exceed the levels that may produce interference with older style pacemakers.¹⁹

Although electric fields can be shielded by common materials, such as wood or metal, magnetic fields, related to the amount of current flowing through the power lines, easily pass through materials like wood or metal and will penetrate into houses and barns.²⁰ The World Health Organization (“WHO”) has classified electromagnetic fields as “possibly carcinogenic to humans” based on a pooled analysis of epidemiological studies demonstrating a consistent pattern of a two-fold increase in childhood leukemia associated with average exposure to residential power-frequency magnetic fields.²¹ Most of the peak magnetic fields at the edge of the right of way for the proposed CapX projects substantially exceed the level associated with doubling of childhood leukemia in the WHO pooled epidemiological studies.²² Although the WHO study does not assert a causal relationship with this form of cancer, other recent international studies have concluded that exposure to electromagnetic fields causes childhood leukemia.²³

High voltage power lines also necessarily entail adverse and involuntary costs to property owners and ratepayers. As CETF witness Arne Kildegaard explained,

Transmission projects are controversial for several good reasons, including, one, they affect the aesthetic characteristics, environmental attributes, and property values of privately-held lands located in the transmission corridor. . . . The first of those reasons, namely, the effects on lands in the transmission corridor, is not controversial. In my opinion, the compensation scheme for affected landowners and their neighborhoods is likely to be inadequate when compared to the material damage to their interests.²⁴

¹⁷ Tr. V. 12, pp. 158-159 (LaCasse); Ex. 1, pp. 9.31-9.32 (Application).

¹⁸ Tr. V. 12, pp. 159-161 (LaCasse).

¹⁹ Ex. 5, p. 24 (Environmental Report).

²⁰ Tr. V. 12, pp. 108, 162 (LaCasse).

²¹ Ex. 5, p. 27 (Environmental Report).

²² Estimates for CapX2020 electromagnetic fields in Table 2-5 in Ex. 5, pp. 24-26 (Environmental Report) and Figure 9-10 in Ex. 1, pp. 9.29-9.30 (Application) exceed the 3 to 4 milliGauss level (equivalent to 0.3 to 0.4 μ T) associated with doubling of childhood leukemia in the WHO studies.

²³ Pub Cmt. Docket No. 5520590, pp. 14-19 (Letter of J. Otto, Chair of the Eureka Township Board of Supervisors, filed 9/24/08); Pub. Cmt., Docket No. 5520587, p. 8 (August 31, 2007 *BioInitiative Report: A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF)* filed 9/24/08 as Otto Email Attachment)

²⁴ Tr. V. 18A, p. 50 l. 12- p. 51 l. 9 (Kildegaard).

If any of the CapX2020 projects are approved by the Commission, Applicants will be entitled to condemn property for right-of-way and construction easements by eminent domain.²⁵ They will also be entitled to charge the ratepayers of their monopoly utilities to pay for the costs of constructing and operating the high voltage transmission facilities.²⁶

B. The CapX2020 Projects Can Only Be Certified if Applicants Demonstrate a Specific Need, Consistent with Criteria in Minnesota Statutes and Rules.

Department of Commerce Office of Energy Security (“OES”) witness Steve Rakow testified, “If there is no need for a project, charging ratepayers for it is unreasonable.”²⁷

No high voltage transmission line can be sited or constructed in Minnesota without the issuance of a certificate of need. The applicants for a certificate of need bear the burden of proof as set forth in Minnesota Statutes 216B.243, subd. 3:

No proposed large energy facility shall be certified for construction unless the applicant can show that demand for electricity cannot be met more cost effectively through energy conservation and load-management measures and unless the applicant has otherwise justified its need.

Minnesota’s certificate of need law also provides criteria that the Commission must evaluate in assessing need:

- The accuracy of the long-range demand forecasts on which the necessity for the facility is based, (Minn. Stat. § 216B.243, subd. 3(1));
- The effect of existing or possible conservation programs under other state legislation on long-term energy demand, (Minn. Stat. § 216B.243, subd. 3(2));
- Possible alternatives for satisfying the energy demand or transmission needs, (Minn. Stat. § 216B.243, subd. 3(6));
- Consistency with other state policies, rules and regulations, (Minn. Stat. §216B.243,subp. 3(7));

²⁵ Powers of condemnation, Minn. Stat. § 216E.12.

²⁶ Exclusive service rights, Minn. Stat. § 216B.40; recovery of costs, Minn. Stat. § 216B.1636.

²⁷ Tr. V. 25, pp. 51-52 (Rakow).

- Any feasible combination of cost-effective energy conservation improvements that can replace part or all of the energy to be provided by the proposed facility (Minn. Stat. § 216B.243, subp. 3(8)).

The conservation preference contained in the initial paragraph of Minnesota Statutes 216B.243, subd. 3 and the energy conservation requirements of subd. 3(d) have a clear impact on discretion to recommend or approve transmission. As stated in a recent ALJ decision in the Big Stone II case, these provisions “restrict the Commission from granting a certificate of need unless Applicants show their demand for electricity cannot be met at least in part through less expensive energy conservation and load management.”²⁸ The CapX2020 witness on conservation issues, Matthew Lacey, agreed that the certificate of need process requires an applicant to show that the demand for electricity cannot be met more cost-effectively through energy conservation and load management.²⁹

Minnesota Rules elaborate the statutory requirements for a certificate of need. Need is defined as a determination that “the probable result of denial would be an adverse effect upon the future adequacy, reliability, or efficiency of energy supply.” Minn. R. 7849.0120, subp. A. Applicants have acknowledged that the certificate of need process has a number of criteria to demonstrate a specific need for facilities proposed; it is not generically a need for some transmission improvement.³⁰ Not every potential “benefit” of an energy facility can be transmuted into need. Similarly, the assertion that upsizing is “pretty much standard practice” in other parts of the Midwest is not a justification for an energy facility under Minnesota law.

Under Minnesota Rules, the reference to forecasting includes the type of energy as well as the level of demand, so that certification considers “the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility.” Minn. R. 7849.0120, subp. A (1).

Minnesota Rules also explain that the showing for a certificate of need requires that no more reasonable and prudent alternative has been demonstrated by a

²⁸ Ex. 20, p. 5 (Big Stone II Supp. Findings 5/9/08).

²⁹ Tr. V. 4, p. 42, ll. 18-23 (Lacey).

³⁰ Tr. V. 4, p. 40-41 (Lacey).

preponderance of the evidence on the record. The considerations for evaluating a more reasonable alternative include environmental and economic criteria along with expected reliability. Minn. R. 7849.0120, subp. B. Applicants have testified that some ways of enabling transmission to deliver energy are more expensive than others and that the certificate of need process should apply a “least cost” test as long as the alternative meets reliability requirements.³¹

Minnesota Rules also specify the types of alternatives required to be presented by applicants for a certificate of need for a high voltage transmission line:

- (1) new generation of various technologies, sizes, and fuel types;
 - (2) upgrading of existing transmission lines or existing generating facilities;
 - (3) transmission lines with different design voltages or with different numbers, sizes, and types of conductors;
 - (4) transmission lines with different terminals or substations;
 - (5) double circuiting of existing transmission lines;
 - (6) if the proposed facility is for DC (AC) transmission, an AC (DC) transmission line;
 - (7) if the proposed facility is for overhead (underground) transmission, an underground (overhead) transmission line; and
 - (8) any reasonable combinations of the alternatives listed in subitems (1) to (7).
- (Minn. R. 7849.0260, subp. B).

Examination of alternatives is also a critical part of the content of the Environmental Report required to be prepared by the Department of Commerce for certificate of need proceedings:

Alternatives shall include the no-build alternative, demand side management, purchased power, facilities of a different size or using a different energy source than the source proposed by the applicant, upgrading of existing facilities, generation rather than transmission if a high voltage transmission line is proposed, transmission rather than generation if a large electric power generating plant is proposed, use of renewable energy sources, and those alternatives identified by the commissioner of the Department of Commerce. (Minn. R. 7849.7060, subp. B)

Minnesota’s certificate of need statute also contains a renewable energy preference, which applies to transmission as well as generation:

³¹ Tr. V.1B, p. 62, ll. 2-9 (Rogelstad).

The commission may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source. For purposes of this subdivision, "renewable energy source" includes hydro, wind, solar, and geothermal energy and the use of trees or other vegetation as fuel. (Minn.Stat. §216B.243, subp. 3a)

In addition, pursuant to Minnesota Statutes § 216B.243, subd. 3(7) and Minnesota Rules 7849.0120D various state statutes summarized below must be analyzed in determining whether a certificate of need should issue for the CapX2020 Projects:

Renewable energy standard: setting forth requirements for electric utilities serving Minnesota to provide retail customers with a specified percentage of renewable energy from eligible energy technologies on a schedule for 2010, 2012, 2016, 2020 and 2025. (Minn. Stat. §216B.1691, subd. 2a)

Energy conservation law: setting a goal of annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and precluding commissioner from approving a utility plan that provides for an annual energy savings goal of less than 1 percent. (Minn. Stat. §216B.2401)

Greenhouse Gas Emissions Control: prohibiting an increase in statewide power sector carbon dioxide emissions resulting from construction of coal plants or the importation or purchase of energy from coal plants. (Minn. Stat. §216H.03)

Dispersed Renewable Generation: statutory requirement for a study of the ability to site dispersed renewable generation to minimize impacts to transmission (2007 Minn. Laws, Ch. 136, Art. 4, §17).

Community-Based Energy Development: reflecting a state policy “to optimize local, regional, and state benefits from renewable energy development and to facilitate widespread development of community-based renewable energy projects throughout Minnesota.” (Minn. Stat. §216B.1612, subd. 1)

The Department of Commerce and the Public Utilities Commission must also carry out their responsibilities for energy infrastructure approval proceedings in

accordance with the Minnesota Environmental Policy Act (MEPA).³² High voltage transmission lines are subject to both MEPA and MERA. No Power Line, Inc. v. Minnesota Environmental Quality Council (EQC), 262 N. W. 2d 312 (Minn. 1977); People for Environmental Enlightenment and Responsibility (PEER), Inc. v. Minnesota Environmental Quality Board (MEQB), 266 N.W. 2d 858 (Minn. 1978). Once it has been shown that a high voltage transmission line results in environmental impairment, approval of the power line can only be justified if the state agency can demonstrate that no feasible and prudent alternative exists to the project, consistent with the public health, safety and welfare. PEER v. MEQB, 266 N.W. 2d at 867. MEPA states at Minnesota Statutes §116D.04, subd. 6,

No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.

Certificates of need for the CapX2020 may not be granted (i) if need is based on an inaccurate forecast; (ii) if the effect of conservation programs under other state legislation on long-term energy demand has not been taken into account; (iii) if cost-effective conservation meeting all or a part of the need for the facility has not been considered; (iv) if the record as a whole discloses a more reasonable and prudent alternative to the proposed facilities; (v) if construction and use of the proposed facility would conflict with the State's renewable energy preference; or (v) if construction and use of the proposed facility would conflict with other state policies, rules or regulations.

³² Legislation reorganizing Environmental Quality Board, Department of Commerce and Public Utilities Commission responsibilities in 2005 explicitly affirmed application of MEPA to transmission responsibilities. 2005 Minn. Laws, Ch. 97, Art. 3, § 17.

C. The Commission has Authority to Approve, Deny, Modify or Apply Conditions to Certificates of Need Requested for the CapX2020 Projects.

Applicants have asserted the need for three separate projects: the La Crosse Project, the Fargo Project and the Brookings Project. Each of the projects must be considered independently on its merits and must independently meet the criteria for certificate of need statutes and rules. Applicants have acknowledged that the Commission has the flexibility to make decisions approving none, one, two or three of the CapX projects.³³

Each of the CapX2020 Projects is independent and does not depend on another Project to go forward. If, for example, one project were denied, it would not impact the other two facilities but Applicants would need to model the change and assess needs going forward which might create proposals for other facilities.³⁴

The ALJ has the authority to recommend and the Commission has the jurisdiction to modify any of the proposed CapX 2020 transmission projects and to make issuance of the certificate contingent upon modifications and/or conditions on certification of any of the proposed CapX 2020 transmission projects. (Minn. Stat. § 216B.243, subd.5). Minnesota Rules suggest that “a suitable modification” of a proposed facility may be appropriate to demonstrate that a facility will “provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments, including human health.” Minn. R. 7849.0210, subp. C. The phrase “suitable modification” of a proposed facility is used in this subpart in connection with evaluating “overall state energy needs,” (1); “natural and socioeconomic environments,” (2); “inducing future development,” (3); and “uses to protect or enhance environmental quality,” (4).

Any certificates of need issued in this matter would be granted to the Applicants, Xcel Energy and GRE. Applicants acknowledge that they would remain responsible irrespective of ownership elections.³⁵ Although Applicants could further negotiate

³³ Tr. V. 15, p. 123 (Alders).

³⁴ Tr. V. 15, pp. 123-124 (Alders).

³⁵ Tr. V. 15, pp. 124-125 (Alders).

agreements to share the responsibilities for compliance with other utilities; that would be up to them.³⁶

D. Each Project and Each Need Asserted by Applicants Must be Analyzed Separately on the Complete Record to Evaluate Alternatives.

Applicants have asserted that the only alternative presented on this record is the upsizing alternative.³⁷ The Environmental Report prepared by Department of Commerce staff incompletely identified alternatives to the CapX2020 Projects, in part because the Environmental Report assumed Applicants' claimed need for the proposed project.³⁸ This assumption included an increase in system-wide growth of 4000 to 6000 MW, local load serving in specific cities along the routes and the potential to serve renewable energy at a level somewhere between 400 to 800MW.³⁹ As detailed in CETF's Findings of Fact, the Environmental Report lacked critical analysis required under pertinent law, for example:

- The Environmental Report analysis of conservation assumed that demand side management would need to replace the total megawatts of Applicants' claimed system-wide need and ceased their analysis when they concluded that conservation could not replace this level of megawatts.⁴⁰
- The Environmental Report did not analyze any alternative based on conservation and/or load management to address all or part of the community reliability needs identified by Applicants.⁴¹
- The no-build alternative in the Environmental Report did not take into account other local transmission or generation projects that are planned or underway that might affect the need issues alleged in the Application.⁴²
- No comparison was made in the Environmental Report of the environmental impacts of the La Crosse 345 kV line to alternatives that would not require a new 345 kV transmission line crossing of the Mississippi River.⁴³

³⁶ Tr. V. 20, pp. 48-49, 155-156 (Ellison); Ex. 204, p. 3 (Ellison Direct).

³⁷ Applicants Post-Hearing Brief on the Merits of the Application for Certificates of Need, p. 14.

³⁸ Tr. V. 17A, p. 55 (Birkholz).

³⁹ Tr. V. 17B, pp. 74, 76-77 (Birkholz).

⁴⁰ Ex. 5, p. 90 (Environmental Report); Tr. V. 17B, p. 8-9 (Birkholz).

⁴¹ Tr. V. 17B, p. 83 (Birkholz).

⁴² Tr. V.17B, pp. 90-91,92 (Birkholz).

⁴³ Tr. V. 17B, p. 85 (Birkholz).

OES testimony similarly narrowed the range of alternatives to be considered as meeting their “screening test” by considering only those alternatives that would get into the ballpark of meeting the entire demand asserted in the application of all three CapX2020 projects, including transferring 1,050MW, fixing the Rochester problem to 2050, and solving reliability issues for La Crosse and Alexandria.⁴⁴

The documentary record and expert witness testimony – both prefiled and under cross-examination – disclose alternatives to the CapX2020 projects once each of the projects and each of Applicants’ needs are analyzed separately to determine if they meet the standards set forth under Minnesota statutes and rules. In effect, this analysis performs the function described by Dr. Rakow in cross-examination when asked how one might develop alternatives to the CapX2020 projects:

The difficulty in this docket in terms of proposing alternatives is the fact that this proposal is meeting so many different needs, it becomes very difficult for somebody, even myself, to propose a comprehensive alternative. What you have to do is start with the Applicants' alternative, break it down into pieces, and look at each of those pieces, and then you reassemble it at the end, assuming you decide you want to change something.⁴⁵

Applicants have asserted three categories of need for the CapX2020 345 kV transmission projects: (1) system-wide growth in demand; (2) community service reliability in specific identified communities; and (3) generation outlet capacity/renewable energy support.⁴⁶

In CETF’s Proposed Findings and in subsequent sections of this Brief, CETF uses the complete record in these proceedings and all applicable law to break down these three categories of asserted needs individually and to analyze each CapX2020 project separately in light of these categories of need. At the end, in our recommendations, we reassemble the pieces and propose issuance and denial of various certificates of need, with appropriate conditions.

⁴⁴ Tr. V. 24, pp. 149-151(Rakow).

⁴⁵ Tr. V. 24, p. 152, ll. 5-13 (Rakow).

⁴⁶ Ex. 1, p. 1.3 (Application).

E. Summary of CETF’s Conclusions Regarding Need.

CETF proposes that the ALJ make the following findings with respect to the Applicants’ assertions of need for the CapX2020 Projects:

- System-wide growth in demand does not establish need for any of the CapX2020 Projects.
- The La Crosse Project is not needed for community reliability in either the Rochester or the La Crosse area and is not needed for generation outlet capacity. The La Crosse Project would result in harm to natural resources, including a national wildlife area, that feasible and prudent alternatives would prevent. No certificates of need should issue for the La Crosse Project.
- The Fargo Project is not needed for community reliability in the Northern Red River Valley, Southern Red River Valley or Alexandria. The segment of the Fargo Project 345 kV from Monticello to St. Cloud is needed for community reliability in St. Cloud. Applicants have not shown that the Fargo Project is needed for generation outlet capacity or renewable energy support. A certificate of need should issue only for the 345 kV segment of the Fargo Project from Monticello to St. Cloud.
- The Brookings Project is not needed for community reliability. To the extent that conditions ensure that it will be used for this purpose, the Brookings Project is needed to provide approximately 700MW of renewable energy support from the Buffalo Ridge and other areas served by the Project. Conditions are consistent with precedent and MISO queue reform and will not impede competition. Certificates of need contingent on conditions should issue for the Brookings Project.
- There is no need for “upsizing” of the CapX2020 projects to provide double-circuit capable 345 kV structures.
- Additional conditions for C-BED projects, requiring Commission review prior to transfer of CapX2020 assets and reducing risks to residents and farmers from adverse impacts of transmission lines are consistent with state law and policy and are needed to secure benefits and reduce harms from transmission projects.

ANALYSIS OF THE CAPX2020 PROJECTS

A. System-wide Growth in Demand Does not Establish Need for Any of the CapX2020 Projects.

Applicants’ claim that the CapX2020 Projects are needed due to system-wide growth fails to meet the criteria of Minnesota’s certificate of need statutes and rules:

- Applicants did not demonstrate that the claimed need was based on accurate long-range energy demand forecasts. Minn. Stat. § 216B.243, subd.3(1);
- Applicants did not demonstrate that the claimed need was based on an accurate forecast of demand for the type of energy that would be supplied by the proposed facility. Minn. R. 7849.0120, subp. A(1);
- Applicants did not demonstrate that the claimed need took into account the effect of expected conservation programs resulting from other state legislation on long-term energy demand. Minn. Stat. § 216.243, subd. 3(2);
- Applicants did not consider feasible and cost-effective energy conservation improvements that can replace all or part of the energy to be provided by the facility. Minn. Stat. § 216B.243, subd. 3(8);
- Applicants did not demonstrate that the claimed need reflected compliance with recently enacted state policies, rules and regulations pertaining to energy conservation, Renewable Energy Standards and greenhouse gas emissions control. Minn. Stat. § 216B.243, subd. 3(7).

Analysis of the reasonableness of Applicants’ forecasts is not a test of motives, as implied by the testimony of OES witness Hwikwon Ham that OES did not determine that Applicants’ forecast was “biased” toward building this project.⁴⁷ The purpose of analysis under the certificate of need statutes and rules is to determine whether current conditions pertinent to demand, conservation, type of energy to be supplied and other variables affected by state policies justify the environmental impacts and coerced costs inherent in any high voltage transmission project.

The forecasts in this Application may or may not have been reasonable or accurate at the time they were prepared. But it is quite clear on this record, in large part due to adoption of energy legislation in 2007, that they no longer provide an appropriate basis for certification of the CapX2020 transmission projects. This is not surprising – the purpose of legislation is often to effect a change in historical patterns.

1. Applicants’ forecasts of system-wide demand are unreasonable.

Applicants’ assertion that the CapX2020 Projects are needed due to system-wide growth in demand is based on the data reflected in the *CapX 2020 Technical Update*:

⁴⁷ Tr. V. 24, p. 33 ll. 13-14.

Identifying Minnesota's Electric Transmission Infrastructure Needs dated October 2005, contained in Appendix A-1 of the Application. Applicants refer to this study as the “Vision Plan.”⁴⁸

In the Vision Plan, planning engineers used the 2004 MAPP Load and Capability Report to assess future transmission needs through the year 2020 based on anticipated regional load growth within the service territories of electric utilities that have load-serving responsibilities for Minnesota consumers.⁴⁹ The Vision Plan anticipated growth in demand within the CapX 2020 region of 2.49 percent annually from 2009 through 2020, for a total projected increase of 6,300 megawatts.⁵⁰

In addition to modeling the projected load growth of 6300 MW, the CapX2020 technical team performed a “sensitivity analysis” for a reduced load level of 4500MW to determine if the CapX2020 facilities would be needed at this slower growth level. To model the 4500MW load level, the Vision Plan model was uniformly scaled down in each control area by a factor of 4500/6300 (about 71 percent).⁵¹ The CapX2020 Vision Plan study was performed from 2004 to 2005. It did not take into account more recent integrated resource plan forecasts or the energy savings goals and requirements enacted by the Minnesota Legislature in 2007.⁵²

In 2007 Minnesota’s energy conservation standard was changed from a spending goal to an energy savings goal.⁵³ A state energy policy to achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity was set and the Commissioner of Commerce was given authority to establish and evaluate energy savings programs to meet this objective.

- (a) The commissioner [of Commerce] shall establish energy-saving goals for energy conservation improvement expenditures and shall evaluate an energy conservation improvement program on how well it meets the goals set.
- (b) Each individual utility and association shall have an annual energy savings goal equivalent to 1.5 percent of gross annual retail energy sales unless modified by the commissioner under paragraph (d). The savings goals must be calculated

⁴⁸ See e.g. Ex. 9, p. 10 (Rogelstad Rebuttal).

⁴⁹ Ex. 1, p. 6.3; Ex. 1, Apx. A-1, p. 4 (Application).

⁵⁰ Ex. 1, Apx. A-1, p. 1, 5 (Application).

⁵¹ Ex. 1, Apx. A-1, p. 27 (Application).

⁵² Tr. V. 1A, p. 84-85 (Rogelstad).

⁵³ Minn. Stat. §216B.2401(2007 Minn. Laws, Ch. 136, Art. 2, §§ 4-5).

based on the most recent three-year weather normalized average. Minn. Stat. §216B.2401, subd. 1c.

Under specified conditions, a utility could request the commissioner to adjust its annual energy savings percentage goal, and the minimum level of annual energy savings that would be approved was set at one percent from energy conservation. Minn. Stat. §216B.2401, subd. 1c (d).

This 2007 conservation statute applies to the CapX2020 utilities' Minnesota retail load. Applicants have not disputed the application of the 2007 energy conservation statute to the projection of load growth through 2020, nor have they asked to be excused from the 1.5% energy savings goal in this Certificate of Need proceeding. In the recent Big Stone II proceeding, ALJS Steve M. Mihalchick and Barbara Neilson advised that Applicants should not be excused from the 1.5% energy savings goal in a Certificate of Need proceeding pertaining to transmission, stating:

It would be contrary to the statute to plan to not meet the goal established by the Legislature, particularly where, as here, new facilities are being built, and particularly where this is one of the very first cases to arise under the new goal. If any of the Applicants need relief from the goal in future years, that can be provided by the Commissioner of Commerce under the new statute. At the beginning of a trip, you plan to stay on the main road and to use "off ramps" only when necessary.⁵⁴

The OES conducted its own analysis to determine likely growth in demand within the CapX2020 region. Although they did not put this result in their testimony, it is possible to use the approved integrated resource plan ("IRP") forecasts from the OES analysis in Exhibit 265 and the incremental demand savings from 1.5% energy conservation in Exhibit 217 to calculate demand growth based on approved IRP forecasts and 1.5% conservation.⁵⁵ Performing these calculations, demand growth from 2009 to 2020 is 3,475MW.

In their responses to discovery by the North American Water Office/Institute for Local Self-Reliance ("NAWO/ILSR") on March 7, 2008, Applicants' expert witness

⁵⁴ Ex. 20, p. 7, ¶ 17 (Supplemental Findings, Conclusions and Recommendations in Big Stone II Proceeding, CN-05-619).

⁵⁵ Tr. V. 24, pp. 42, 50, 54-55 (Ham); Ex. 217 (OES Chart/Energy Savings); Ex. 265 (Demand Forecasts from Approved IRPs).

Matthew Lacey provided updated projections of growth in demand.⁵⁶ This response to discovery, Exhibit 51, represents Applicants' most recent effort to create reasonable forecasts offered in this record.⁵⁷ The Updated Median Resource Plan Forecast in Exhibit 51 supplied by Applicants reflects a growth in demand of 3,919MW from 2009 to 2020.⁵⁸ Applicants have acknowledged that their Exhibit 51 did not entirely take into account the 2007 1.5% energy conservation policy and also noted that the growth rate suggested for Xcel Energy had not been approved by the Commission.⁵⁹

CETF used the best information available on this record to determine what the demand growth from 2009 to 2020 would be using the Applicants' Exhibit 51 data. For the most part, the annual growth rates in Applicants' Updated Median Resource Plan Forecasts in Exhibit 51 are comparable to the approved IRP growth rates in the OES Exhibit 265. However, CETF adjusted the growth rate for GRE upward to the 2.9% level reflected in the Updated High Integrated Resource Plan Forecast to be more consistent with the rates OES testified had been approved by the Commission. This provided a "base case" of 4,193MW before taking the 1.5% conservation completely into account.⁶⁰

CETF then adjusted the revised Exhibit 51 base case to account for incremental adjusted demand savings set forth in Exhibit 217. For Xcel Energy, the full demand savings for conservation in Exhibit 217 was not deducted, since Xcel's revised forecast already included 1.1% energy savings.⁶¹ Deducting the best estimates of incremental demand savings from the Exhibit 51 base case.⁶² CETF calculated that full compliance with the 1.5% energy conservation statute would result in a projected load growth of 3,163MW.

⁵⁶ Ex. 51 (Response to IR No. 7 of NAWO/ILSR).

⁵⁷ Tr. V. 4, p. 17 (Lacey); Ex. 53, p. 10 (Lacey Rebuttal).

⁵⁸ Ex. 51 (Response to IR No. 7 of NAWO/ILSR).

⁵⁹ Tr. V. 4, p. 49 (Lacey).

⁶⁰ Ex. 51 (Response to IR NO. 7 of NAWO/ILSR IR); Ex. 265 (Demand Forecasts from Approved IRPs). To obtain the "base case," the 1046MW growth rate for GRE in Figure 6-5 of Ex. 51 was substituted for the 773MW growth rate in Figure 6-4.

⁶¹ Tr. V. 23, pp. 154-155 (Ham). Xcel's prior IRP approved growth rate was 1.69%, Tr. V. 23, p. 154-155 (Ham).

⁶² Ex. 217 (OES Chart/Energy Savings), Column 8 was used for utilities for which data was available. For Xcel Energy, it was estimated that the difference between the energy savings modeled in Ex. 51 and the 1.5% savings goal would be about 200MW.

Forecasted Growth in Demand 2009-2020

Source	Demand Growth from 2009-2020
2020 CapX Vision Plan - Growth Projection	6,300 MW
2020 CapX Vision Plan -Sensitivity Analysis	4,500 MW
Ex.51 Applicants Median Forecast	3,919 MW
OES Forecast - Ex. 265 and Ex. 217 (Approved IRP and 1.5% Conservation)	3,475 MW
Adjusted Ex. 51 Applicant Forecast (With 1.5% Conservation)	3,163 MW

Reasonable forecasts based on current IRP growth rates and compliance with the 2007 1.5% conservation statute are all substantially lower than the 6,300 MW of growth projected in the Vision Plan and the 4,500 MW number used as a sensitivity analysis in the Vision Plan.

Applicants have done no study comparable to the 2005 Vision Plan study to determine what transmission facilities would be needed under an assumption of 4000MW or 3500MW of systemic load growth for the CapX2020 utilities between 2009 and 2020.⁶³ In fact, Applicants have done no analysis to determine whether the CapX2020 power lines would be needed under any systemic load growth assumptions from 2009 to 2020 lower than the 4500MW projected in the Vision Study.⁶⁴

2. Applicants’ modeling of the type of energy that would be transmitted by the CapX 2020 Projects is unreasonable.

In the course of discovery, Applicants disclosed the underlying assumptions regarding the nature and location of generation in the CapX2020 Vision Plan study

⁶³ Ex. 26 (Response to IR 5 of CETF).

⁶⁴ Tr. V. 2B, pp. 15-16, 17-18 (Rogelstad); Ex. 26 (Response to IR No. 5 of CETF).

modeling.⁶⁵ At the time when the CapX2020 Vision Plan studies were done, Minnesota had a Renewable Energy Objective of 10 percent. A distinguishing factor of the CapX2020 Vision Plan model was that it was designed to comply with the REO.⁶⁶ Each of the three generation scenarios modeled in the Vision Plan included 2275MW of renewable energy to meet the REO standards.⁶⁷

In 2007, Minnesota statutes establishing the REO were amended to set new Renewable Energy Standards (“RES”) for electric utilities to generate or procure renewable energy for their retail customers.⁶⁸ The 2007 Minnesota Renewable Energy Standards require Xcel Energy to supply 30 percent of its retail energy in Minnesota from renewable energy source by 2020 with interim milestones of achieving 15 percent by 2010; 18 percent by 2012; and 25 percent by 2016.⁶⁹ The 2007 RES requires other electric utilities to supply 25 percent of percent of retail energy in Minnesota from renewable energy sources by 2025 with interim milestones to achieve 12 percent by 2012; 17 percent by 2016 and 20 percent by 2020.⁷⁰

Applicants’ modeling of the type of energy that in the Vision Plan model is unreasonable given the 2007 RES law in that the level of renewable energy modeled is insufficient to comply with the RES. Applying the 1.5% energy savings goal to the Applicants’ energy forecasts the OES estimated that 3,160 MW of wind nameplate capacity would be needed by 2020 to comply with the RES using a 40% capacity factor for wind;⁷¹ if a 30% capacity factor were used, 4,580MW of wind nameplate capacity would be needed.⁷² If the 1.0% minimum conservation were applied, OES estimated that from 3,421MW to 4,927MW of wind would be needed.⁷³ At the lower end of these estimates, the OES analysis requires 140 percent of the renewable generation in the Vision Study model; at the high end, it is over 215 percent.

⁶⁵ Ex. 21 (Response to IR 12 of NAWO/ILSR).

⁶⁶ Tr. V. 1B, p. 82 (Rogelstad).

⁶⁷ Ex. 21 (Response to IR 12 of NAWO/ILSR); Tr. V. 2A, pp. 112-113 (Rogelstad).

⁶⁸ 2007 Minn. Laws, Ch. 3, § 1; 2007 Minn. Laws, Ch. 146, Art. 4, § 10.

⁶⁹ Minn. Stat. §216B.1691, subd. 2a (b).

⁷⁰ Minn. Stat. §216B.1691, subd.2a (a).

⁷¹ Ex. 253 (RES Capacity Need 1.5%/40%). All of these estimates are in addition to renewable energy projects that utilities have committed to deploy by 2009. Tr. V. 22, pp. 67-68 (Peirce).

⁷² Ex. 256 (RES Capacity Need 1.5%/30%).

⁷³ Ex. 254 (RES Capacity Need 1.0%/40%); Ex. 255 (RES Capacity Need 1.0%/30%).

The energy mix used as the basis for modeling in the CapX2020 Vision Study is also unreasonable because it is inconsistent with Minnesota’s 2007 Greenhouse Gas Emissions Control law. Minnesota’s Greenhouse Gas (“GGH”) Emissions Control law prohibits construction within Minnesota, import from outside the state or purchase of energy from a new large energy facility that would increase statewide power sector carbon dioxide emissions. “Statewide power sector carbon dioxide emissions” are defined to include “the total annual emissions of carbon dioxide from the generation of electricity within the state and all emissions of carbon dioxide from the generation of electricity imported from outside the state and consumed in Minnesota.” (Minn. Stat. §216H.03, subd. 2).

This Greenhouse Gas Emissions Control statute is targeted at controlling new coal plants: both natural gas facilities (Minn. Stat. §216H.03, subd. 1), and biomass combustion are excluded from its prohibition. (Minn. Stat. §216H.03, subd. 2). The GGH statute effectively creates a moratorium on new coal plants affecting statewide power sector carbon emissions:

Unless preempted by federal law, until a comprehensive and enforceable state law or rule pertaining to greenhouse gases that directly limits and substantially reduces, over time, statewide power sector carbon dioxide emissions is enacted and in effect, and except as allowed in subdivisions 4 to 7, on and after August 1, 2009, no person shall:

- (1) construct within the state a new large energy facility that would contribute to statewide power sector carbon dioxide emissions;
- (2) import or commit to import from outside the state power from a new large energy facility that would contribute to statewide power sector carbon dioxide emissions; or
- (3) enter into a new long-term power purchase agreement that would increase statewide power sector carbon dioxide emissions. For purposes of this section, a long-term power purchase agreement means an agreement to purchase 50 megawatts of capacity or more for a term exceeding five years. (Minn. Stat. §216H.03, subd. 3).

In the Vision Study the North/West bias case included 700MW of base load coal from Forbes, Minnesota, and 1100MW of base load coal from the Dakotas, including 500MW from Belfield, North Dakota as well 600MW from Big Stone, South Dakota.

The Minnesota bias case included 1000MW of base load coal from Forbes and 600MW from Big Stone. The Eastern bias case included 2850 MW of base load coal -- 500MW from Forbes, 600MW from Big Stone, 750MW from Lansing, Iowa and 500MW each from Genoa and Weston, Wisconsin.⁷⁴ The Vision Plan clearly intended that new generation modeled in its studies would serve Minnesota load.⁷⁵

The 2007 Minnesota Greenhouse Gas Emissions Control statute contains an exception (Minn. Stat. §216H.03, subd.7) for new large energy facilities under consideration by the Commission before April 1, 2007, which would permit the Commission to approve or deny on their merits pending proceedings for Big Stone II transmission and ongoing proceedings regarding the Excelsior IGCC coal plant proposed in the Forbes, Minnesota area.⁷⁶

However, the 2007 Minnesota GGH statute contains no exemptions that would permit the CapX2020 utilities to import or purchase of energy from coal plants in Belfield, North Dakota as proposed in the North/West generation scenario or from coal plants in Lansing, Iowa, Genoa, Wisconsin or Weston, Wisconsin as proposed in the East generation scenario of the CapX2020 Vision Plan.⁷⁷ Coal generation from these sources would be inconsistent with Minnesota's Greenhouse Gas Emissions Control statute, and cannot be considered as part of a reasonable forecast. Minn. Stat. § 216B.243, subd.3 (1) and (7).

The gross total number of megawatts of non-renewable energy megawatts modeled in the Vision Study is also unreasonable under current Renewable Energy Standards. The CapX2020 Vision Study modeled a total of 4,050 MW of non-renewable generation in each scenario.⁷⁸ This modeling of non-renewable generation exceeds the

⁷⁴ Ex. 21 (Response to IR 12 of NAWO/ILSR).

⁷⁵ Ex. 1, Apx. A-1, p. 4 (Application).

⁷⁶ Big Stone II Application filed October 3, 2005, *In the Matter of the Application of Otter Tail Power Co. and Others for Certification of Transmission Facilities in W. Minn.*, MPUC Docket ET-9/CN-05-619; Excelsior Petition filed December 27, 2005, *In the Matter of a Petition by Excelsior Energy Inc. for Approval of a Power Purchase Agreement under Minn. Stat. §216B.1694, and Determination of Least Cost Technology and Establishment of a Clean Energy Technology Minimum Under Minn. Stat. §216B.1693*, MPUC Docket E6472/M-05-1993.

⁷⁷ See Minn. Stat. §216H.03, subd. 7.

⁷⁸ Tr. V. 24, p. 28 (Ham); Compare Ex. 275 (Minnesota Non-Renewable Interconnection Need) with Ex. 21 (Response to IR No 12 of NAWO).

OES estimate, based on the RES and 1.5% conservation, which calculates that from 2,233 MW to 3,057 MW of non-renewable generation would be needed by 2020.⁷⁹

CETF believes that OES assumptions that any dispatchable power must be “non-renewable” are likely to *overestimate* the number of non-renewable energy megawatts needed to meet demand growth by 2020.⁸⁰ However, even the number of non-renewable energy megawatts estimated by OES is substantially less than the number of non-renewable energy megawatts modeled in the Vision Study -- 25 percent less at the high end and 45 percent less at the low end.

3. Given changes in demand and type of energy forecasted, there is no need for the CapX2020 Projects based on system-wide growth.

If demand growth is reduced and the type of energy modeled is changed, there will necessarily be changes in the transmission facilities necessary and appropriate to serve that load. Applicants’ witnesses have concurred, “generally, if you have less load, you're probably going to have less need to have transmission.”⁸¹

The 2007 energy conservation statute has already affected utility resource acquisition. The Commission recently approved Xcel Energy’s suspension of proceedings to acquire 375MW of baseload power on the grounds that the 2007 legislative initiatives “have fundamentally altered the nature of the types of capacity resources to be developed in the future.”⁸²

NAWO/ILSR’s engineering and public energy policy expert, Michael Michaud, explained the significance of load growth forecasts in this record below the 4,500MW level that was the lowest level tested in Applicants’ Vision Study:

The reason that it's significant here is that the Applicants did not study a scenario where the load growth was below 4,500 megawatts in their analysis. And the problems that one would encounter in the transmission system tend to grow as the load grows. So the range of problems that need to be fixed would be different and likely less severe at a lower load growth forecast. And so they have not tested

⁷⁹ Ex. 257, p. 17 (Ham Direct).

⁸⁰ See e.g. Tr. V. 23, pp. 68-69 (Ham), Tr. V. 22, p. 103 (Peirce) for discussion of biomass co-firing.

⁸¹ Tr. V. 1B, p. 70, ll. 5-7 (Rogelstad).

⁸² Ex. 165, p. 3 (Order addressing Xcel Resource Plan dated 3/19/08, closing PUC Docket 06-1518).

their proposed projects against the most likely forecast and the most likely set of problems.⁸³

It is equally fundamental to energy planning that the nature of the fuel used for generation influences its location. CETF's expert witness on economics and energy policy, Professor Arne Kildegaard, explained this relationship:

[E]conomical generation possibilities are almost always site-specific. The economics of wind generation depends on a number of characteristics of the wind resource, and these are anything but uniformly distributed. The economics of coal generation depend critically on the location of the mine and/or the railhead relative to the transmission network. The decision of where to build the 'fat pipe' of transmission will economically circumscribe the generation possibilities in clear and direct ways.⁸⁴

OES agreed with Dr. Kildegaard that transmission and generation are linked, "since location of transmission influences generation and location of generation influences transmission. There is a locational interaction between the two."⁸⁵

In particular, as policy changes encourage wind energy and natural gas peaking plants over base load coal, it is likely that the location of generation will change. Natural gas peaking plants are usually located near load centers and also need to be located close to a pipeline.⁸⁶ Natural gas support for Twin Cities load can increase without long distance transmission as recently demonstrated by the Metro Emission Reduction Project (MERP) that increased generation by about 300MW and substantially avoided costs of new transmission.⁸⁷

There is no evidence in this record establishing the likelihood that other energy generation facilities of similar sizes in Belfield, North Dakota; Lansing, Iowa; Genoa, Wisconsin or Weston, Wisconsin would be used to serve Minnesota load if coal generation was precluded through application of the Greenhouse Gas Emissions Control statute.

⁸³ Tr. V. 16, p. 69 l. 25 to p. 70 l.10 (Michaud).

⁸⁴ Tr. V. 18A, p. 51 (Kildegaard).

⁸⁵ Ex. 303, pp. 18-19 (Rakow Rebuttal).

⁸⁶ Tr. V. 15, p. 91 (Alders).

⁸⁷ Tr. V. 15, pp. 92-93 (Alders); *see also* Staff Briefing Papers, pp. 13-14, *In the Matter of a Petition by Xcel Energy for Approval of a Three-Plant Emissions Reduction Proposal and Rate Rider to Recover Costs*, Docket No. E-002/M-02-633 (December 12, 2003); Tr. V. 1B, pp. 18-19 (Rogelstad).

Applicants have quoted testimony from their witness Tim Rogelstad to suggest that the need for the CapX2020 projects would not be “eliminated” if load growth were reduced to 2,000 megawatts.⁸⁸ However, looking at the entire record, Mr. Rogelstad’s testimony did not confirm that the Vision Study would demonstrate a need for the CapX2020 projects under this low growth assumption. At two other points in his testimony, Mr. Rogelstad stated there would be fewer facilities with only 2,000MW load growth and that one would need to conduct studies to determine need for the CapX2020 projects.

Q: Okay. If the system load growth forecast turned out to be, say, only 2,000 megawatts, would the study approach and results likely be different?

A: Well, I think from the perspective of study approach, we would make the assumption that load is 2,000 megawatts, instead of the 65 -- or, 63- or 4,500 megawatts. With respect to the results, I mean, it's hard to say for sure. I mean, I think certainly there would be less facilities.

Q: You would have to study it, wouldn't you, to see?

A: To get a firm answer on that, yes.⁸⁹

Q: Yesterday, Mr. Rogelstad, I believe in response to a question from your counsel brought on by my initial inquiry about the 2,000 megawatts if the load --system load dropped below 2,000 megawatts would we still need this set of proposed power lines. Do you recall that discussion?

A: I do, yes.

Q: And my notes say that yesterday in the redirect you testified that it they would still be needed. My notes also indicate that the day before, when I asked you that, why -- why, it would need to be studied in order to get a firm answer to that question. Do you recall that?

A: I believe that I do, yes.⁹⁰

To reconcile these statements with his testimony on redirect that the need for the CapX2020 projects would not be eliminated, Mr. Rogelstad references the community reliability studies in the Application as providing a basis for need even if load growth were at 2,000 MW.

I guess I'd clarify that by saying I think when I was responding to Mr. Crocker's question, I was looking at it from a very precise standpoint, saying, if you want to determine the exact load level at what point you would need these

⁸⁸ Applicants’ Post-Hearing Brief on the Merits of the Application for Certificates of Need, p. 7.

⁸⁹ Tr. V. 1B, p. 19 l.25 to p. 20 l.10 (Rogelstad).

⁹⁰ Tr. V. 3, p. 30 ll. 9-22 (Rogelstad).

you'd have to do the additional studies. I think in the case of redirect, when Mr. Krikava asked me the question, it was more of based on your engineering judgment, do you think you could -- load levels below 2,000 would require these, and my response was that yes.

And, again, part of the reason why I would say that is, again, if you'd look at the Red River Valley study, its load level is far below the 2,000 megawatts of load increase that we need those facilities. And I think the similar thing in the Rochester-La Crosse area on that project as well. It's not 2,000 megawatts. The con -- the broader level regional support Vision-type study, again, is looking at -- you've got to remember that there are other facilities needed in the year 2020 to serve the projected load. And, you know, we are just proposing at this point in this proceeding that three 345 kV projects have been identified.⁹¹

Whether or not the community reliability studies for the Red River Valley and the Rochester – La Crosse area support the need for the CapX2020 projects is a different issue and a different need, discussed in the next sections of this Brief.

Finally, although the OES analysis indicates that a substantial number of megawatts of new nameplate generation would be needed to meet load growth from 2009 through 2020, the OES analysis does not confirm the need for the specific CapX2020 transmission projects to interconnect to and support this future generation.

- OES did not provide testimony that any specific megawatts of wind identified by OES as needed under the RES statute would be interconnected with the CapX projects.⁹²
- OES did not testify that any specific transmission lines would be used to interconnect Renewable Energy Standards projects.⁹³
- OES acknowledged that new renewable projects interconnected with or without the CapX2020 projects could be used for compliance with the Minnesota RES.⁹⁴

OES intended that the numbers for wind and non-renewable generation that they were producing in their analysis would be comparable to the numbers reflected in Exhibit 21, describing the inputs to Applicants' Vision Study model.⁹⁵ However, OES calculations resulted in different inputs -- a greater number of wind megawatts than the

⁹¹ Tr. V. 3, p. 84 ll. 3- p. 85 l. 1 (Rogelstad).

⁹² Tr. V. 24, p. 19 (Ham); Tr. V. 22, p. 82 (Peirce).

⁹³ Tr. V. 22, p. 106 (Peirce).

⁹⁴ Tr. V. 22, p. 106 (Peirce).

⁹⁵ Tr. V. 24, p. 32 (Ham).

2,275MW proposed by Applicants and a lower number of non-renewable megawatts than the 4,050MW in the Vision Study model.

OES did not testify that if they plugged the numbers from their analysis into an engineering study they would get the same result recommending the CapX2020 projects as was obtained in the Vision Study. As OES forecasting expert Hwikwon Ham explained, “I’m not pretending I’m engineer, and I’m not verifying the individual details of engineering inputs.”⁹⁶ Mr. Ham responded to additional questions:

Q: You said that you're not an engineer. Given that, you're not testifying that if engineers plugged the OES assumptions into the engineering models used in Appendix A-1 they'd get the same result, correct?

A: No, I'm not claiming any of engineering output.”⁹⁷

Neither Applicants’ analysis in the Vision Plan study, the OES analysis of generation needed to comply with 1.5% conservation statute and the RES or any other evidence on this record meet Applicants’ burden of proof to demonstrate a need for the CapX2020 projects based on system-wide growth of demand. The CapX2020 projects may only be approved pursuant to Minn. Stat. § 216B.243, subd. 3 if Applicants can demonstrate that the transmission facilities are needed for local community reliability or generation outlet capacity/ renewable energy support.

B. The CapX Projects Must Be Evaluated on the Basis of Community Reliability and Generation Outlet Capacity/Renewable Energy Support.

1. Reliability is based on need for transmission under n-1 contingencies.

In addition to their claim that the CapX2020 transmission projects were needed due to growth in system-wide demand, Applicants asserted that the projects were needed for community service reliability in specific identified communities by 2020 and to provide generation outlet capacity, particularly renewable energy support to comply with Minnesota’s RES.⁹⁸

In certificate of need proceedings, the Commission must consider the point where denial of a certificate would result in an adverse impact on reliability, Minn. R.

⁹⁶ Tr.V. 24, p. 37 (Ham).

⁹⁷ Tr. V. 24, p. 38, ll. 16-21 (Ham).

⁹⁸ Ex. 1, p. 1.3 (Application); Tr. V. 2A, p. 20 (Rogelstad).

7849.0120, subp. A, and the expected reliability of the proposed facility compared to that of reasonable alternatives. Minn. R. 7849.0120 subp. A(4).

Analysis of community reliability needs for the CapX2020 projects is based on whether they are needed to meet NERC n-1 (Category B) reliability needs during the time period through 2020. Applicants' experts witnesses have repeatedly confirmed that planning of transmission is designed to meet n-1 (Category B) contingencies, loss of a single facility.⁹⁹ Planning engineers also study multiple losses, but for those situations, they can interrupt load.¹⁰⁰ Under NERC standards, it is anticipated that there may be planned or controlled curtailment of load during n-2 Category C events¹⁰¹ and NERC standards do not assume maintenance of load under Category D extreme events.¹⁰²

The critical load level represents the load level at which point the transmission system is determined to exceed its capability.¹⁰³ To the extent that this record refers to transmission to support critical load during Category C or Category D events, this data, however informative, is insufficient to demonstrate need for the facilities.

2. Transmission and generation alternatives are presented on this record.

As discussed previously at pages 7 through 9 of this Brief, Minnesota statutes and rules require the analysis of alternatives to any proposed high voltage transmission facility. Although the Rules might not deny a certificate on the grounds that Applicants had failed to analyze an alternative recently proposed by another party, Minn. R. 7849.0110, there is nothing in applicable statutes or rules suggesting that the ALJ or the Commission should ignore evidence of reasonable alternatives that are already presented in the record.

Reviewing the underlying certificate of need statute, the provisions of MEPA and detailed rules regarding the Applicants' obligation to detail alternatives in its Application, Minn. R. 7849.0260, subp. B and the Department of Commerce obligation to describe alternatives, Minn. R. 7849.7060, subp. B, it is clear that the intention of Minnesota law

⁹⁹ Tr. V. 1A, pp. 73-74 (Rogelstad); Tr. V. 15, p. 12 (Alders); Tr. V. 9, p. 176 (Alholinna).

¹⁰⁰ Tr. V. 1A, pp. 73-74 (Rogelstad); see Ex. 103 (NERC Rules).

¹⁰¹ Ex. 103 (NERC Rules); Tr. V. 9, p. 124 (King).

¹⁰² Ex. 103 (NERC Rules) Tr. V. 9, p. 126 (King).

¹⁰³ Tr. V. 7, p. 136 (Kline).

is to get evidence of alternatives on the record in certificate of need proceedings as early as possible, not to avoid consideration of that evidence.

In this proceeding, much of the Applicants' discussion of generation and transmission alternatives to the proposed CapX2020 Projects is contained in discovery documents, prefiled testimony and the record at the administrative hearing, rather than in the Application itself. This record evidence must be evaluated in assessing Applicants' claims that the CapX2020 projects are needed for community reliability.

In connection with the Rochester Incremental Generation Outlet (RIGO) projects, Applicants have explicitly agreed that it is appropriate for the Commission to take into account the effect other planned transmission projects may have on reliability in reviewing the timing of the CapX2020 Projects.¹⁰⁴ Consideration of the Adams-Rochester reconductoring project among alternatives to the need for the La Crosse Project is explicitly recognized in statute, since this project involves upgrading of existing transmission. Minn. Stat. § 216B.243, subd. 3(6). As discussed in more detail in subsequent pages, other lower voltage transmission lines suggested as alternatives to the need for the La Crosse Project have either already been upgraded or are proposed in Applicants' A-2 submitted as part of the Application.

Consideration of the Bemidji-Grand Rapids 230 kV transmission line among alternatives to the Fargo Project is based both on references to this transmission line in the TIPS A-3 study submitted as part of this Application and on analysis provided by Applicants in response to discovery. The Bemidji-Grand Rapids 230 kV project is a 68-mile transmission line estimated by Applicants to cost \$60.5 million. It is currently moving forward in an uncontested certificate of need proceeding.¹⁰⁵ There is no reason to exclude its consideration on this record.

CETF's consideration of local generation alternatives was limited by this record to specific generation projects already identified by Applicants in response to OES

¹⁰⁴ Tr. V. 8, pp. 108-109 (Stevenson). Applicants have asked for flexibility in setting the in-service date for the Northern Hills- North Rochester 161 kV line in the event RIGO is approved. Ex. 83, p. 10 (Stevenson Direct).

¹⁰⁵ *In the Matter of the Application of Otter Tail Power Co., Minn. Power and Minnkota Power Coop., Inc. for a 230 kV Transmission Line From Bemidji to Grand Rapids, Minn.*, ("Bemidji-Grand Rapids Proceeding"), MPUC Docket No. ET-6/CN-07-1222. Project cost is in Application, Part. 1, p. 16, filed March 17, 2008. Process is reflected in Order Accepting Application as Complete, as Conditioned, and Authorizing Informal Review Process, issued July 22, 2008.

discovery or in response to cross-examination. After reviewing NERC information on reliability, CETF did not find credible Applicants' hypothesis that three generation plants would be needed to replace a gap in critical load. This modeling would, in effect, assume loss of two generation facilities, a Category C or Category D event.¹⁰⁶ Analysis of alternatives to the La Crosse and Fargo Projects were done without considering the potential for new generation beyond that already planned by Applicants.

3. Applicants did not provide required conservation information. OES analysis provides a minimum level of conservation to evaluate need.

Under Minnesota's certificate of need statute, no large energy facility can be certified unless an applicant demonstrates that demand for the project cannot be met more cost-effectively through conservation and load management, including cost-effective energy conservation improvements that can replace all or part of the energy provided by the proposed facility. Minn. Stat. § 216B.243, subd. 3, subd. 3(8). As discussed previously, compliance with the 2007 1.5% conservation statute must also be considered in certificate of need proceedings for a transmission facility.

As explained by OES witness, Christopher Shaw, certificate of need requires applicants to meet a statutory burden and compare the costs of conservation and energy demand management with the cost of proposed facilities to determine whether a facility is, in fact, needed. The first component is: can energy conservation be used to replace it? The second component is: is that energy conservation cost-effective? Applicants' obligation is to look at whether energy conservation can replace all or any part of the need.¹⁰⁷

The record provides no evidence that Applicants met this obligation. Xcel Energy witness, Amanda King, explained that once a reliability problem was determined Applicants did not go back to the forecaster and assess whether additional conservation could reduce load: "Our assumption is that they have accounted for anything they can already. It's -- any conservation or load management or anything they could do is already

¹⁰⁶ Tr. Vol. 16 at 140-141; Tr. Vol. 17A at 38-41 (Michaud).

¹⁰⁷ Tr. V. 21, p. 84 (Davis).

done when we receive our initial forecasts.”¹⁰⁸ CETF concurs with NAWO/ILSR witness Mr. Michaud that “Applicants should have examined how targeted conservation and load management programs could have partially or completely resolved each of the 2020 year local reliability issues they have identified.”¹⁰⁹

Applicants also did not factor compliance with the 1.5% conservation statute into their analysis of community needs. Forecasts of local need in the Application did not take into account demand savings from compliance with the 2007 conservation statute and Applicants did not attempt to determine what the load growth would be if the 1.5% conservation were taken into account.¹¹⁰

As CETF reads applicable certificate of need statutes and rules, it would be within the Commission’s discretion to determine that Applicant failed to demonstrate a community reliability need for the CapX2020 Projects as a result of the absence of a demonstration that local needs for the CapX2020 Projects could not be met more effectively with cost-effective conservation.

CETF appreciates that OES attempted to fill the gap in this record by adjusting forecasted local need data in Rochester, La Crosse, South Red River Valley, Alexandria and St. Cloud to consider incremental demand savings that might result from the 2007 energy conservation statute.¹¹¹ CETF has used this OES data for its conclusions that conservation, in whole or in part, can meet local reliability needs in each of these communities other than St. Cloud.

However, CETF believes that even the OES analysis substantially understates the degree to which targeted conservation and load management could reduce the community reliability need for the CapX2020 Projects. All of the community reliability needs asserted by Applicants in this proceeding are to meet demand at the particular times of summer or winter peak energy usage,¹¹² so lowering peak demand is particularly critical to the community reliability needs in this proceeding. Lowering peak load can affect the

¹⁰⁸ Tr. V. 9, p. 142 ll.16-20 (King).

¹⁰⁹ Ex. 140, p. 9, ll.17-20 (Michaud Direct).

¹¹⁰ Tr. V. 12, pp. 73-74 (Grivna).

¹¹¹ Ex. 215, p. 14 (Davis Direct).

¹¹² Ex. 1, Apx. C-1 through C-5 (Application).

year at which the transmission system would reach critical load and affect the year at which a project is needed.¹¹³

The 2007 energy conservation statute focuses on energy savings and is an average for the entire service territory of a utility, not designed to focus on any specific geographic area.¹¹⁴ A utility could be in compliance with the 2007 conservation law and still not be implementing all cost-effective conservation and load management to reduce peak demand in a particular community.¹¹⁵

The way in which the OES converted energy savings into demand savings assumed that 5,300 megawatt hours of incremental energy savings would result in one megawatt of peak demand savings.¹¹⁶ OES witness Christopher Davis explained that this estimate was based on incremental extensions of typical past programs focused on general energy savings, such as commercial lighting programs and that programs more targeted to saving energy in peak hours, such as programs to save kilowatt hours from air conditioning, would have a larger impact on peak demand savings.¹¹⁷ Mr. Davis confirmed that if one were trying to identify a way in which to reduce summer peak demand, one would use summer peak savings programs, such as the saver switch program, which have a higher coincidence factor than general energy savings programs. Similarly, to reduce winter peak, one would use a strategy like the dual fuel heating system, to have closer to a one-to-one effect in reducing winter peak demand.¹¹⁸

CETF believes that the OES 1.5% conservation data underestimates the ability of demand side management to reduce peak demand and replace all or part of the community need for the CapX2020 Projects. We are also concerned that there are no estimates on this record of the effect that emerging Smart Grid technologies would have on calculation of local demand in the 2009 through 2020 horizon. Xcel Energy believes there is compelling evidence that Smart Grid technology would reduce residential peak demand by 30 percent and energy consumption by 10 percent.¹¹⁹

¹¹³ Tr. V. 9, pp. 102-103 (King).

¹¹⁴ Tr. V. 21, pp. 88-89 (Davis).

¹¹⁵ Tr. V. 21, p. 89 (Davis).

¹¹⁶ Ex. 215, pp. 9-10 (Davis Direct).

¹¹⁷ Tr. V. 21, pp. 72-73 (Davis).

¹¹⁸ Tr. V. 21, pp. 91-92 (Davis).

¹¹⁹ Ex. 134, p. 11, doc. p. 0000238 of *Xcel Energy Smart Grid A White Paper* (Response to IR 15 2nd Supp. Attachment of NAWO/ILSR).

For purposes of this proceeding, CETF has determined to incorporate only the minimum conservation levels provided in the OES 1.5% conservation analysis. CETF would recommend that a separate docket be opened to provide guidance on the degree to which targeted load management, including Smart Grid technology, could provide quantifiable additional demand savings and community reliability.

C. The LaCrosse Project Is Not Needed and Would Result in Environmental Harm Prevented by Feasible and Prudent Alternatives.

1. The La Crosse Project is not needed for community reliability in Rochester or La Crosse.

The CapX2020 345 kV La Crosse Project is not needed to provide community reliability in the Rochester area through the year 2020 given current and planned lower voltage transmission and local generation.

The Rochester Incremental Generation Outlet (RIGO) projects are currently being planned to provide generation outlet capacity in southeastern Minnesota.¹²⁰ Xcel plans to seek expedited consideration of the RIGO application.¹²¹ Notice plans and requests for exemption from certificate of need filing requirements have been filed for the RIGO projects¹²² and utility plans for compliance with the 2012 RES milestone depend on the RIGO 161 kV lines.¹²³ Xcel's commitment to proceed with the certificate of need for the RIGO projects does not depend on the outcome of this CapX2020 proceeding.¹²⁴

The RIGO projects include three new 161 kV transmission lines: 1) a Pleasant Valley –Byron 161 kV line, 2) a Pleasant Valley – Willow Creek 161 kV line and 3) 161 kV line from the Byron substation to a new West Side Energy Park substation on the western city limits of Rochester a Byron-Westside Energy Park 161 kV line.¹²⁵ The

¹²⁰ Tr. V. 8, p. 164 (King); *In the Matter of the Application of Northern States Power Company d/b/a Xcel Energy for a Certificate of Need for Two 161 kV Transmission Lines in the Greater Rochester Area*, ("RIGO Proceeding"), MPUC Docket No. E002/CN-08-992.

¹²¹ Tr. V. 8, p. 107 (Stevenson)

¹²² RIGO Proceeding, MPUC Docket No. E002/CN-08-992.

¹²³ Supplemental Compliance Filing of the Minnesota Transmission Owners, p. 6, *In the Matter of the 2007 Minnesota Biennial Transmission Project Report and Renewable Standards Report*, MPUC Docket No. E999/M-07-1028 (Document #5497544, filed 9/11/08; Compare with Applicants' Proposed Finding #144.

¹²⁴ Tr. V. 8, p. 108 (Stevenson).

¹²⁵ Ex. 94, p. 21 (King Direct).

RIGO projects are expected to provide 700 to 900 MW of generation outlet capacity for wind in southeastern Minnesota¹²⁶ and will also provide load-serving benefits to Rochester.¹²⁷

The Rochester-Adams 161 kV reconductoring project is a separate Dairyland Power project independent of CapX2020 and RIGO.¹²⁸ This project has been accelerated and is now scheduled for completion for the summer of 2009 to serve wind generation being added in the Adams, Minnesota area.¹²⁹

If levels of local generation (approximately 181 MW) in Rochester remain stable, along with construction of the RIGO projects and Adams reconductoring, Applicants have determined that there will be sufficient transmission capacity in Rochester without the CapX2020 Projects to provide community reliability until 2026 or 2028.¹³⁰

The best evidence in this record suggests that levels of local generation in Rochester are increasing. Within the 2009 to 2020 timeframe, Rochester Public Utilities plans to retire aging coal plants and build 100MW of new gas generation at the West Side Energy Park, resulting in a net gain of 23 MW of dispatchable generation. RPU also plans to add another 50MW of gas generation at West Side by 2025.¹³¹ In connection with the West Side gas project, RPU has proposed two new 161 kV lines from West Side Energy Park to the Northern Hills and IBM Substations in the Rochester area. Each of these lines would provide some additional level of load support and affect the timing of any community need.¹³²

It cannot be determined on this record how far beyond 2028 the additional gas at West Side or the new local transmission related to the West Side projects would extend Rochester reliability without the CapX2020 La Crosse Project.

Although CETF believes that Applicants' forecasts for the Rochester area are unreasonably high, it is not necessary to revise them to achieve reliability through 2020. However, adjusting Rochester forecasts consistent with the 1.5% conservation law would

¹²⁶ Ex. 94, p. 21 (King Direct); Tr. V. 8, pp. 37-39 (Stevenson); see Ex. 5, Map 3 (Environmental Report).

¹²⁷ Tr. V. 8, pp. 106-107 (Stevenson); Ex. 83, pp. 9-10 (Stevenson Direct).

¹²⁸ Tr. V. 9, p. 58 (King).

¹²⁹ Supplemental Compliance Filing of the Minnesota Transmission Owners, pp. 3-7, MPUC Docket No. E999/M-07-1028, #5497544 (September 11, 2008), p. 5. Compare with Applicants Proposed Finding #128.

¹³⁰ Tr. V. 9, p. 111 (King).

¹³¹ Ex. 222, p. "11 out of 23" (Response to IR No. 29 of OES), Tr. V. 22, pp. 19-22 (Shaw).

¹³² Tr. V. 17A, pp. 17-18 (Michaud).

reduce forecasted local need in the Rochester area to 461MW by 2020.¹³³ With this level of conservation, the RIGO and the Rochester-Adams reconductor project, the Rochester area transmission system could reliably support load through at least 2020 without relying on any local generation.¹³⁴

The record is clear that if existing local generation at Xcel Energy's French Island Units 3 and 4 is running as system support, the CapX2020 projects are not needed for reliability in the La Crosse area. At summer peak load levels of 470MW, French Island Units 3 and 4 could run to preserve reliability at an n-1 level. If French Island Units 3 and 4 were running as system support as peak loads approached this level, the capacity of the transmission system in the La Crosse area would be 610 MW, which exceeds the level of summer peak demand (602 MW) projected by Applicants through 2020.¹³⁵

Xcel Energy has reported no plans to retire French Island Units 3 and 4, which provide 140MW of local dispatchable generation.¹³⁶ All of the contingencies identified by Applicants to justify the La Crosse 345 kV line on the basis of reliability in La Crosse assume outage of more than one element of generation and transmission and are Category C events under the NERC rules.¹³⁷

Lower voltage transmission lines in the La Crosse area also provide an alternative to the 345 kV LaCrosse Project. Several lower voltage upgrades have been recently completed that were not included in the modeling used for the Application. When these upgrades, identified in Applicants' Response to IR 19 of NAWO/ILSR ("IR 16 Upgrades")¹³⁸ are combined with the 161kV system upgrades in the Rochester/LaCrosse study in the Application, the combined lower voltage improvements provide reliable transmission to the La Crosse area through at least 2020 without construction of the CapX2020 345 kV line.

¹³³ Ex. 219, p. 1 (Davis Chart/Impact of CIP Statute).

¹³⁴ Tr. V. 8, pp. 164-165 (King); Ex. 94, p. 21 (King Direct). The transmission system alone provides 468MW of load support.

¹³⁵ Ex. 94, p. 11 (King Direct); Ex. 1, p. 4.10, Apx. C-2 (Application).

¹³⁶ Tr. V. 22, p. 24 (Shaw); Ex. 222, p. "15 out of 23" (Response to IR No. 29 of OES).

¹³⁷ Tr. V. 9, pp. 123-124 (King); Ex. 1, p. 4.14-4.15, Apx C-2 (Application); Ex. 103 (NERC Rules).

¹³⁸ Ex. 11, p. 2 (Supp. Response to IR 16 of NAWO/ILSR). These upgrades include Arrowhead-Gardner Park 345 kV line, Monroe County 60 MVAR 161 kV Capacitor La Crosse (2) MVAR 161 kV Capacitors, Hillsboro 30.24 VAR 161 kV Capacitor, Monroe County Council Creek 161 kV line, Genoa-Coulee 161 kV Upgrade; Ex. 140, pp. 21-22 (Michaud Direct).

NAWO/ILSR witness Mr. Michaud explained that Applicants' study of an n-2 situation with an outage of the La Crosse 345 kV radial segment is equivalent to an n-1 study of same configuration of lower voltage lines without building the 345kV line.¹³⁹ Applicants' n-2 NERC analysis showed that in the event of a combined outage of the 345 kV radial segment and the Genoa 3 generator, the electrical system in the La Crosse area would support 700MW, while with a combined outage of the 345 kV radial segment and the John P. Madgett coal plant would support 800MW.¹⁴⁰ The electrical system capability under both of these contingencies far exceeds the 602MW load projected by Applicants in the La Crosse area for 2020.¹⁴¹

The additional 161 kV system voltage upgrades in this analysis that have not already been completed as part of the IR 16 Upgrades were estimated in the Application's Rochester/LaCrosse Appendix A-2 study to cost approximately \$31 million.¹⁴² Neither the IR 16 Upgrades that have already been completed in the La Crosse area nor the remaining 161 kV upgrades in the A-2 study require an additional transmission line crossing of the Mississippi River.¹⁴³

Although it is not necessary to address La Crosse area forecasts to establish community reliability through 2020, Applicants' forecast for the La Crosse area is unreasonably high. Application of the 1.5% conservation statute to the substation forecasts used by Applicants would reduce local need in the La Crosse area by approximately 63MW in 2020, resulting in an adjusted local need of 539MW by 2020.¹⁴⁴ Conservation, thus, reduces load yet further below the levels that would be reliably sustained either under the French Island generation alternative (610MW) or the low voltage transmission alternative (700MW) to the CapX2020 345 kV La Crosse Project.

¹³⁹ Ex. 140, pp. 22-23 (Michaud Direct); Tr. V. 16, pp. 126-127 (Michaud). The n-2 contingency analysis for a radial 345kV line is equivalent to an n-1 analysis excluding the 345 kV segment.

¹⁴⁰ Ex. 11, p. 4 (Supp. Response to IR 11 of NAWO/ILSR).

¹⁴¹ Ex. 1, p. 4.15 (Application).

¹⁴² Ex. 1, Apx. A-2, p. 144 (Application). Remaining lower voltage improvements include the Bell Center Capacitor and all but the first two 161 kV line segment rebuilds projects.

¹⁴³ Tr. V. 16, p. 127 (Michaud).

¹⁴⁴ Ex. 219, p. 2 (Davis Chart/Impact of CIP Statute).

2. The La Crosse Project is not needed for generation outlet capacity/renewable energy support.

OES witness Dr. Steve Rakow stated with respect to the La Crosse project, “The Applicants did not make a firm claim that they were going to get generation outlet due to the project.”¹⁴⁵ No number for generation outlet capacity resulting from the CapX2020 La Crosse Project has been defined either in the Application or in testimony.¹⁴⁶

Although Joint Intervenors¹⁴⁷ witness Larry Schedin suggested that studies should be done for the La Crosse Project to demonstrate the outlet benefit to substantial generation development in southern and southeastern Minnesota,¹⁴⁸ Mr. Schedin admitted that he knew of no studies demonstrating generation outlet capacity for the La Crosse Project.¹⁴⁹

Although the Brookings Project is described as “crucial” in the Renewable Energy Standards Report filed with the 2007 Minnesota Biennial Transmission Projects Report (“RES Report”) and a statement is made that the Fargo Project “will mean a likely increase in the amount of generation that can be transferred” from North Dakota to the Twin Cities, the La Crosse Project is conspicuously absent among the many projects identified as part of the transmission owners’ plan to achieve RES milestones.¹⁵⁰ The La Crosse Project is also unnecessary for the Brookings Project; the Brookings EHV study does not assume the Twin Cities- La Crosse Project as part of the system studied.¹⁵¹

On this record, with no evidence at all of generation outlet capacity from the La Crosse line and no evidence of the relation of the La Crosse line to renewable generation support to meet RES goals, there is no basis to find a need for the La Crosse Project to provide either generation outlet capacity or renewable energy support.

¹⁴⁵ Tr. V. 25, p. 68 ll.16-19 (Rakow).

¹⁴⁶ Ex. 1, p. 4.47-4.48 (Application); Tr. V. 21, p. 39 (Ellison).

¹⁴⁷ Minnesota Center for Environmental Advocacy represented Wind on the Wires, Izaak Walton League of America – Midwest Office, Fresh Energy and their own interests in this matter under the designation “Joint Intervenors.”

¹⁴⁸ Ex. 177, p. 7 (Schedin Direct).

¹⁴⁹ Tr. V. 19, p. 161 (Schedin).

¹⁵⁰ Ex. 54, pp. 297-298 (Renewable Energy Standards Report 2007); Ex. 282, p. 13 (Rakow Direct). See also Supplemental Compliance Filing of the Minnesota Transmission Owners, p. 3-7, MPUC Docket No. E999/M-07-1028, #5497544 (September 11, 2008.)

¹⁵¹ Ex. 1, Apx. A-4, p. 40-41 (Application); Tr. V. 11, p. 48-49 (Alholinna).

3. The La Crosse Project would result in environmental impairment, including impacts to a national wildlife refuge, which feasible and prudent alternatives would avoid.

Applicants are considering routes for the La Crosse Project crossing the Mississippi River either at Alma, Winona or at La Crescent/La Crosse.¹⁵² All of the proposed routes for the La Crosse Project would require crossing the Mississippi River within the USFWS Upper Mississippi National Wildlife Refuge, a statutorily prohibited area.¹⁵³ Minnesota Rules clearly state:

No high voltage transmission line may be routed through state or national parks or state scientific and natural areas unless the transmission line would not materially damage or impair the purpose for which the area was designated and no feasible and prudent alternative exists. Economic considerations alone do not justify use of these areas for a high voltage transmission line.¹⁵⁴

It is clear that there are feasible and prudent alternatives to the La Crosse Project crossing of the Mississippi River. The record also demonstrates that routing of the La Cross Project through the Upper Mississippi River National Wildlife Refuge would materially impair the purposes for which the areas was designated.

The Upper Mississippi River National Wildlife Refuge provides recreation and habitat protection for fish, mammals, reptiles and amphibians and a large percentage of migratory birds that use the Mississippi Flyway.¹⁵⁵ The Mississippi Flyway is one of the major areas in the United States used by birds for migration, including migration to other countries.¹⁵⁶ The most significant impact or high voltage power lines across a migratory bird flyway are the impacts of birds flying into the lines. On the face of the statute, migratory bird deaths from flying into power lines violate the terms of the Migratory Bird Treaty Act.¹⁵⁷

¹⁵² Tr. V. 13, p. 67 (Rasmussen).

¹⁵³ Tr. V. 18A, pp. 44-45 (Birkholz); Tr. V. 13, pp. 79-80, (Rasmussen).

¹⁵⁴ Minn. R. 7849.5930, subp. 2.

¹⁵⁵ Ex. 128, p. 8 (Rasmussen Direct)

¹⁵⁶ Tr. V. 13, pp. 80-81 (Rasmussen)

¹⁵⁷ Tr. V. 13, pp. 82-84 (Rasmussen); 16 U.S.C. §703(a), “Unless and except as permitted by regulations made as hereinafter provided in this subchapter, it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill . . . any migratory bird.”

An examination of the environmental settings for the proposed La Crosse Project routes demonstrates that construction and operation of the high voltage transmission lines would also impair areas of biodiversity significance, habitat and nesting of rare and endangered species. The environmental setting for a proposed Alma crossing of the La Crosse Project includes a wide stretch that has a moderate biological diversity significance and some areas have a high biodiversity significance.¹⁵⁸ The proposed Alma crossing for the La Crosse Project also includes the Kellogg Weaver Dunes State Scientific and Natural Area, the McCarthy Lake Wildlife Management Area and a number of threatened and endangered species, including a “critically imperiled” section of swamp white oak terrace forest and several state threatened and endangered plants.¹⁵⁹ The Alma Crossing area has four other State threatened animal species populations considered species of special concern: the wood turtle, Blanding’s turtle, the ottoe skipper butterfly and the paddlefish.¹⁶⁰

Locating a new 345 kV power line near existing transmission does not eliminate this impact. The area near the existing Alma 161 kV transmission line that is being considered for the La Crosse Project route contains “areas of high and outstanding diversity significance,” including calcareous and other large fens, as well as shrub-dominated wetlands. This type of fen is “critically imperiled” in Minnesota.¹⁶¹ There is an active bald eagle nest in or adjacent to the existing Alma power line on the Minnesota side of the USFWS Upper Mississippi National Wildlife Refuge.¹⁶² One record places a peregrine falcon near the proposed Alma crossing and falcons are beginning to nest in cliffs along the Mississippi. The peregrine falcon is the rarest bird of prey in Minnesota and is considered an endangered species.¹⁶³

The environmental setting for a proposed Winona crossing for the La Crosse Project is also within the USFWS Upper Mississippi River National Wildlife Refuge. The crossing has several state threatened and endangered plant species and an assortment of state threatened and endangered species, including the northern cricket frog, the rock

¹⁵⁸ Tr. V.13, p. 67, 69-71 (Rasmussen); Ex. 1, Apx. E-1, Map 5 (Application).

¹⁵⁹ Ex. 1, Apx. E-1, p. 13, Apx. E-1, Map 5 (Application); Tr. V. 13, p. 72 (Rasmussen).

¹⁶⁰ Ex. 1, Apx. E-1, p. 14 (Application).

¹⁶¹ Ex. 1, Apx. E-1, p. 13 (Application).

¹⁶² Ex. 131 (2/19/08 Letter from USFWS).

¹⁶³ Ex. 1, Apx. E-1, p. 15 (Application).

pocketbook mussel, the wartyback mussel, the smooth soft shell turtle, Blanding's turtle, the timber rattlesnake and the paddlefish.¹⁶⁴ Bald eagle and osprey nesting areas exist around the crossing and peregrine falcons have been identified in the southeastern portion of the crossing area.¹⁶⁵

The United States Fish and Wildlife Service believes that a proposed Winona crossing would likely require new right-of-way across portions of the national wildlife refuge and would not be permitted by the USFWS, since policy and regulations do not allow new uses that fragment habitat on refuges.¹⁶⁶

The environmental setting for a proposed La Crescent/La Crosse crossing for the La Crosse Project is also within the USFWS Upper Mississippi National Wildlife Refuge. The crossing vicinity contains areas of high biodiversity significance.¹⁶⁷ The setting for a proposed La Crescent/La Crosse Mississippi River crossing also contains areas of high visual sensitivity, where transmission lines would have impacts on viewsheds from residences and from scenic roads, including the Great River Road (Southern Minnesota Scenic Byway).¹⁶⁸ There is also a bike/pedestrian trail proposed on land owned by the City of La Crescent and the USFWS, just south of the existing 69 kV towers.¹⁶⁹

Many state threatened and endangered species have been found within the La Crescent/La Crosse crossing vicinity, including mussel species, the peregrine falcon and the timber rattlesnake.¹⁷⁰ This crossing is in proximity to an active eagle nest and a blue heron colony on the Wisconsin side and an important heron and egret feeding area on the Minnesota side.¹⁷¹

The Wisconsin Department of Natural Resources has identified more than two dozen rare, threatened or endangered species in La Crosse County, Wisconsin the county bordering a proposed La Crescent/La Crosse River crossing. These endangered and threatened species include insects (Pecatonica river mayfly); fish (crystal darter, goldeye, starhead topminnow, pallid shiner, black redhorse, river red horse, bullhead, blue sucker);

¹⁶⁴ Ex. 1, Apx. E-1, p. 17-18, Apx. E-1, Map 6 (Application).

¹⁶⁵ Ex. 1, Apx. E-1, p. 17 (Application).

¹⁶⁶ Ex. 131, p. 2 (2/19/08 Letter from USFWS).

¹⁶⁷ Ex. 1, Apx. E-1, p. 23, Apx. E-1, Map 8 (Application); Tr. V. 13, p. 74-75,79-80 (Rasmussen).

¹⁶⁸ Ex. 1, Apx. E-1, p. 24 (Application); Tr. V. 13, p. 86-87 (Rasmussen).

¹⁶⁹ Ex. 131, p. 1 (2/19/08 Letter from USFWS).

¹⁷⁰ Ex. 1, Apx. E-1, p. 25 (Application).

¹⁷¹ Ex. 131, p. 1 (2/19/08 Letter from USFWS).

amphibians (the Blanchard's cricket frog); reptiles (wood turtle, Blanding's turtle); and birds (loggerhead shrike, great egret, red-shouldered hawk, cerulean warbler, Kentucky warbler, Bell's vireo, osprey) among other species.¹⁷²

The USFWS has also expressed concern that the larger towers and additional lines for a proposed La Crescent/La Crosse crossing may come into conflict with the La Crosse Airport and Federal Aviation Administration guidelines.¹⁷³ In suggesting that an alternative corridor using a buried line should be considered for the proposed CapX2020, the USFWS also expressed concerns “due to the large number of eagles, egrets, herons, and pelicans [that] cross back and forth over the interstate bridges as they use the various sloughs and channels on either side.”¹⁷⁴

Visual and environmental impacts from the proposed La Crosse Project would be different from those of existing lower voltage transmission lines. The typical steel structure for a double circuit 345 kV power line is 140-170 feet tall.¹⁷⁵ A 170-foot tall power line structure is equivalent in height to a standard 15-story building.

These large transmission structures require 150-foot right of way.¹⁷⁶ In addition to visual impacts, unavoidable long-term environmental impacts could include permanent destruction of wetlands along the area where lines are located and clearing forested areas of trees – for the most part anything growing over 20 feet – across the right-of-way.¹⁷⁷

Applicants' witness Pam Rasmussen agreed that all three proposed Mississippi River crossings for the La Crosse Project – At Alma, Winona or La Crescent/La Crosse – will impact environmentally sensitive areas.¹⁷⁸ Ms. Rasmussen also conceded that all three proposed Mississippi River crossings for the La Crosse Project – at Alma, Winona or La Crescent/La Crosse – would create some “unavoidable short-term and long-term environmental impacts.”¹⁷⁹

¹⁷² Ex. 1, Apx. E-1, p. 26-27 (Application).

¹⁷³ Ex. 131, p. 2 (2/19/08 Letter from USFWS).

¹⁷⁴ Ex. 131, p. 2 (2/19/08 Letter from USFWS).

¹⁷⁵ Tr. V. 8, pp. 88-89 (Stevenson); Ex. 1, p. 2.12 (Application).

¹⁷⁶ Ex. 1, p. 2.21 (Application).

¹⁷⁷ Tr. V. 13, p. 94, ll. 14-21 (Rasmussen).

¹⁷⁸ Tr. V. 13, pp. 87-88 (Rasmussen).

¹⁷⁹ Tr. V. 13, p. 88, ll. 9-10 (Rasmussen); Ex. 130, p. 3 (Rasmussen Rebuttal). See also Tr. V. 18A, pp. 28-29 (Birkholz).

D. The Fargo Project is Not Needed Beyond the City of St. Cloud. The 345 kV Line from Monticello to St. Cloud is Sufficient to Meet Need.

1. The Fargo Project is not needed for community reliability in the North Red River Valley, South Red River Valley or Alexandria.

A 230 kV transmission line between Grand Rapids and Bemidji was identified in the TIPS report in A-3 of the Application as needed to support community reliability needs in the Red River Valley area. This 230kV transmission line is being permitted separately in an uncontested certificate of need proceeding¹⁸⁰ and will proceed independent of the result of the CapX2020 certification.¹⁸¹ Applicants acknowledge that the proposed Bemidji to Grand Rapids 230 kV transmission line addresses reliability issues for the North Red River Valley through 2020.¹⁸²

In the Southern Red River Valley, the Application identified a very small (21MW) gap between n-1 critical load (1,360 MW) and forecasted winter peak demand through the year 2020 (1,381 MW).¹⁸³ As with other CapX2020 projects, the Applicants obtained forecasts from individual utilities without considering the new 2007 conservation requirement.¹⁸⁴

In the Southern Red River Valley, the application of 1.5% conservation pursuant to the 2007 statute is sufficient to provide reliability through 2020 if winter peak demand is calculated correctly. OES determined that compliance with the 1.5% energy conservation statute would reduce cumulative demand in the Southern Red River Valley 196MW by 2020.¹⁸⁵ This is more than enough demand reduction to fill the 21MW gap identified by Applicants. When the total Southern Red River Valley substation load is adjusted for coincidence of winter peak demand among substations,¹⁸⁶ as well as the

¹⁸⁰ Bemidji-Grand Rapids Proceeding, MPUC Docket No. ET-6/CN-07-1222; Ex. 1, Apx. A-3, p. 31 (Application).

¹⁸¹ Tr. V. 7, p. 62 (Kline).

¹⁸² Tr. V. 6, p. 161 (Kline).

¹⁸³ Tr. V. 7, pp. 136-138 (Kline); Ex. 1, p. 4.26, Figure 4-13, Apx. C-3 (Application).

¹⁸⁴ Tr. V. 7, pp. 132-133 (Kline); Ex. 82 (Response to OES IR 47).

¹⁸⁵ Ex. 219, p. 3 (Davis Chart/Impact of CIP Statute).

¹⁸⁶ Ex. 1, p. 4.22 (Application).

1.5% conservation, winter peak demand in the Southern Red River Valley is 1,230 MW in 2020 – well below the 1,360 MW critical load level.¹⁸⁷

Even if the critical load level in the Southern Red River Valley is somewhat diminished (1,255MW) as a result of construction of the Bemidji-Grand Rapids 230kV line as suggested by Applicants in response to discovery,¹⁸⁸ the 1,230 MW adjusted winter peak load in the Southern Red River Valley would remain below this critical load level. For the Southern Red River Valley, 1.5% conservation following State policy is all that is needed to provide an alternative to the Fargo Project.

Although it is not necessary to provide reliability in the Southern Red River Valley area since conservation is sufficient, the Pillsbury, North Dakota wind project may also serve to address reliability concerns in this area. A 358MW wind project is being constructed in Pillsbury, North Dakota, connecting to the Maple River substation, with 200MW of wind coming on line in 2008.¹⁸⁹ As Applicants' witness Daniel Kline explained, for the Pillsbury project for planning purposes one would typically consider 15 to 20 percent of the total power of that 200MW source – 30MW to 40 MW -- as an available resource for community reliability and load support.¹⁹⁰ This accredited local wind resource and its associated transmission, identified in RES compliance filings,¹⁹¹ could fill the 21MW reliability gap Applicants identified in the Southern Red River Valley as early as 2008.

Community reliability needs in the Alexandria area will be met with a combination of planned transmission and conservation in compliance with the 2007 conservation statute, without the Fargo Project.

In their original Application, the critical load level estimated for the Alexandria area was 171MW.¹⁹² With the Bemidji-Grand Rapids 230 KV line in service, Applicants have testified that the Alexandria area will be capable of serving 191MW of customer

¹⁸⁷ See Ex. 219, p. 3 (Davis Chart/Impact of CEP Statute); Ex. 1, pp. 4.22-4.24 (Application). OES reduced local substation totals from 1,795MW to 1,599MW by taking into account 1.5% conservation; multiplying 1,599 by 0.769 results in the adjusted winter peak load.

¹⁸⁸ Ex. 144, p. 2 (Response to IR No. 13 of NAWO/ILSR).

¹⁸⁹ Tr. V. 7, pp. 108-110 (Kline); Ex. 70, p. 5 (Kline Rebuttal).

¹⁹⁰ Tr. V. 7, pp. 169-170 (Kline).

¹⁹¹ Supplemental Compliance Filing of the Minnesota Transmission Owners, pp. 3,7, MPUC Docket No. E999/M-07-1028, #5497544 (September 11, 2008).

¹⁹² Ex. 1, p. 4.29, Apx. C-4 (Application).

load.¹⁹³ Using Applicants' forecasts of local need, building the Bemidji –Grand Rapids 230 kV line alone mitigates Alexandria reliability issues until the 2017-2019 time frame.¹⁹⁴

As with the other Southern Red River Valley communities described in this record, Applicants' substation forecasts for Alexandria did not consider the 1.5% conservation requirement. Under Applicants' demand assumptions, summer peak load in 2020 would be 185MW and winter peak load in 2020 would be 198MW.¹⁹⁵

OES determined that compliance with the 1.5% energy conservation statute would reduce cumulative winter peak demand in the Alexandria area by 21.6 MW by 2020, resulting in a winter peak demand of 176MW in 2020.¹⁹⁶ well below the 191MW of load that can be reliably supported in the Alexandria area with the Bemidji-Grand Rapids 230kV line in service.

Although not required to demonstrate reliability in this instance, given the Bemidji-Grand Rapids transmission project, it should be noted that conservation alone, at the level of 1.5% cumulative additional energy savings reflected in the OES sensitivity analysis, would result in a winter peak demand of 169MW and be sufficient to defer Alexandria's reliability concerns until after 2020.¹⁹⁷

2. A segment of the Fargo 345 kV line from Monticello to St. Cloud would cost-effectively meet St. Cloud's reliability needs.

No expert witness in these proceedings disputed the need for additional 345 kV support to address community reliability needs in the St. Cloud area. The critical load level in St. Cloud was calculated by Applicants at 285MW with Granite City generation on line.¹⁹⁸ Even with the OES adjustment to comply with the 2007 conservation statute, local need in St. Cloud was estimated at 407 MW, well in excess of that capacity.¹⁹⁹

¹⁹³ Tr. V. 7, p. 140 (Kline); Ex. 74, p. 4 (Kline Surrebuttal).

¹⁹⁴ Ex. 144 (Response to IR No 13 of NAWO/ILSR).

¹⁹⁵ Ex. 1, p. Apx C-4 (Application); Ex. 144 (Response to NAWO IR 13).

¹⁹⁶ Ex. 219, p. 4 (Davis Chart/Impact of CIP Statute).

¹⁹⁷ Tr. V. 21, pp. 98-99 (Davis); This is the OES sensitivity analysis in Ex. 219, p. 4 (Davis Chart/Impact of CIP Statute).

¹⁹⁸ Ex. 1, Apx. C-5 (Application).

¹⁹⁹ Ex. 219, p. 5 (Davis Chart/Impact of CIP Statute).

NAWO/ILSR witness Michael Michaud has recommended that a radial segment of the Fargo 345 kV line from Monticello to St. Cloud be constructed to address community reliability needs in St. Cloud.²⁰⁰ Applicants' witness Daniel Kline agreed that a Monticello - St. Cloud 345 kV radial segment is sufficient to serve load in St. Cloud that need. Using the load growth assumptions in the Application, this 345 kV portion of the proposed Fargo line would meet the needs in St. Cloud well past 2020.²⁰¹

Costs for the new Quarry substation (St. Cloud) would be about \$12-13 million, and costs for upgrading the Monticello substation would be about \$4-5 million.²⁰² The segment of the Fargo Project from the Monticello substation in Monticello to the new Quarry substation in St. Cloud would be from 30 to 40 miles long.²⁰³ The total cost for a radial segment of the Fargo 345 kV line running from Monticello to a new Quarry substation in St. Cloud would, thus, be from \$49 million to \$62 million²⁰⁴

Other than the segment from Monticello to St. Cloud, the balance of the Fargo Project is not needed for community reliability.²⁰⁵

3. Applicants have not shown that the Fargo Project is needed for generation outlet capacity or renewable energy support.

Applicants have asserted a need for generation outlet capacity specifically in order to comply with the Renewable Energy Standard.²⁰⁶ To the extent that the Application described a generation outlet need for the Fargo Project, that need was defined with reference to renewable wind energy:

The Twin Cities-Fargo 345 kV Project will increase generation outlet in northwestern Minnesota and eastern North Dakota, an area with significant potential for wind generation development. (The area has an annual average wind power of Class 4, 15 to 17 mph.)²⁰⁷

²⁰⁰ Ex. 140, pp. 27-29 (Michaud Direct); Tr. V. 16, p. 134 (Michaud).

²⁰¹ Tr. V. 6, p. 157 (Kline); Tr. V. 7, p. 144 (Kline).

²⁰² Tr. V. 8, p. 42 (Stevenson).

²⁰³ Ex. 83, p. 12 (Stevenson Direct).

²⁰⁴ Costs for the CapX2020 power lines are \$1.1 million for single circuit 345 kV, Ex. 177, p. 12a, Table 3a (Schedin Direct), Tr. V. 8, p. 50 (Stevenson). Calculations for low end (\$4 + \$12 + 30 miles x \$1.1 million), for high end (\$5 + \$13 + 40 miles x \$1.1 million).

²⁰⁵ Tr. V. 16, p. 136 (Michaud).

²⁰⁶ Tr. V. 2A, p. 20 (Rogelstad).

²⁰⁷ Ex. 1, p. 4.48 (Application).

Applicants acknowledge that it is not clear on this record how the 350 MW increase in NDEX projected for the Fargo Project equates to generation outlet capacity in any place.²⁰⁸ There is no study evidence that the Fargo Project will meet a need for wind generation outlet capacity. The only evidence of generation outlet capacity for the Fargo Project is that it will increase North Dakota Export capability as a “secondary benefit” to its load serving qualities.²⁰⁹ Applicants’ witness Tim Rogelstad explained that the specific studies supporting the Fargo as well as the La Crosse Project “are not generation interconnection or generation siting studies to determine how you can add that additional generation to the system.”²¹⁰

The modeling for the Fargo Project in the TIPS study assumed an increase in existing generation.²¹¹ The sources for incremental generation for the Fargo Project were allocated 100 percent to the following facilities: the Antelope Valley, North Dakota coal plant; the Boswell coal plant; the Monticello nuclear power plant; the Big Bend, South Dakota 500MW hydroelectric power plant, and the Coyote coal plant near Beulah, North Dakota.²¹²

In addition to the TIPS modeling, this record demonstrates that the Fargo Project could serve as generation outlet capacity for North Dakota coal. Subject to interconnection and ability to deliver power, any location within North Dakota could take advantage of the 350MW increase in NDEX resulting from the Fargo Project.²¹³ There is more existing coal generation in central North Dakota than there is wind.²¹⁴ If the Fargo Project were constructed, it would be possible for Antelope Valley to serve as a source of incremental generation as modeled in the TIPS study. The Antelope Valley Station power plant in North Dakota is the newest coal-based power plant in North Dakota.²¹⁵

Both as the project was specifically modeled in the TIPS study and as it is likely to operate in practice, the Fargo 345 kV transmission facility would conflict with the preference for renewable energy reflected in Minnesota’s certificate of need statute:

²⁰⁸ Tr. V. 15, pp. 50-51 (Alders).

²⁰⁹ Ex. 1, Apx. A-3, p. 4 (Application).

²¹⁰ Tr. V. 3, p. 33 ll. 4-12 (Rogelstad).

²¹¹ Tr. V. 2B, p. 54 (Rogelstad); Tr. V. 7, pp. 88-89 (Kline).

²¹² Ex. 1, Apx. A-3, p. 16 (TIPS Update); Tr. V. 7, pp. 83-84 (Kline).

²¹³ Tr. V. 7, p. 86 (Kline).

²¹⁴ Tr. V. 7, pp. 39-40 (Kline).

²¹⁵ Ex. 1, Apx. A-3, p. 16 (TIPS Update); Tr. V. 7, p. 81-82 (Kline).

The commission may not issue a certificate of need under this section for a large energy facility that generates electric power by means of a nonrenewable energy source, or that transmits electric power generated by means of a nonrenewable energy source, unless the applicant for the certificate has demonstrated to the commission's satisfaction that it has explored the possibility of generating power by means of renewable energy sources and has demonstrated that the alternative selected is less expensive (including environmental costs) than power generated by a renewable energy source. (Minn. Stat. §216B.243, subd. 3a).

Although Applicants argue that the renewable energy preference is inapplicable to any of the CapX2020 Projects, precedent suggests that it would apply on the facts pertaining to the Fargo Project. The standard for application of Subd. 3a articulated in the recent Big Stone II transmission case is whether “a material portion of the electricity that will be transported” over the transmission lines will come from a nonrenewable energy source.²¹⁶

The Commission’s Order in the case involving the Appleton-Canby 115 kV High voltage Transmission is not applicable to the Fargo 345 kV line. In the Canby case, the Commission based its decision that Subd. 3(a) requirements had been met on explicit findings that the new power line would not interconnect with any particular generation source, and that “the transmission line in question is not needed to interconnect or transmit power from a new generation source.”²¹⁷ On this record, no segment of the Fargo 345 kV line beyond St. Cloud can be justified *unless* it is needed to interconnect or transmit power from a new generation source. The Canby-Appleton precedent would not prevent application of the renewable energy preference for the Fargo Project beyond the City of St. Cloud.

Joint Intervenors’ witness, Mr. Schedin, acknowledged that the TIPS Study did not evaluate generator outlet benefits of the Fargo Project for wind generation and that there are no studies provided in the application for certificate of need that demonstrate its generator outlet benefits for new wind generation development in eastern North Dakota.²¹⁸ Wind projects completed or under construction in North Dakota do not

²¹⁶ Ex. 20, p. 11, ¶ 34 (Big Stone II Supplemental Findings).

²¹⁷ Ex. 27, p. 9 (Appleton-Canby 115kV, MPUC Order Granting Certificate of Need).

²¹⁸ Tr. V. 19, p. 159 (Schedin); Ex. 1, TIPS Study in Apx. A-3 p. 16 (Application). Mr. Schedin noted that some private development studies support a wind generation benefit.

demonstrate the need for the Fargo line to provide outlet capacity, since none of these projects depend on the Fargo Project for their transmission.²¹⁹

Mr. Schedin suggested that studies be conducted now with respect to the Fargo Project to demonstrate the generator outlet benefit for substantial wind generation development in eastern North Dakota²²⁰ and did not recommend delaying the certificates of need to do these studies.²²¹

The weakness of the record pertaining to generation outlet capacity and renewable energy support created by the Fargo Project is of particular concern because the record suggests that dispersed renewable generation (“DRG”) would provide an alternative to the Fargo Project more consistent with state policies and more cost-effective than the Fargo Project.

Intervenor NAWO/ILSR proposed DRG as an alternative to the CapX2020 projects for generator outlet capacity well before the close of public hearings.²²² As explained in the Dispersed Renewable Generation Study, Exhibit 110 in this record, a statewide study to evaluate the wind generation outlet potential for DRG was required as part of the Governor’s Next Generation Energy Initiative enacted by the Minnesota Legislature in May 2007.²²³ The Minnesota Department of Commerce was directed to manage a statewide transmission study of DRG potential divided into two phases of 600MW each, with reports due June 2008 and September 2009, respectively.²²⁴ This legislatively-mandated DRG study reached the conclusion that “a dispersed renewable generation scenario where a total of 600 MW of 10 to 40 MW new generation projects could potentially be sited without significantly affecting any transmission infrastructure.”²²⁵

The OES has agreed that, for generation outlet needs, dispersed generation is a potential alternative to new transmission.²²⁶ Applicants’ witness Tim Rogelstad has also

²¹⁹ Tr. V.19, p. 165-167 (Schedin). Wind projects are described in Ex. 177, p. 22 (Schedin Direct).

²²⁰ Ex. 177, p. 6 (Schedin Direct).

²²¹ Tr. V. 19, p. 175 (Schedin).

²²² Ex. 154, p. 3-4 (Michaud Surrebuttal).

²²³ 2007 Minn. Laws, Ch. 136, Art. 4 §17.

²²⁴ Ex. 110, p. 10 (DRG Study).

²²⁵ Ex. 110, p. 13 (DRG Study).

²²⁶ Ex. 282, p. 27, l. 23 (Rakow Direct).

testified that acquiring 600MW of dispersed renewable generation may be the least cost way to secure new generation.²²⁷

CETF accepts the qualification that the DRG study was a preliminary investigation and that installation of DRG facilities, even in relatively transmission unconstrained sites may involve some costs. However, faced with weak evidence of renewable generation outlet capacity from the Fargo Project and a potential DRG alternative, CETF believes it is unlikely that the Fargo Project beyond the City of St. Cloud represents a least cost alternative for generation outlet capacity in western Minnesota.

Using the mid-point estimate (\$56 million) for the cost from Monticello to St. Cloud, the remaining length of the Fargo Project would cost from \$334 million to \$504 million under Applicants' original proposal. On a per megawatt basis, based on the only evidence of outlet capacity in this record – the 350MW of NDEX increase -- the portion of the Fargo Project beyond St. Cloud would cost from \$954,000 to \$1,440,000 per megawatt of generation outlet capacity.

The Environmental Report in this proceeding provides examples of transmission costs to support wind energy in Minnesota by summarizing the MISO Group 4 and Group 5 study projects. The four transmission projects in MISO's Group 4 would support 750MW of wind with 66 to 73 miles of 115 kV and 161 kV power lines.²²⁸ Based on the cost of transmission lines in this record,²²⁹ the Group 4 projects could support 750MW of wind with approximately \$38 million in transmission costs.

The Environmental Report also describes the MISO Group 5 study projects, which would support 2,858 MW of wind capacity at a transmission cost of \$503 million. These projects would cost \$176,000 per megawatt of renewable outlet capacity.²³⁰

Although CETF shares Joint Intervenors' hunch that some form of transmission in western Minnesota might be needed to support wind generation, absent record evidence, there is no reason to assume that the size, location, configuration or cost for that potential wind line would resemble the Fargo 345 kV Project. Fundamentally, the prospect of

²²⁷ Tr. V. 1B, p. 79, ll. 1-5 (Rogelstad).

²²⁸ Ex. 5, p. 83 (Environmental Report); Tr. V. 18A, p. 9 (Birkholz).

²²⁹ Ex. 177, p. 12a, Table 3a (Schedin Direct): calculating single circuit cost for 161 kV \$595,000 per mile; single circuit cost for 115 kV \$458,000 per mile.

²³⁰ Ex. 5, p. 86 (Environmental Report).

conducting studies to demonstrate generation outlet capacity after a certificate of need has been issued is inconsistent with Minnesota law that places the burden of proof on applicants to demonstrate need. Minn. Stat. §216B.243, subd. 3.

E. The Brookings Project is Needed Only if Conditions Ensure Its New Generation Outlet Capacity is Secured for Wind Development.

1. The Brookings Project is not needed for community reliability.

Although Applicants have asserted that the Brookings Project would provide local reliability “benefits” to the communities in the project area,²³¹ they have not defined a need in any of the communities in the Brookings project area or an “adverse effect” on the future reliability that would result in these communities if the project is not certified as required to show need under Minnesota Rules 7849.0120, subp A.

With respect to benefits of community load serving for the Brookings Project, OES witness Dr. Rakow concluded “the Applicants did not make a firm claim that could be tested.”²³²

In Appendices C-1 through C-5 of the Application there are data for local communities proposed to be served by the La Crosse and Fargo Projects, stating critical load levels, estimates of demand growth and megawatts potentially at risk due to community reliability concerns.²³³ There are no similar appendices, tables or data provided by the Applicants for the Brookings line.²³⁴

The data in this record is clearly insufficient to establish a need for the Brookings Project on the basis of community reliability.

2. Any need for the Brookings Project is specific to wind generation outlet capacity from the area served by the Project.

The need for the Brookings Project is, specifically, to provide generation outlet capacity for wind energy from the Buffalo Ridge area. Once constructed, the Brookings Project is projected to provide approximately 700MW of additional generation outlet

²³¹ See e.g. Ex. 104, p. 7-8 (Alholinna Direct).

²³² Tr. V. 25, p. 67, ll. 4-6 (Rakow).

²³³ Ex. 1, Apx. C-1 through C-5 (Application).

²³⁴ Tr. V. 11, p. 76-77 (Alholinna).

capacity in the Buffalo Ridge area over and above the 1,200 MW of generation outlet that will be available after the Buffalo Ridge Incremental Generation Outlet (BRIGO) projects are in service.²³⁵

In testimony, Applicants' witnesses have repeatedly confirmed the following:

- The “primary purpose of the Twin Cities- Brookings County 345 kV Project is to increase transmission available to support the wind generation in the Buffalo Ridge region.”²³⁶
- Generation outlet is the “primary driver “for the Twin Cities to Brookings line and associated projects.”²³⁷ This generation outlet will be used primarily by renewable resources.²³⁸
- The “primary rationale” for the Twin Cities-Brookings County 345 kV project is to add generation outlet capacity in the southwestern Minnesota to accommodate increasing amounts of available wind energy.²³⁹

There are numerous places in Application where Applicants assert that the purpose for the Brookings Project is “renewable based generation,”²⁴⁰ “wind farm development,”²⁴¹ “renewable energy generation” and “further wind generation development on the Buffalo Ridge.”²⁴² There are no similar statements in the Application about the need for the Brookings Project to provide generation outlet capacity for coal generation²⁴³ or non-renewable generation in general.²⁴⁴

Applicants' witness Matthew Lacey cited the quality of wind regimes on Minnesota wind resource map and the number of wind projects in the MISO queue, testifying, “In order for utilities to meet the RES milestones, more outlet capacity from the Buffalo Ridge area is needed.”²⁴⁵ There is no evidence that outlet capacity for *non-*

²³⁵ Ex. 104, p. 5 (Alholinna Direct).

²³⁶ Ex. 104, p. 7, ll. 5-7 (Alholinna Direct); Tr. V. 10, p. 70 (Alholinna).

²³⁷ Tr. V. 11, p. 76, ll.4-6 (Alholinna).

²³⁸ Tr. V. 10, p. 68, ll. 12-18, p. 69, ll. 15-16 (Alholinna).

²³⁹ Tr. V. 2B, p. 26 ll.19-25 (Rogelstad); Ex. 1, p. 4.4 (Application).

²⁴⁰ Ex. 1, p. 1.4 (Application).

²⁴¹ Ex. 1, p. 1.15 (Application).

²⁴² Ex. 1, p. 1.21 (Application).

²⁴³ Tr. V. 11, p. 110 (Lennon).

²⁴⁴ Tr. V. 15, p. 82-84 (Alders).

²⁴⁵ Tr. V. 3, p. 217-218 (Lacey); Ex. 53, p. 11 l. 22 -12 l. 4 (Lacey Rebuttal).

renewable generation is needed in the areas served by the Brookings Project during the 2013-2014 time frame when the Project is expected to become fully subscribed.²⁴⁶

The need for the Brookings Project is clearly related to supporting wind energy in southwestern Minnesota and the Buffalo Ridge in order for utilities to meet the RES milestones.

3. Without conditions, the new capacity of the Brookings Project may defeat the need for which it would be approved.
 - a. The Brookings' Project's new capacity may be subscribed by coal.

Without conditions designed to ensure that new capacity resulting from the Brookings Project is subscribed for wind, the Project may fail to meet the need that justifies its certification. As Joint Intervenors' witness Christopher Ellison testified:

Applicants do not control access to the proposed new lines and they cannot ensure that these projects will support the RES requirements without taking specific steps. Absent such steps, there is the very real risk that this new capacity will be allocated to the Big Stone II coal project or other nonrenewable facilities in a manner that will impede achievement of the state's RES policies.²⁴⁷

Applicants have acknowledged that they cannot not say as a fact whether the Brookings line will increase generation outlet capacity for wind or for another form of energy.²⁴⁸ Given the way in which the MISO queue operates, there is no guarantee that the Brookings Project would be exclusively for renewable generation.²⁴⁹

MISO has also agreed that there is no guarantee that the 700MW of new generation outlet capacity estimated for the Brookings line will be used for renewable energy.²⁵⁰

In terms of MISO's review, a coal project could request transmission service without being owned by a utility and without demonstrating a power purchase agreement. A coal project, such as the Big Stone II, could also deliver power outside Minnesota. MISO is intentionally neutral in terms of buyers and sellers.²⁵¹

²⁴⁶ Tr. V. 11, p. 18 (Alholinna); See also Ex. 113, p. 71, 73 (GRE 7/1/08 Resource Plan).

²⁴⁷ Tr. V. 20, p. 13 (Ellison).

²⁴⁸ Tr. V. 11, p. 50 (Alholinna).

²⁴⁹ Tr. V. 13, p. 112 (Alders).

²⁵⁰ Tr. V. 5A, p. 68 (Webb).

²⁵¹ Tr. V. 21, p. 32-34 (Ellison).

Although recent entries to the MISO queue include many wind projects, there are over 4,200 MW of coal currently in the MISO queue for Minnesota, South Dakota, North Dakota, Wisconsin, and Iowa.²⁵² The 229 active projects in the MISO queue with signed interconnection agreements and an expected in-service date prior to 2016 are dominated by 4,511 megawatts of coal projects. Gas-fueled combined-cycle projects amount to 1,805 megawatts, and wind projects total 1,008 megawatts.²⁵³

Although the wind generation intended to be served by the Brookings Project is located close to the line, the range of generation that could end up benefiting from the Project extends beyond this study area. Generation further west in central South Dakota could also use the transmission.²⁵⁴

Applicants' witness Walter Grivna testified that a likely future development that would increase the use of the Brookings Project involves an extension of the Antelope Valley, North Dakota 345 kV transmission line to either the Brookings or White substation.²⁵⁵ Mr. Grivna explained that the Antelope Valley-Broadland extension to the Brookings Project would provide a more direct connection for coal or lignite to the areas served by the CapX lines.²⁵⁶

Q: And if the Brookings projects -- CapX projects were built, that would then also provide a more direct connection between Antelope Valley and the load serving areas of the Brookings project, wouldn't it?

A: Yes.

Q: Are you aware of the generation types that are located in Antelope Valley?

A: I'm not sure if it's coal or lignite.

Q: So your understanding is that the Antelope Valley station is either a coal or lignite coal power plant in North Dakota?

A: I believe so.²⁵⁷

b. The Brookings Project could provide alternative transmission for Big Stone II coal.

The EHV study for the Brookings Project assumed 600MW of generation from the Big Stone II coal plant and its associated transmission in its base model.²⁵⁸ If the Big

²⁵² Ex. 60, p. 2 (MISO Response to IRs No. 3-8 of NoCapX).

²⁵³ Ex. 59, p. 37 (2007 MTEP Report).

²⁵⁴ Tr. V. 17A, p. 48 (Michaud).

²⁵⁵ Tr. V. 12, p. 69-70 (Grivna).

²⁵⁶ Ex. 121, p. 38 (Grivna Rebuttal).

²⁵⁷ Tr. V. 12, p. 77-78 (Grivna).

Stone II transmission upgrade currently before the Commission were to be approved, there is no question that the Brookings Project will transmit some degree of non-renewable energy from the Big Stone coal plant. The Brookings Project provides a lower impedance path than the Minnesota Valley to Blue Lake transmission for Big Stone II, so a certain amount of the power from Big Stone would be coming onto the Brookings line as a path of least resistance.²⁵⁹

If the Brookings Project is approved without conditions, it is possible that this 345 kV line could transmit coal generation from Big Stone II even if the Commission denies a certificate of need for the Big Stone II transmission upgrades. It would be possible electrically for the Big Stone II coal plant to connect to a portion of the Brookings Project that is in South Dakota,²⁶⁰ outside the jurisdiction of the Minnesota Public Utilities Commission.

The MISO queue process provides Big Stone II with a favorable position from which to obtain this interconnection. The point of interconnection for the Big Stone II for purposes of MISO queue studies is at the existing Big Stone I substation in South Dakota, not at the Minnesota sites of the transmission upgrades to Morris and Granite Falls.²⁶¹

Thus, if the certificates of need for the Big Stone II upgrades were to be denied by the Commission, a change in the interconnection point would not be needed. Big Stone II could seek interconnection using different upgrades without triggering a “material modification” and losing its queue position. If the interconnection were restudied at MISO considering the additional transfer capacity of the Brookings line, Big Stone II might obtain transmission access through the CapX2020 lines.²⁶² Big Stone II has a favorable high position in the MISO queue and is grandfathered in under the old, pre-reform MISO interconnection process. It still retains its favorable position.²⁶³

Absent the proposed conditions, the Big Stone II queue position could enable it to take a significant amount of the capacity on the Brookings line even if the Commission

²⁵⁸ Tr. V. 10, p. 153-154 (Alholinna); Ex. 1, Apx. A-4 (Application).

²⁵⁹ Tr. V. 10, p. 156 (Alholinna).

²⁶⁰ Tr. V. 2A, p. 116 l.22 - p. 117 l.3 (question), p. 119 ll. 15-25 (answer)(Rogelstad); Tr. V. 2B, p. 90-91 (Rogelstad).

²⁶¹ Tr. V. 3, 72-73, p. 10 (Rogelstad).

²⁶² Tr. V. 21, p. 42-44 (Ellison).

²⁶³ Tr. V. 20, p. 140-141 (Ellison); Tr. V. 21, p. 29 (Ellison).

denies the Big Stone II certificate of need. An important effect of conditions on the Brookings Project is to ensure that this does not happen.

c. The Brookings Project may not help utilities meet the RES milestones.

Under Federal Energy Regulatory Commission (“FERC”) rules, without conditions not only might coal plants use the new Brookings Project capacity, but Applicant utilities may be unable to interconnect wind projects needed to meet their RES obligations. As Joint Intervenors witness Mr. Ellison explained, Applicants would have no particular right to use the new transmission facilities simply because they have built them and no particular right to transmit renewable energy because they have contracted with renewable energy developers or plan to construct utility-owned renewable energy projects.²⁶⁴

MISO will not enforce Minnesota’s renewable energy standards. They will expect that enforcement to come from the State. If a coal project moves forward in MISO, MISO will grant transmission access irrespective of the RES statutes of Minnesota.²⁶⁵

Yet, without transmission and the opportunity to successfully interconnect to the network and produce energy, renewable generation will not count toward the RES. Without conditions, Minnesota has the potential to have the worst of all possible worlds, where ratepayers pay for CapX2020 transmission, experience the effects of coal emissions from a neighboring state and then fail to meet RES milestones. If significant amounts of capacity from the Brookings Project are used for non-renewable energy, this could contribute to a claim by utilities that the “off-ramp” in Minnesota’s RES statute should be exercised.²⁶⁶ As Mr. Ellison explained in response to questions:

Q: [W]ould you agree that the Applicants will be obliged to meet the Renewable Energy Standards regardless of whether these conditions are placed on the certificate of need for these facilities?

A: As a matter of law, yes, I agree with that. They are obliged, regardless of the conditions that I propose. As a practical matter, their ability to comply with that standard I think will be greatly assisted by these conditions, and there is the off-ramp for transmission constraints in the RES statute. And so when I

²⁶⁴ Ex. 204, p. 5, ll. 4-7 (Ellison Direct).

²⁶⁵ Tr. V. 21, p. 34-35 (Ellison).

²⁶⁶ See Minn. Stat. §216B.1691, Subd. 2(b).

say that they are legally obliged to comply, that includes the off-ramp, and my principal concern is that without these conditions, the likelihood of that off-ramp being exercised is much greater.²⁶⁷

4. The need and rationale for conditions in the 825MW Wind Proceeding apply to the Brookings Project.

It is clear that the need, rationale and considerations requiring conditions for the Brookings Project are virtually indistinguishable from the proceeding brought by Xcel Energy to certify four high voltage transmission lines for the purpose of providing 825MW of wind generation outlet capacity in southwestern Minnesota (“825MW Wind Proceeding”).

In the 825 MW Wind Proceeding, the purpose of the high voltage transmission was for wind outlet on the Buffalo Ridge.²⁶⁸ The Brookings Project, similarly, is specifically intended to provide wind outlet on the Buffalo Ridge.²⁶⁹ In the 825MW Wind Proceeding, Xcel Energy claimed that “the lines are needed to meet a transmission deficit that is preventing the development of wind energy in Minnesota,” thereby frustrating state policies requiring Minnesota utilities to rely more heavily on wind generation.²⁷⁰ A similar claim is made on this record with respect to meeting the obligations of the RES.²⁷¹

In the 825 MW Wind Proceeding, the Commission noted that the application for the four high voltage lines “carries the risk that the proposed transmission lines will not be used for the purpose for which they are intended and for which any certificates of need would be granted.”²⁷² The same risk that the lines would be used for non-renewable energy rather than renewable energy is presented for the Brookings Project in this proceeding.²⁷³

In cross-examination in this CapX2020 case, Applicants’ witness James Alders acknowledged that Applicants’ objections to conditions in this proceeding are “similar

²⁶⁷ Tr. V. 21, p. 37 ll. 1-5 (Ellison).

²⁶⁸ Ex. 214, p. 3 (Order *In the Matter of the Application of N. States Power Co. d/b/a/ Xcel Energy for Certificates of Need for Four Large High Voltage Transmission Line Projects in SW. Minn.* MPUC Docket No. E-002-CN-01-1958 March 11, 2003 “825MW Wind Order”). Tr. V. 20, pp. 39-40 (Ellison).

²⁶⁹ Ex. 104, p. 7 (Alholinna Direct); Tr. V. 10, p. 70, ll. 15-20 (Alholinna).

²⁷⁰ Ex. 214, p. 3 (825MW Wind Order).

²⁷¹ See e.g. Ex. 53, p. 11 l. 22 -12 l. 4 (Lacey Rebuttal)

²⁷² Ex. 214, p. 3 (825MW Wind Order).

²⁷³ Tr. V. 20, pp. 163-164 (Ellison).

to” and express “the same concerns” as were expressed in 825MW wind proceeding and that in the 825 MW wind proceeding before conditions were imposed on the lines and the lines were constructed and put into service.²⁷⁴

In the 825MW Wind Proceeding, the Commission followed the ALJ’s recommendation to attach conditions to the certificated of need:

The Commission concurs with the Administrative Law Judge that it is critical to place conditions on these certificates of need to maximize the likelihood that the certified lines will be used for their intended purpose.²⁷⁵

5. Conditions for the Brookings Project should parallel those in the 825MW Wind Proceeding.

Conditions proposed by Joint Intervenors’ witness Mr. Ellison are generally designed to operate in the same manner as conditions imposed in the 825MW wind case, with some differences reflecting changes since that time.²⁷⁶ Conditions proposed by CETF, since they pertain only to the Brookings Project, even more closely resemble the conditions in the 825MW Wind Proceeding.

As with condition 4(a) in the 825MW Wind Proceeding and Mr. Ellison’s first conditions, the most important condition recommended by CETF is the first condition that Applicants sign power purchase agreements (PPAs) of commit to utility-owned projects using the capacity from the new transmission lines at least two years prior to the expected in-service date of the proposed transmission lines.²⁷⁷

As Mr. Ellison explained, a PPA has always been the key to successful project development and recent MISO reforms make it even more important.²⁷⁸ In theory, whether in 2002 or today, it has always been possible to interconnect to transmission without a PPA. In practice, Mr. Alders concurred, most developers aren't able to develop a project without one.²⁷⁹ For projects to move forward with financing, they need a PPA to

²⁷⁴ Tr. V. 15, pp. 10-11 (Alders).

²⁷⁵ Ex. 214, p. 16 (825MW Wind Order).

²⁷⁶ Tr. V. 20, p. 28 (Ellison), The “825 MW Wind” case refers to case involving CON for 4 large energy facilities, docket 01-1958, *see* Tr. V. 20, p. 39 (Ellison).

²⁷⁷ *See* Mr. Ellison’s condition (1), p. Ex. 204, pp. 3, 13 (Ellison Direct); condition 4(a) in the 825MW Wind Order, Ex. 214, p. 24 (825MW Wind Order).

²⁷⁸ Tr. V. 20, p. 14, ll. 6-15 (Ellison).

²⁷⁹ Tr. V. 15, pp. 69-70 (Alders).

guarantee the amount of income they'll need to stay afloat.²⁸⁰ As Mr. Kline acknowledged, a power purchase agreement would certainly make it easier for a wind project to succeed.²⁸¹

The addition of utility-owned projects to this first condition reflects a recent statutory change permitting this ownership. (2007 Minn. Laws, Ch. 136, Art. 4 §10, amending Minn. Stat. §216B.1691, subd. 7). The clause pertaining to approval by other appropriate regulators allows for the possibility that Applicants may allocate some of the responsibility for compliance with this condition to a municipal utility or cooperative.

The second condition proposed by CETF requires verification of the amount of generation outlet capacity that will be made available by the Brookings Project. Although Applicants have provided the planning number of 700MW of wind outlet capacity for the Brookings Project, the record also includes references to other transmission projects under consideration that may modify this capacity.

If certificates of need for the Big Stone II proceeding were to be denied by the Commission, for example, plans for the lower voltage might need to be modified and outlet capacity from the Brookings Project might change.²⁸² CETF's second condition will ensure that the Brookings Project secures at least the 700MW of new renewable generation for which it is being certified. This condition is similar to the first part of Mr. Ellison's second condition, which requires a compliance filing to determine and allocate of generation capacity.²⁸³

CETF's third condition is comparable to the requirement in condition 4(b) of the Order in the 825MW Wind Proceeding requiring that wind generation be installed by the time the transmission line becomes operational. CETF's fourth and fifth conditions are comparable to conditions 4(c) and 4(d) of the Order in the 825MW Wind Proceeding and Mr. Ellison's fourth and fifth conditions,²⁸⁴ reflecting changes in MISO proceedings since March 2003, when this Order was issued.

²⁸⁰ Tr. V. 6, p. 168, ll. 2-7 (Kline).

²⁸¹ Tr. V. 6, p. 170, ll. 4-6 (Kline).

²⁸² Tr. V. 11, pp. 38-39 (Alholinna).

²⁸³ Ex. 204, pp. 7-8, 14 (Ellison Direct).

²⁸⁴ Mr. Ellison's fourth condition is described in Ex. 204, pp. 9-10, 14-15 (Ellison Direct); his fifth condition is described in Ex. 204, pp. 10, 15 (Ellison Direct).

A change in the MISO Real-Time Energy Markets in April 2005 changed the appropriate timing for filing of Transmission Service Requests, which should now be filed when there is a contract of a commitment for the project and the size and specifics are known, either due to PPA or a utility development of a project.²⁸⁵ This change is reflected in CETF's proposed conditions.

Designation as Network Resources, or Network Resource Interconnection Service ("NRIS") designation in the MISO regime, gives a resource firm transmission rights for the capacity that has been evaluated in the MISO studies. Energy resource interconnection ("ERIS") is when a power plant is accepted by the system only to the extent the transmission system has capacity.²⁸⁶ Firm transmission rights, as required by the fifth condition, give a resource priority status over a generation resource that is interconnected but does not have firm transmission service.²⁸⁷

In the 825MW Wind Proceeding, the Commission concluded,

The most straightforward way to ensure that the proposed lines will be used to carry wind generation and the way most likely to succeed is to require Xcel to purchase the 825 megawatts of wind the lines are intended to carry and to secure transmission authority from MISO before the lines are ready to go into service. Since these requirements are consistent with both the purpose of Xcel's certificate of need application and with existing obligations to add significant amounts of renewable generation to its supply portfolio, it is the best solution to the stalemate resulting from the interdependence of wind development and transmission availability.²⁸⁸

Conditions to ensure that the capacity of a proposed transmission line be used for renewable energy have been proposed elsewhere in the United States as an alternative to denial of a certificate of need for a transmission line.²⁸⁹

²⁸⁵ Tr. V. 15, pp. 65-66 (Alders); Ex. 132, p. 17 (Alders Rebuttal).

²⁸⁶ Tr. V. 15, p. 71 (Alders).

²⁸⁷ Tr. V. 20, p. 121, ll. 4-8 (Ellison).

²⁸⁸ Ex. 214, p. 17 (825MW Wind Order).

²⁸⁹ Applicants asked if similar conditions have been proposed in other jurisdictions, Tr. V. 20, pp. 105-106 (Ellison). They were proposed as an alternative to denial of certification in Alternate Proposed Decision Granting as Conditioned a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project *In the Matter of the Application of San Diego Gas & Elec. Co. for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project*, Cal. Public Utilities Comm'n, Docket No. A.06-08-010 (October 31, 2008) (<http://docs.cpuc.ca.gov/efile/ALT/93073.pdf>). The ALJ Proposed Decision Denying a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project (October 31, 2008) is at (<http://docs.cpuc.ca.gov/efile/PD/93071.pdf>).

CETF believes that, without appropriate conditions, the Brookings Project creates an unreasonable risk of transferring new coal energy and circumventing Minnesota jurisdiction, both in the Big Stone II proceeding and in the case of future coal generation projects. Minnesota citizens and ratepayers would experience the environmental impacts and involuntary costs of transmission, the air emissions and global warming impacts of new coal and could be required to pay for yet more transmission to meet the RES requirements if capacity on the Brookings Project was consumed for fossil fuel bulk power transfer. Without conditions, CETF would oppose the Brookings Project and request this Commission to deny its certification.

However, CETF believe that a Commission Order similar to that in the 825MW Wind Proceedings would be effective to protect Minnesota citizens and ensure that the proposed Brookings Project transmission lines will be used to transmit wind energy and meet RES obligations. CETF proposes the following conditions for that purpose:

- (1) Applicants must sign power purchase agreements (“PPAs”) with wind developers and/or commit to utility-owned wind energy projects for a minimum of 700MW of wind energy on the Buffalo Ridge and/or in other areas served by the Brookings Project no later than two years prior to the in-service date of the Brookings Project and must timely seek Commission or other regulatory approval within a time frame permitting approval within 6 months after this signing/commitment date.
- (2) Applicants must verify the renewable energy generation capacity of the Brookings Project within 60 days of obtaining certificates of need and disclose this verified generation capacity and how they plan to allocate its capacity in a compliance filing. Applicants’ verified generation capacity may not fall below 700MW.
- (3) Applicants must install a total of 700MW or the verified generation capacity determined in condition 2 on the Buffalo Ridge and/or in other areas served by the Brookings Project by the time the Brookings Project transmission lines become operational.
- (4) Applicants must make Transmission Service Requests (“TSRs”) for network (firm) service to the Midwest Independent Transmission System Operator (“MISO”) for at least 700MW of wind energy as soon as permissible under the MISO Transmission and Energy Markets Tariff (“TEMT”) and obtain for utility-owned projects or cooperate with generators to obtain timely MISO interconnection service.

- (5) Applicants must designate the new wind resources required under these conditions as Network Resources pursuant to the MISO TEMT as soon as such designation may appropriately be made.
6. An additional condition to require updates on generation outlet capacity would increase the cost-effectiveness of the Brookings Project.

Viewed as support for the initial 700Mw of wind generation support, the Brookings Project raises some questions about costs. The Brookings Project, without upsizing, would increase generation outlet capacity on the Buffalo Ridge from 1,200MW to 1,900MW and provide an initial 700MW of additional capacity for a cost of \$600 to \$665 million, at cost of at least \$857,000 per megawatt.

However, this cost per megawatt for the Brookings Project reflects not an absolute limit to capacity, but a point where the transmission system won't support more generation at an n-1 contingency reliability level unless and until additional transmission investments are made.²⁹⁰ The number of megawatts that could be transmitted by the 345 kV Brookings line based on the thermal limit of transmission exceeds 2,000MW.²⁹¹ The 700MW limit of generation outlet capacity described for the Brookings Project is due to the expenses of next step of system upgrades.²⁹²

Other limitations on the transmission system that constrain generation outlet capacity from the Brookings Project may be addressed by non-certificate of need improvements, such as reconductoring or transformer upgrades.²⁹³ In addition, substantial projects, such as upgrading the Minnesota Valley-Blue Lake line from 230 kV to 345 kV as discussed in the "Corridor Study," could increase generation outlet capacity from the western part of Minnesota, including the Buffalo Ridge, by 1,100 MW beyond what is in the Application for the Brookings Project, for a total generation capacity exceeding 3,000 MW.²⁹⁴

²⁹⁰ Tr. V. 11, pp. 30-31 (Alholinna).

²⁹¹ Tr. V. 7, p. 57, ll. 24-25 (Kline); Ex. 76, p. 3 (Response to IR 3 of Joint Intervenors).

²⁹² Tr. V. 9, pp. 162-163 (Alholinna).

²⁹³ Tr. V. 9, pp. 162-163 (Alholinna); The specific limits causing the problem included the Wilmarth-Lakefield 345kV line, the Brookings 345 kV to 115 kV transformer and the Eden Prairie 345 kV to 115 kV transformer.

²⁹⁴ Tr. V. 11, pp. 40, 81-82 (Alholinna); Ex. 104, p. 14 (Alholinna Direct).

CETF's condition (6) for the Brookings Project, described below, requires Applicants to update information regarding outlet capacity when transmission improvements are planned. If transmission system upgrades alter the generation outlet capacity of the Brookings line, the Commission would have an opportunity to decide whether or not to modify the conditions to cost-effectively support additional renewable energy.²⁹⁵ CETF's proposed condition 6 for the Brookings Project is as follows:

- (6) Applicants must make timely compliance filings if additional planned transmission improvements or generation additions subsequent to the verification in condition (2) will affect generation outlet capacity from the Buffalo Ridge and/or in other areas served by the Brookings Project.

7. CETF's Proposed Conditions are consistent with recent MISO reforms.

On August 25, 2008, the Federal Energy Regulatory Commission ("FERC") conditionally approved MISO's proposal to reform the generator interconnection queue process.²⁹⁶ MISO queue reforms approved in this FERC Order support the application of the proposed conditions and their emphasis on wind power purchase agreements.²⁹⁷

The most important change reflected in the MISO queue reform process is the requirement of milestones. Now projects will achieve interconnection on the basis of first-ready, first interconnected rather than first-in first-interconnected.²⁹⁸

MISO's proposals for "definitive planning" milestones were adopted in the August 2008 FERC Order and are detailed in MISO's current Business Practices Manual: After MISO completes its System Planning and Analysis Review, an interconnection customer is required to do *one* of the following: (1) provide security reasonably acceptable to the Transmission Provider for the cost of network upgrades; (2) execute a power off-take agreement or be designated a network resources; or (3) demonstrate that generation turbines have been ordered.²⁹⁹

²⁹⁵ Tr. V. 20, pp. 170-171 (Ellison).

²⁹⁶ Ex. 208 (FERC Order Granting MISO Queue Reform, August 25, 2008).

²⁹⁷ Tr. V. 16, p. 157 (Michaud).

²⁹⁸ Tr. V. 20, pp. 19-20 (Ellison).

²⁹⁹ Ex. 208, p. 27 (FERC Order Granting MISO Queue Reform, August 25, 2008); *see also* Ex. 209, p. 14 (MISO Business Practices Manual updated 9/11/08).

Under the new MISO process, a PPA is needed to enter the definitive planning phase that puts a project on a faster track. Unless it is a utility-owned project, purchase of turbines or commitment to costs for transmission upgrades are rarely made without a PPA.³⁰⁰ Realistically the only way for a non-utility wind project to meet the new MISO milestones is a PPA.³⁰¹

As Mr. Ellison explained, compliance with the new MISO milestones permits projects to move forward along the queue and projects with PPAs can jump ahead of projects without agreements.³⁰² Applicants will be able to negotiate with the entire range of projects in the queue or even not in the queue and assist projects in moving through interconnection by virtue of the PPA. The concern that Applicants might have to choose among only those projects with high queue positions of that conditions might confer market power are misplaced.³⁰³ Mr. Ellison summarized the positive relationship between MISO queue reform and the proposed conditions:

In my experience, few projects would put up a letter of credit for the upgrades or order turbines without having a power purchase agreement or some guaranteed purchaser for the power. So as a practical matter, for most projects, this milestone requires a power purchase agreement or ownership by the load serving entity. That means that the condition I propose requiring power purchase agreements or ownership by the load serving entity for the capacity of these lines is even more important and more workable than it was previously.³⁰⁴

8. CETF's proposed conditions will not conflict with open access, delay the Brookings Project or impede competition.

In the 825MW of wind proceeding, applicant Xcel Energy claimed that the conditions would “violate federal law, impede wind development, and jeopardize the Company’s ability to proceed with construction in light of the uncertainty it would create regarding rate recovery of the cost of a potentially unusable investment.”³⁰⁵ None of these events occurred with reference to the 825MW Wind Proceeding. There was no

³⁰⁰ Tr. V. 21, pp. 13-14 (Ellison).

³⁰¹ Tr. V. 16, pp. 158-160 (Michaud); the cited elements of Ex. 155, pp. 11-13 (MISO Business Practices Manual) were not changed in the FERC Order Granting MISO Queue Reform, Ex. 208.

³⁰² Tr. V. 20, pp. 104-105 (Ellison).

³⁰³ Tr. V. 20, pp. 182-183 (Ellison).

³⁰⁴ Tr. V. 20, pp. 20-21 (Ellison).

³⁰⁵ Ex. 214, p. 7 (825MW Wind Order).

determination of a violation of federal law. Conditions did not impede wind development; in fact they moved wind forward.³⁰⁶

In 2003, the Commission granted certificates of need in the 825MW Wind Proceeding, approving the first set of major transmission improvements in the Buffalo Ridge region. These facilities were energized in spring 2008, and by the end of 2008 it is expected that these facilities will already be fully subscribed for wind energy.³⁰⁷

Mr. Alholinna agreed that conditions on granting the certificate of need in the 825MW Wind Proceeding did not prevent facilities from being constructed and put in service as planned.³⁰⁸ Xcel Energy's project manager, Grant Stevenson, recalled no discussion about wind resource acquisition conditions influencing construction of the 825 MW wind transmission project or interfering with the completion of the projects.³⁰⁹

As was the case with the Order issued by the Commission in the 825MW Wind Proceedings, nothing in Ellison's proposed conditions is inconsistent with FERC policies for open access – the conditions fully comply with the open access rules of MISO and the Federal Power Act and are consistent with FERC policies, rules and regulations.³¹⁰

Applicants' assertion that imposition of conditions for the Brookings Project would impede competition and increase prices is not credible, given the extent of wind generation interest in the area to be served by the Project as well as the MISO reforms, which give Applicants more flexibility in contracting.

MISO witness Jeffrey Webb testified that there are nearly 60 generator interconnection requests along or near the counties where the Brookings line is intended to be routed, with over 7,460 MW specifically within the counties along the preliminary Brookings route.³¹¹ Mr. Ellison estimated that at least 4,000MW of projects proposed and currently in the MISO queue could reasonably use the 700MW of firm capability that would be provided by the Brookings Project.³¹² Mr. Grivna agreed that interest in wind

³⁰⁶ Tr. V. 20, pp. 164-165 (Ellison).

³⁰⁷ Ex. 104, p. 3 (Alholinna Direct); Tr. V. 8, p. 75-77 (Stevenson); Tr. V. 11, p. 17 (Alholinna).

³⁰⁸ Tr. V. 10, p. 64 (Alholinna).

³⁰⁹ Tr. V. 8, pp. 77-78 (Stevenson).

³¹⁰ Tr. V. 21, pp. 25-26, 69-70 (Ellison).

³¹¹ Ex. 56, p. 33 (Webb Direct).

³¹² Tr. V. 20, pp. 91-93 (Ellison).

generation in the MISO queue in the area of the Brookings Project exceeds the 700MW of additional generation outlet capacity it provides.³¹³

If the Brookings Project provided generation access at the Lyon County and Franklin substations as well as on the Buffalo Ridge, generation outlet capacity from the Brookings Project would increase slightly rather than diminish.³¹⁴ As Mr. Alholinna testified, the Brookings Project could provide generation opportunities in a wide region, including dispersed renewable generation.³¹⁵

To comply with the conditions proposed by CETF and by Mr. Ellison, Applicants could contract with wind energy projects already in the queue, rather than wind projects not yet in queue.³¹⁶ Due to this high level of potential supply, Mr. Ellison explained, conditions proposed for the Brookings Project will not confer market power or result in raised prices. There will be substantial competition under the conditions.³¹⁷

Applicants also expressed concerns about entering into PPAs two years prior to the expected in-service date of transmission and about possible expiration of the wind production tax credit “(PTC)” in January of 2009.³¹⁸ The condition requiring PPAs two years in advance of the proposed transmission in-service date is appropriate. Two years is a reasonable number for the development cycle of a wind project, including time for interconnection, financing and land use permitting as well as construction.³¹⁹ It is common for utilities to execute power purchase agreements with generators two years or more before the proposed online date for that generator. Contracting in advance allows time for facility licensing, financing and construction.³²⁰

The wind PTC supports, rather than undermines, conditions requiring advance contracting of wind generation for the Brookings Project. The wind production tax credit is a significant factor in the economics of wind projects in the United States.³²¹ Historically, when the production tax is renewed, there has been a rush to get generators

³¹³ Tr. V. 12, p. 32, ll. 6-10 (Grivna).

³¹⁴ Tr. V. 10, pp. 160-161 (Alholinna).

³¹⁵ Tr. V. 10, p. 162 (Alholinna).

³¹⁶ Tr. V. 15, pp. 24-25 (Alders).

³¹⁷ Tr. V. 20, p. 94, ll. 1-6 (Ellison).

³¹⁸ Ex. 132, pp. 30-31 (Alders Rebuttal).

³¹⁹ Tr. V. 21, p. 13, ll. 14-16 (Ellison).

³²⁰ Ex. 206, p. 18 (Ellison Surrebuttal).

³²¹ Tr. V. 20, p. 71, ll. 5-11 (Ellison).

on line before its expiration. The Energy Improvement and Extension Act of 2008 enacted an extension of the wind production tax credit until January 1, 2010.³²² Xcel Energy’s 2007 Renewable Energy Plan and GRE’s 2008 Resource Plan support the strategy of purchasing wind in advance of RES milestones in order to take advantage of the production tax credit for wind and lower overall customer costs.³²³

F. Upsizing CapX2020 Facilities for a Future Second 345 kV Circuit is Not Needed and Should Be Denied.

There is a current financial cost to upsize the CapX2020 projects to install a second 345 kV circuit. That cost would be \$55 to \$60 million for just the Brookings Project or \$200 million for the three CapX2020 projects proposed by Applicants.³²⁴ In addition, upsizing the CapX2020 would increase the visual and construction impacts of the 345 kV projects.

Higher poles are needed for the higher voltage of a double circuit 345 kV line to provide more clearance to the ground under national electric safety codes as well as the standards set by most utilities.³²⁵ As compared to the structures for a single-circuit 345 kV line, double-circuit compatible structures would be approximately 40 feet taller.³²⁶ As Mr. Stevenson explained, both the poles and the foundations for the upsizing option would require greater strength and size.³²⁷

The pole structure for Applicants’ upsized option would have an asymmetrical appearance. At the time of construction of a “double-circuit compatible” structure, one 345 kV power line along with its davit arms would be strung. The davit arms for a second 345 kV power line and the circuit itself would only be strung at a later date, to the extent that Applicants showed that the second circuit was needed.³²⁸

³²² See e.g. Tr. V. 15, pp. 42-43 (Alders). Extension of PTC in *Energy Improvement and Extension Act of 2008*, H. R. 1424 Title I, Subtitle A, Sec. 101 Renewable Energy Credit, adopted as part of H.R. 1424, *Emergency Economic Stabilization Act of 2008*, see http://www.house.gov/apps/list/press/financialsvcs_dem/essabill.pdf.

³²³ Ex. 139, p. 43 (Xcel Energy Renewable Energy Plan); Ex. 113, pp. 9, 73 (GRE Resource Plan).

³²⁴ Ex. 91 (Stevenson Chart).

³²⁵ Tr. V. 8, pp. 87-88 (Stevenson).

³²⁶ Ex. 1, pp. 2.12 (Figure 2-5), 2.13 (Figure 2-7) (Application).

³²⁷ Tr. V. 8, p. 90 (Stevenson).

³²⁸ Ex. 121, p. 10 (Grivna Rebuttal).

As with any other aspect of a certificate of need proposal, to approve the upsizing alternatives it must be demonstrated that the additional costs of a double-circuit ready structure are needed pursuant to Minnesota Statutes 216B.243, subd. 3 and Minnesota Rules 7849.0120, subp. A.

There is no evidence in this record justifying the costs and impacts associated with 345 kV double-circuit capable upsizing of the CapX2020 projects. Having had the opportunity to fully consider all the testimony that's been filed in this matter, including the work that was done to come forward with the upsizing alternative, Mr. Grivna still agreed with the statement that the three CapX2020 projects as proposed in application are sufficient to meet load serving and generation outlet needs outlined in the application.³²⁹

There is uncertainty about how the future transmission system may develop both internal and external to Minnesota and whether a need to add a second circuit will materialize in the future.³³⁰ Factors that contribute to this uncertainty include where other transmission may develop, the locations of generation proposed, how it may interconnect, load levels, generation technology innovations, climate change regulations, social policy issues.³³¹ The electric industry is in a period of change. As a result, future growth patterns and future long-term needs could be altered.³³²

Significant additional transmission infrastructure would need to be constructed before any benefits of the larger capacity lines described in the upsized proposal could be realized.³³³ Neither the costs, the need nor the timing for these future transmission projects can be predicted at this time.³³⁴

One would need to find out where the future growth was in order to determine if costs for a second 345 kV circuit and additional associated transmission infrastructure would be greater or less than other potential transmission enhancements to address that growth.³³⁵ Given the uncertainty about how the future transmission system may develop, both internal and external to Minnesota, it is possible that a solution to the future load growth needs might involve a combination of generation and transmission or entail

³²⁹ Tr. V. 12, p. 91, ll. 10-16 (Grivna); Ex. 121, p. 9 (Grivna Rebuttal).

³³⁰ Ex. 121, p. 33 (Grivna Rebuttal).

³³¹ Tr. V. 12, pp. 14-15 (Grivna).

³³² Tr. V. 11, p. 153 (Grivna).

³³³ Ex. 121, p. 16 (Grivna Rebuttal).

³³⁴ Tr. V. 11, p. 152 (Grivna).

³³⁵ Tr. V. 12, pp. 74-75 (Grivna).

upgrades in different alignments or different sizes than the proposed 345 kV corridor upsize.³³⁶

The performance of the upsizing option has not been verified with a load flow study or by other means. Without specific information on generation sites or conditions that would warrant using the capacity, there are no tools using scientific methods that could evaluate the performance of the upsize option.³³⁷

Even if only the Brookings Project were considered, it would not be appropriate to begin a study now to determine whether the Brookings facility in particular should be upgraded to a double-circuited 345 kV line.³³⁸ Limits on the current capacity of the Brookings Project, as previously explained, result from other transmission system constraints, not the lack of capacity of a single-circuit 345 kV line.

In future years, double circuiting of 345 kV lines may provide less reliability than other transmission choices and may create electric system stability concerns. In general, two circuits using two rights of way at otherwise equivalent end points would have greater reliability than two circuits on the same structure.³³⁹ Mr. Grivna explained that double circuiting either the Fargo or the Brookings line could cause electric system stability concerns. Stability concerns include voltage swings, which may result in problems including retaining load, problems with generation, and cascading outages.³⁴⁰

Given current costs and impacts to upsize the 345 kV lines, speculative and unquantifiable benefits, lack of evidence on the performance of the upsize option and potential concerns about double-circuiting, no need has been demonstrated for double-circuiting the CapX2020 345 kV transmission lines.

G. Additional Considerations Support CETF Recommendations on Issuance, Denial and Imposing Conditions on Certificates of Need.

1. No other testimony demonstrates a need for the CapX2020 projects to provide community reliability.

³³⁶ Tr. V. 12, pp. 75-76 (Grivna).

³³⁷ Tr. V. 11, p. 166 (Grivna); Ex. 121, p. 15 (Grivna Rebuttal).

³³⁸ Tr. V. 12, p. 32 (Grivna, 7/29/08).

³³⁹ Tr. V. 5A, p. 49, ll. 4-8 (Webb).

³⁴⁰ Tr. V. 12, pp. 24-25 (Grivna).

Although various witnesses asserted community reliability needs for the La Crosse and Fargo Projects, these witnesses often had incomplete information, based their assertions on inapplicable NERC standards or failed to present sufficient information on the record from which it could be judged if their assumptions were reasonable.

Joint Intervenors' witness Mr. Schedin acknowledged that when he evaluated sub-area community reliability needed he used the data presented in the Application and did not know how much conservation was included in estimating load growth.³⁴¹ He did not test whether reducing load would address system deficiencies.³⁴²

Mr. Schedin didn't do a detailed evaluation of the need for the La Crosse line given the construction and operation of the RIGO projects; he just looked at it from a cursory point of view.³⁴³ Mr. Schedin did not look at or know of upgrades in the La Crosse area that had been built since the study was done.³⁴⁴

Testimony from MISO witness Mr. Webb failed to demonstrate that either the La Crosse or the Fargo project were needed for community reliability. All of the reliability scenarios described in Mr. Webb's prefiled testimony for the Rochester area are NERC Category C (n-2) contingencies representing combinations of system failures.³⁴⁵ MISO also did not analyze the impacts of the RIGO projects on Rochester reliability.³⁴⁶

The reliability scenarios described in Mr. Webb's prefiled testimony for the La Crosse area are also all NERC Category C (n-2 or n-3) events representing combinations of system failures.³⁴⁷ The French Island generators 3 and 4 are assumed to be turned off for all overloading conditions in Table 1 of Mr. Webb's prefiled testimony.³⁴⁸

The MISO CapX study that Mr. Webb referenced in his testimony should be given little if any weight. The MISO study was not provided in the record³⁴⁹ and was not available in narrative draft form at the time of Mr. Webb's testimony.³⁵⁰ In cross-

³⁴¹ Tr. V. 19, pp. 162-163 (Schedin).

³⁴² Tr. V. 19, pp. 177-178 (Schedin).

³⁴³ Tr. V. 19, p. 178 (Schedin).

³⁴⁴ Tr. V. 19, pp. 179-180 (Schedin).

³⁴⁵ Tr. V. 5A, p. 51 (Webb); Ex. 56, pp. 27-28 (Webb Direct).

³⁴⁶ Tr. V. 4, p. 128 (Webb).

³⁴⁷ Tr. V. 5A, p. 58 (Webb); Ex. 56, p. 30 (Webb Direct).

³⁴⁸ Tr. V. 5A, p. 88 (Webb); Ex. 56, p. 30 (Webb Direct).

³⁴⁹ The MISO study was different from those provided by Applicants in Apx. A-1 through A-4 of the Application. Tr. V. 5A, p. 80 (Webb).

³⁵⁰ Tr. V. 5B, p. 10 (Webb).

examination, Mr. Webb could not recall what the specific assumptions were for annual peak summer load growth in either the Rochester or the La Crosse area³⁵¹ or for annual peak winter load growth in the Red River area or for any of the specific communities in the MISO study for the Fargo line.³⁵² Mr. Webb did not know which conservation and demand-side management strategies were included in any of the load growth forecasts used in the MISO CapX studies.³⁵³

Although Applicants repeatedly refer to MISO's conclusions as those of an "independent" entity, the degree of MISO's independence from Applicants is subject to question. MISO is a FERC-approved regional transmission organization. Its members are transmission owners and market participants of one form or another.³⁵⁴ Applicants Xcel Energy and GRE and most of the other utilities participating in the CapX2020 initiative are members of MISO, while none of the other parties to this proceeding are among its membership.³⁵⁵ It would not be surprising if MISO's perspectives were aligned with those of its members.

Mr. Ham's testimony that the CapX2020 projects were needed in order to improve community reliability was not based on his independent assessment, but on conclusions of MISO.³⁵⁶ The effects of new and planned transmission improvements that were not part of the original Application were not included in the OES analysis.³⁵⁷ Specifically, effects of RIGO transmission lines on reliability in Rochester, effects of lower voltage transmission construction in the La Crosse area and effects of the planned Bemidji 230 kV transmission line on reliability in the Red River Valley were not considered in the OES analysis.³⁵⁸

³⁵¹ Tr. V. 5A, pp. 83-84 (Webb). This information was not provided in prefiled testimony either, Ex. 56 (Webb Direct).

³⁵² Tr. V. 5A, pp. 80-82 (Webb). This information was not provided in prefiled testimony either. Ex. 56 (Webb Direct).

³⁵³ Tr. V. 5A, p. 84 (Webb).

³⁵⁴ Tr. V. 5A, p. 103 (Webb).

³⁵⁵ Ex. 61 (MISO Membership).

³⁵⁶ Tr. V. 23, p. 161 (Ham).

³⁵⁷ Tr. V. 21, pp. 95-96 (Davis).

³⁵⁸ Tr. V. 21, pp. 95-96, 121-122 (Davis); Tr. V. 25, p. 69 (Rakow).

2. No other justifications have been provided for the CapX2020 projects.

Although OES witnesses raised numerous issues pertaining to transmission plans and the value of transmission, none of these ancillary comments establish a need for the CapX2020 transmission projects.

OES witness Hwikwon Ham’s testimony that the CapX2020 Projects would have a “positive impact” in meeting the State’s energy need³⁵⁹ wasn’t intended to select the CapX2020 transmission as a specific project. Mr. Ham explained, “I just stated it will have a positive impact. I didn't say it is [the] best option.”³⁶⁰

Although an “islanding” event jeopardizing reliability in September 2007 was discussed in Mr. Ham’s testimony,³⁶¹ Mr. Ham did not testify that the CapX projects are needed to solve the engineering problems that resulted in this “islanding” event.³⁶² Similarly, although his testimony described adverse impacts on energy costs resulting from a “narrowly constrained area” in parts of Minnesota and Iowa,³⁶³ Mr. Ham did not testify that the CapX projects would address congestion from or provide a solution to this “narrowly constrained area”³⁶⁴

3. Consideration of the Greenhouse Gas Emissions Control Statute supports CETF’s recommendations.

CETF’s recommendation to deny certificates of need for the La Crosse Project and segments of the Fargo line extending into North Dakota and to condition certificates of need for the Brookings Project on purchase of wind energy are supported by consideration of the Greenhouse Gas Emissions Control Statute pursuant to Minnesota Statutes § 216B.243, subd. 3(7) as well as by the detailed analysis of need provided above.

Minnesota’s Greenhouse Gas Emissions Control (“GGH”) statute and the Final Report of the Minnesota Climate Change Advisory Group require an analysis of the

³⁵⁹ Ex. 257, p. 10 (Ham Direct).

³⁶⁰ Tr. V. 23, p. 26 (Ham).

³⁶¹ Ex. 257, p. 6 (Ham Direct).

³⁶² Tr. V. 23, p. 132 (Ham).

³⁶³ Ex. 257, p. 13 (Ham Direct).

³⁶⁴ Tr. V. 23, p. 131 (Ham); Tr. V. 24, pp. 85-86 (Ham).

greenhouse gas emissions (GHG) impacts of the CapX 2020 transmission line.³⁶⁵ Dr. Rakow estimated the construction impacts of carbon dioxide at 500,000 tons, based on 727 tons of CO₂ per mile of construction and 700 miles of transmission and using data supplied from a transmission project in California.³⁶⁶ To the extent that it can be ensured that the CapX2020 transmission lines will provide generation outlet capacity for wind energy, the adverse greenhouse gas emissions impact from construction activities would be quickly outweighed.

More critically, the CapX2020 Projects create a risk that a transmission system approved by the Commission and paid for by Minnesota ratepayers would circumvent the provisions of the Minnesota GGH statute establishing a moratorium on the construction of new coal plants.³⁶⁷ Although the GGH statute moratorium on constructing additional coal plants applies to power plants built in Minnesota and the importation of power to be used by Minnesota consumers, other Midwestern states have no similar law preventing importation of energy from new coal plants.³⁶⁸ Other states within MISO, including North and South Dakota, Wisconsin and Iowa also do not have a moratorium on the construction of new coal plants.³⁶⁹

Mr. Alders explained that the Minnesota Greenhouse Emissions statute would preclude interconnection of coal plants in South Dakota or North Dakota with the CapX projects if energy is to be delivered to Minnesota, but it would not preclude the interconnection if energy is to be delivered outside Minnesota, further east to Wisconsin, Illinois, or Indiana.³⁷⁰ As OES witness Dr. Rakow explained, “The line clearly ends in La Crosse for the La Crosse project so it's going to be serving Wisconsin load.”³⁷¹

³⁶⁵ Minn. Stat. §216H.02; Minnesota Climate Change Advisory Group Final Report, Chapter 7-6, <http://www.mnclimatechange.us/ewebeditpro/items/O3F16700.pdf>

³⁶⁶ Tr. V. 25, pp. 18-19 (Rakow); Ex. 303, p. 32 (Rakow Rebuttal); see ALJ Proposed Decision Denying a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, p. 163, *In the Matter of the Application of San Diego Gas & Electric Company for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project, California Public Utilities Commission*, Docket No. A.06-08-010, (October 31, 2008) (<http://docs.cpuc.ca.gov/efile/PD/93071.pdf>)

³⁶⁷ Minn. Stat. §216H.03, subd. 2.

³⁶⁸ Tr. V. 15, p. 102 (Alders).

³⁶⁹ Tr. V. 24, p. 91 (Ham).

³⁷⁰ Tr. V. 25, p. 32 ll. 1-17 (Rakow).

³⁷¹ Tr. V. 25, pp. 73 ll.23-25 (Rakow).

Dr. Rakow stated that the CapX Projects would reduce line losses and costs for importing power across Minnesota from the Dakotas to Wisconsin.³⁷² If the CapX projects facilitate the ability of Wisconsin utilities to import power from the Dakotas, the greenhouse gas law would not place any restrictions on that purchase of coal.³⁷³

If the three proposed CapX 2020 Projects are built as Applicants proposed, a coal plant in South or North Dakota seeking to serve load in Wisconsin or further east could be entitled to transmission service under MISO rules. It would also be possible for a coal plant in South or North Dakota to sell directly into the MISO market without a purchase by a designated load serving entity.³⁷⁴

Measured individually by the criteria of the need for each project, the complete record in this proceedings supports denial of the La Crosse Project certificated of need, approval of the Fargo Project only as far as the City of St. Cloud and approval of the Brookings Project with conditions to ensure its use for renewable wind energy capacity. Consideration of the Greenhouse Gas Emissions Control statute supports these recommendations as well.

4. Economic conditions reinforce concerns about forecasts of demand growth.

Current recessionary economic conditions lend further support to CETF's conclusions described in detail above that neither Applicants' predictions of system-wide growth in demand nor Applicants' predictions of local load growth in the local communities of Rochester, La Crosse, the Red River Valley or Alexandria justify issuance of certificates of need for the CapX2020 projects. Although some evidence of economic downturn was already reflected in the CapX2020 record, the ALJ can take judicial notice of the fact that economic conditions have worsened since the close of hearings and a recession has been officially declared.

Applicants' forecasting witness, Mr. Lacey, testified that there is a positive correlation between income and energy use. The less money people have, the less energy

³⁷² Tr. V. 25, pp. 85 l.16 - 86 l.3 (Rakow).

³⁷³ Tr. V. 15, p. 103 (Alders).

³⁷⁴ Tr. V. 21, pp. 45-46 (Ellison). See also Tr. V. 17A, p. 30 (Michaud).

they consume.³⁷⁵ Mr. Michaud concurred, noting that economic recession can lower electrical consumption.³⁷⁶

Even in July, Mr. Alders acknowledged that we are in a “downturn” of the economy and that the anticipated demand in 2020 may not reach the peak projected by Applicants.³⁷⁷ In September, Mr. Ham testified that we are in a recession and that a recession will have impact on load growth extending through however long the recession may be. The impact of the recession on load growth will depend on how long and how deep the recession might be.³⁷⁸

Although generation outlet capacity for wind on the Buffalo Ridge area may be needed to meet RES milestones even in an economic downturn, arguments that the La Crosse Project and the Fargo Project further west of St. Cloud are necessary to meet growth in demand are further weakened by current and realistic economic information.

H. Additional Conditions Should Attach to Any Certificates of Need in this Proceeding – for C-BED and to Reduce Risks to Ratepayers and Citizens.

1. Conditions for community-based energy development.

Minnesota certificate of need law requires consideration of State policies pertaining to community based energy development (“C-BED”) projects. Minn. Stat. §216B.243, subd. 3(7). Minnesota statutes establish a policy “to optimize local, regional, and state benefits from renewable energy development and to facilitate widespread development of community-based renewable energy projects throughout Minnesota.” Minn. Stat. § 216B.1612, subd.1.

Minnesota certificate of need rules also require consideration of whether “the proposed facility, or a suitable modification of the facility, will provide benefits to society in a manner compatible with protecting the natural and socioeconomic environments.” Minn. R. 7849.0120, subp. C(2).

³⁷⁵ Tr. V. 4, p. 18 (Lacey).

³⁷⁶ Tr. V. 16, p. 70 (Michaud).

³⁷⁷ Tr. V. 15, p. 119 l. 19 – p. 120 l. 6(Alders). Since 7/30/08, the date of this testimony, economic conditions have worsened and a global as well as United States recession impact is likely to have an unprecedented affect on projected demand.

³⁷⁸ Tr. V. 23, p. 126 ll. 10-20 (Ham).

Applicants acknowledge that Minnesota has made community-based energy development a public policy priority.³⁷⁹ It is also undisputed that community based renewable energy projects have a greater positive impact on local economies than do other forms of ownership.³⁸⁰ In addition, in these CapX2020 proceedings, Applicants have placed evidence in the record suggesting that C-BED projects will be compromised if the Commission requires conditions similar to those in the 825MW Wind Proceedings to ensure that the Brookings Project is, in fact, used to support wind energy. On the basis of policy, economic benefit and the particular risks suggested by Applicants in this case, CETF believes that conditions requiring Applicants to purchase C-BED are appropriate in this proceeding.

Dr. Kildegaard testified, “There is a clear consensus that community wind ownership provides greater local economic benefits than corporate wind ownership.”³⁸¹ Studies cited by Dr. Kildegaard have shown that community-based wind projects had the greatest local economic impact, by a wide margin. Job creation was found to be significantly higher when projects were locally funded and spending effects on the local economy were also found to be very significantly higher.³⁸² Data from a recent Minnesota study showed that even if construction impacts are assumed to be equivalent, community wind can have 5 times the economic value on local value added and 3.4 times the impact on local job creation relative to a corporate-owned development.³⁸³

Mr. Alders testified that facilitating community-based ownership is in the public interest because with ownership on the part of people in the community, there are more opportunities for revenue to go into those communities.³⁸⁴ Mr. Alders testified that the 825MW Wind Proceeding Order included conditions for C-BED projects to serve a public interest on the part of the State of Minnesota and facilitate community-based ownership as part of the mix.³⁸⁵

³⁷⁹ Tr. V. 1B, pp. 59-60 (Rogelstad).

³⁸⁰ Ex. 166, p. 16 (Kildegaard Direct).

³⁸¹ Ex. 166, p. 15 ll.28-29 (Kildegaard Direct).

³⁸² Ex. 166, p. 16 (Kildegaard Direct).

³⁸³ Ex. 168, p. 21 (Community vs. Corporate Wind Study);

³⁸⁴ Tr. V. 13, p. 108 (Alders).

³⁸⁵ Tr. V. 13, pp. 107-108 (Alders).

Mr. Alders testified that Xcel Energy has announced an intention to deploy 500MW of small community based wind projects by 2010 and has issued a request for proposals (RFP) on June 13, 2008 to fill some or all of this commitment.³⁸⁶ The RFP for small community wind is intended to focus on areas that are less transmission constrained than the Buffalo Ridge,³⁸⁷ and projects wouldn't necessarily have to use the Brookings transmission line.³⁸⁸

However, Mr. Alders also suggested that compliance with conditions to ensure use of renewable energy on the Brookings "would likely require modification" of Xcel's strategy to deploy 500MW of C-BED projects.³⁸⁹ When asked how conditions on the Brookings line would affect achievement of this 500-megawatt goal, Mr. Alders said,

It's very possible that we would have to focus on the development of wind power at those six busses on Buffalo Ridge to address the 700 megawatts of system capacity created. And, thus, it may reduce our ability to develop smaller projects elsewhere in a timely manner.³⁹⁰

Mr. Alders explained that Xcel would still meet 2012 RES milestones, but there would be a question about what kind of power that gets developed to meet the shorter-term milestones.³⁹¹

In order to prevent contracts for the Brookings line from serving as a reason to defer C-BED projects, as well as to optimize socioeconomic benefits of renewable energy in keeping with State policy, conditions incorporating C-BED development into these CapX2020 proceedings are warranted.

NAWO/ILSR have suggested that a condition on any certificate of need in this proceeding be that the CapX2020 utilities in the aggregate sign power purchase agreements for 600 MW of dispersed C-BED projects within the next two years.³⁹² CETF's proposed conditions regarding C-BED seek to ensure that Applicants sign at least 300 MW of dispersed C-BED projects by 2012 if viable C-BED projects are available.

³⁸⁶ Ex. 132, p. 25 (Alders Rebuttal).

³⁸⁷ Tr. V. 15, p. 50 (Alders).

³⁸⁸ Tr. V. 13, p. 166 (Alders).

³⁸⁹ Ex. 132, p. 25 ll. 10-11 (Alders Rebuttal).

³⁹⁰ Tr. V. 13, p. 165 ll. 1-6 (Alders).

³⁹¹ Tr. V. 13, p. 165 ll. 12-15 (Alders).

³⁹² Ex. 115, p. 4 (Michaud Surrebuttal); Tr. V. 17A, p. 17 (Michaud).

2. Conditions to protect ratepayers.

This record provides little information as to the effects that certification of the CapX2020 projects may have on ratepayers, either under the ownership structure described in the CapX2020 Project Development Agreements³⁹³ or in the potential situation that CapX2020 assets are transferred to non-regulated entities at some future date.

In their Request for Exemption from having to provide information on system revenue requirements pursuant to Minn. R. 7849.0270, subp. 2(E), Applicants asserted that it was not possible to provide information on system revenue requirements or rate impacts because the ownership interests in the CapX projects had not been finally determined.³⁹⁴ The Commission relied on that representation in granting Applicants' exemption from disclosure of information required under Minnesota rules, over the objections of several parties.³⁹⁵ The Commission further stated in its Order granting the exemption that "the Commission fully expects the parties to generate estimates of rate impacts at some point in the analysis."³⁹⁶

The Applicants did not provide any evidence of the rate impacts of the CapX2020 projects on any customers of any utility at any time. The Office of Energy Security provided a single page of analysis one day before the close of hearings in this matter.³⁹⁷ Dr. Rakow noted that this exhibit uses "a very simple method" to give "a quick and dirty estimate" of the potential impacts on rates.³⁹⁸

Even the cursory look at the OES analysis afforded by its last-minute presentation disclosed some concerns. OES analysis assumed that all three CapX projects would be classified as Baseline Reliability Projects. If a project were generated as a Generation

³⁹³ Ex. 1, Apx. B-2, B-3, B-4 (Application).

³⁹⁴ In the Matter of the Application of Great River Energy, Northern States Power Company (d/b/a Xcel Energy) and Others for a Certificate of Need for the CapX-345 kV Transmission Project, Docket No. ET-2, E-002 et al./CN-06-1115 (hereinafter "CapX Certificate of Need Proceeding/CN-06-1115"), *Request for Exemption from Certain Certificate of Need Data Requirements and Designation of Applicants for Certificate of Need Filing* (October 23, 2007).

³⁹⁵ CapX Certificate of Need Proceeding/CN-06-1115, *Order Designating Applicants and Setting Filing Requirements* (June 4, 2007), p. 14.

³⁹⁶ *Id.*, p. 14.

³⁹⁷ Ex. 310 (OES Revenue Requirement Chart), provided by Steve Rakow on 9/17/08.

³⁹⁸ Tr. V. 25, pp. 48-49 (Rakow).

Interconnection Network Upgrade, costs to ratepayers would increase by approximately 10%.³⁹⁹ The OES analysis didn't calculate revenue requirements for proposed upsizing.⁴⁰⁰ OES forecasts used to estimate costs for ratepayers in Ex. 310 did not include the 1.5% conservation requirement. Dr. Rakow acknowledged that, to the extent there is more conservation, cost per kilowatt-hour will rise.⁴⁰¹ For Dairyland and RPU, whatever their investment is, it will be borne entirely by their retail customers.⁴⁰² OES did not estimate the rate impact for RPU customers of the CapX2020 projects.⁴⁰³

Perhaps more significant, given the flexibility in the potential ownership structure of the CapX2020 projects, there is little evidence in this record regarding cost recovery for the projects or how revenues might be allocated to reimburse costs to ratepayers. Mr. Ham testified that with a regulated utility, regulators can ensure that a set amount of revenues earned by the utility are allocated to ratepayers to pay back any costs charged to ratepayers.⁴⁰⁴

No testimony suggested that ratepayers would have similar protection if the CapX2020 assets were transferred to a non-regulated entity. Dr. Rakow testified that transfer to a non-regulated entity would not require a hearing and might not even require the compliance filing offered by Applicants.⁴⁰⁵

CETF is concerned that a compliance filing alone would not protect ratepayers in the event of a transfer of transmission line assets to a non-regulated entity. A proposed condition requiring Commission approval before such transfer of assets would provide an opportunity to ensure that ratepayers are treated fairly in any transfer of ownership.

3. Conditions to reduce power line impacts to land owners and farm workers.

Practitioners in the field of energy development or regulation may perceive power line impacts as routine. But both the evidence from the administrative hearing and the public record in hearings and comments underscores the risk of harm to property interests and health that are inherent in high voltage transmission. Noise and visual impacts may

³⁹⁹ Ex. 1, Apx. D-5, p. 10 (Application).

⁴⁰⁰ Tr. V. 25, p. 63 (Rakow).

⁴⁰¹ Tr. V. 25, p. 60 (Rakow).

⁴⁰² Tr. V. 14, pp. 94-95,97 (Grover).

⁴⁰³ Tr. V. 25, p. 39 (Rakow); Ex. 310 (OES Revenue Requirement Chart).

⁴⁰⁴ Tr. V. 23, pp. 80-81 (Ham).

⁴⁰⁵ Tr. V. 25, p. 25 (Rakow).

disturb the quality of residential life, while magnetic and electromagnetic fields may present health concerns to people who live or work near the power lines. Rural landowners and farm workers are particularly likely to be exposed to these risks.

It is insufficient to tell citizens that risks to their families, farms and property can be dealt with later in routing proceedings. Citizens, unlike the professionals supported by their electric rates and tax payments, may not have the resources to duplicate on yet another record in yet another set of proceedings the impacts that are already documented in this certificate of need proceeding.

To protect members of the community who may live, work and farm near the proposed transmission lines, CETF proposes that any certificates of need issued for the CapX2020 projects include a condition seeking through construction practices, routing away from homes and farms and other means to reduce exposures of citizens to the adverse impacts of high voltage transmission.

CONCLUSION

It is not surprising that many concerns have been raised regarding the CapX2020 transmission line projects, while other power line improvements discussed on this record, such as the Buffalo Ridge Incremental Generation Outlet (BRIGO) project, the Rochester Incremental Generation Outlet (RIGO) project and the Bemidji-Grand Rapids 230 kV line are uncontroversial and even uncontested.

The CapX2020 projects are different. They propose an enormous expenditure of capital and an untested structure for the ownership of assets. Perhaps more critically, they have been presented on the basis of information that combined a panoply of forecasts and asserted needs, creating ambiguity as to how alternatives had been evaluated by Applicants and whether that evaluation had been reasonable.

However, from CETF's perspective, the most telling concern about CapX2020 is not its size, complexity or the amalgam of alleged needs. The CapX2020 projects represent a vision of Minnesota's energy future that is no longer valid under Minnesota law. The Commission need not ask whether the CapX2020 utilities were appropriately motivated or whether their interests were aligned with citizens and ratepayers when they developed the CapX2020 initiative. They must only ask whether, given the policies

enacted by the Minnesota Legislature in 2007, the CapX2020 projects currently serve needs consistent with Minnesota law.

As detailed in the preceding Summary and Analysis of the CapX2020 Projects sections of this Brief, CETF believes that the CapX2020 projects do not serve needs consistent with Minnesota statutes and policies. Critical to this analysis are not only certificate of need laws at Minnesota Statutes 216B.243 and Minnesota Rules in Chapter 7849, but the provisions of the Next Generation Energy Act of 2007, establishing energy conservation requirements (Minn. Stat. §216B.2401), Renewable Energy Standards (Minn. Stat. § 216B.1691, subd. 2a), greenhouse gas emissions controls including a moratorium on importation of coal to Minnesota (Minn. Stat. § 216H.03) and requiring a study of the ability to site dispersed renewable generation to minimize impacts to transmission (Minnesota Session Laws 2007, Ch. 136, Art. 4, §17). It is not surprising that this significant legislative initiative has had an impact on the consideration of energy infrastructure projects. This is the change that was anticipated.

Under current law and current demand projections, none of the CapX2020 projects can be justified on the basis of projections in the Vision Plan study or to meet system-wide demand needs.

The La Crosse Project is not needed either for community reliability or for generation outlet capacity. It would cost more than other alternatives, some of which are already underway, and would cause environmental impairment to a national wildlife refuge, habitat and rare and endangered species that other alternatives would avoid. Its certification would conflict with Minnesota law.

The Fargo Project is only needed to protect community reliability from the Monticello substation to the St. Cloud area. Alternative transmission and conservation meet reliability needs in the Northern and Southern Red River Valley, including Alexandria. The Fargo Project does not provide generation outlet capacity consistent with state policy or least cost requirements.

Despite its costs and the fact its facilities will impact CETF members, CETF believes the Brookings Project is needed if and only to the degree that conditions ensure that its capacity would be used to support wind energy in the Buffalo Ridge area and in southwestern Minnesota. Conditions on these certificates of need should ensure that wind outlet capacity is maximized and that the need to secure contracts for wind on the Ridge is not used as a pretext to prevent deployment of community-based renewable energy. CETF has also proposed conditions to ensure Commission review of ownership structures

and rate impacts for the CapX2020 projects and to minimize impacts to land owners and farm workers from nearby transmission lines.

Public testimony and comments serve as a reminder of the impacts of large energy facilities. High voltage transmission lines inherently create environmental impairments, health risks and involuntary costs to land owners and ratepayers. For this reason, the legal constraints of the certificate of need process and a thorough consideration of alternatives is required to ensure that a feasible and prudent alternative could not reduce imposition of costs. After hundreds of citizen comments, weeks of administrative litigation, and thousands of hours developing and analyzing the record, CETF believes that our recommendations provide an economically rational result, given available evidence. But this could be easier.

CETF shares Dr. Kildegaard's view that from the visioning process onward, long before a contested case, there should be an open dialogue about various options for generation, transmission, conservation and load management to meet public policy and energy goals.⁴⁰⁶ The rational consideration of generation and transmission doesn't require the use of a single software program for simultaneous joint optimization of transmission and generation at the micro level. It requires common sense.

Optimization of generation and transmission on a macro level can be used to develop scenarios to be evaluated by the full micro model that reviews overloaded lines and other operational issues.⁴⁰⁷ At a macro level, models of incremental generation from new coal plants, models that fail to meet the Renewable Energy Standards and models that fail to provide incremental energy savings required by the 2007 conservation statute would be rejected out of hand. Long before a power flow analysis, a rational process would focus on a limited number of possible "futures" that comply with State policies.

As with the Generation and Transmission Optimization study discussed by Applicants' witness Tim Rogelstad, a rational transmission planning process would evaluate the benefits of siting wind energy in higher quality more remote regions requiring more transmission as compared to siting wind in locations where transmission cost may be less, including a dispersed scenario.⁴⁰⁸ A rational process would also evaluate the costs of various options to make wind energy dispatchable, including storage

⁴⁰⁶ Tr. V. 18A, p. 53 (Kildegaard)

⁴⁰⁷ Tr. V. 18A, pp. 54-55 (Kildegaard)

⁴⁰⁸ Tr. Vol. 2B at 37-38 (Rogelstad)

technologies, and determine under what circumstances and within what time frame investments should be made to deploy these options. A rational process would look at all cost-effective targeted load management and Smart Grids, rather than the minimum proxy for conservation that was available in this case.

A rational process, fully consistent with Minnesota statutes and rules pertaining to conservation and alternatives, would be an iterative process, where generation, transmission and demand management alternatives are all considered if a projection of future growth predicts a reliability concern. As Dr. Kildegaard explained,

A fundamentally rational process requires feedback and iteration between transmission and generation planning. It also requires feedback from the statutory requirements for conservation and renewable energy to be considered in the transmission planning process. The current process has neither of these attributes.⁴⁰⁹

Transmission planning for the CapX2020 projects was not performed this way. The utilities provided inputs for demand loads and modeled increased generation to match load, primarily from large sources at remote locations. As Mr. Rogelstad described the process, the only variable was the type of transmission fixes for a problem. The analysis was not done year-by-year at various load levels, but at a specific load as a snapshot in time.⁴¹⁰ Unlike a generation resource planning process, the CapX2020 planning did not consider a variety of options for potential energy savings and supply resources, looking both at what has been done in the past and what might be done in the future for conservation.⁴¹¹

Federal Energy Regulatory Commission (“FERC”) orders preventing a utility from favoring their own generation in the provision of transmission would not impede a more rational process for transmission planning. They would support it. As Mr. Alholinna explained, if there is going to be a dialogue about transmission and generation, it has to be made public and nondiscriminatory so any potential developer would have access to the information at the same time.⁴¹² FERC Order 890 specifically seeks to promote openness in transmission planning, sharing of information among transmission

⁴⁰⁹ Tr. Vol. 18A at 56, ll. 9-15 (Kildegaard).

⁴¹⁰ Tr. V. 2B, pp. 67-69 (Rogelstad).

⁴¹¹ Tr. V. 4, pp. 44-45 (Lacey).

⁴¹² Tr. V. 11, pp. 22-23 (Alholinna).

providers, and access to cheaper, more efficient resources to meet generation and transmission needs.⁴¹³ FERC Orders provide no restriction on the ability of utilities to consider load management in an iterative process to reduce the need for transmission. In fact, federal law and FERC Orders seek to include demand resources in the transmission planning process.⁴¹⁴

It may not be possible to have an ideal process, but CETF believes that, in a case with a major build-out like the CapX2020 proposal, where multiple utilities are already involved, planning that creates a dialogue about transmission, generation and demand management would be far more likely to optimize achievement of state goals and minimize financial and environmental costs. We should seek to move in this direction.

CETF respectfully requests that the ALJ adopt the Proposed Findings of Fact and Conclusions of Law of Citizens Energy Task Force submitted with this Brief and recommend, consistent with CETF's more specific Recommendations in that document,

- (i) that all certificates of need for the CapX2020 La Crosse Project be denied;
- (ii) that a certificate of need be granted for the segment of the CapX2020 Fargo Project from Monticello to St. Cloud, but that any other certificates of need for the Fargo Project be denied;
- (iii) that certificates of need be granted for the CapX2020 Brookings Project, along with conditions to ensure that it be used for the purposes for which it is needed, namely to provide generation outlet support for wind energy from the Buffalo Ridge;
- (iv) that no certificates of need for any portion of the CapX2020 projects be granted for facilities "upsized" beyond those proposed in the Application;
- (v) that additional specified conditions be attached to any certificates of need issued in these CapX2020 proceedings to increase conformity with state policies, enhance socioeconomic benefits and protect ratepayers and residents.

Dated: December 5, 2008

⁴¹³ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007) (Order No. 890), pp. 8-9, 186-187, 732, 1030-1031.

⁴¹⁴ *Id.*, pp. 275-276, 280, 283.

Respectfully submitted,

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