To: Daniel P. Wolf, Executive Secretary
Minnesota Public Utilities Commission
121 7th Pl E #350, St Paul, MN 55101

January 15, 2018

Public Comment regarding:

Docket E999/M-17-377 Minnesota Biennial Transmission Project Report
Docket E002/M-17-776 Xcel's 2017 Biennial Grid Modernization Report
Docket 002/M-17-777 Xcel's Distribution System Hosting Capacity Report

Dear Mr. Wolf,

Communities United for Responsible Energy (CURE) has participated in the Commission's energy planning dockets since the mid 1990s. We were involved in legislation and Commission rulemaking for the Transmission planning report. I sat on the committee, and on the rulemaking public participation subcommittee that helped to design the public participation requirements to address the context and spirit of the statutory requirement under 216B.2425 subd. 2C.4.

We have been involved in multiple transmission, certification (CON) and integrated resource planning proceedings. We have consistently advocated for community based energy initiatives; public stakeholder participation in planning, need and permitting proceedings; distribution system access for regional and local renewable energy projects; and the consideration of all DER as resources in least-cost renewable portfolios. We have attended a very large number of committee meetings, hearings, public meetings, and PUC proceedings over the last 20 years.

216B.2425 - STATE TRANSMISSION AND DISTRIBUTION PLAN. In 2017 we are in a very different situation, with grid modernization and participation in energy development projects across the state. The process not only needs, but requires coordination at the sub-regional state level. Most stakeholders agree that to accomplish policy goals, we need to invest in grid modernization to facilitate a two-way exchange and the participation of a whole new set of investors, from top down and bottom up. We are moving from regionalization to relocalization, to encompass economic, social and environmental energy, security challenges and opportunities, including microgrids, and green jobs.

These comments expand significantly upon our recommendation to Reactivate Zonal Public Meetings. It has become clear in the course of our research for these comments, that the Commission already has the authority, the intent, working principles and utility requirements that it needs to embark on integrated transmission and distribution planning. This is the time to realign zonal public meetings with initiatives around the state, and building upon an extensive infrastructure of existing partnerships and programs – to begin. The pending Hosting Capacity Study and Distribution Grid Modernization should become part of the integrated "State Transmission and Distribution" planning process, to facilitate public access, and opportunities for DER and statewide energy development.

Our initial comment submitted 11-21-17 was principally directed to the question of completeness of the 2017 Biennial Transmission Projects Report, regarding the MTO's abnegation of the requirements of statute (216B.2425 subd.2) and rule for public involvement and input on alternatives.

I.The rest of the story: To pick up where our comment left off in 2007, while the Commission continued to direct the MTO's to develop more effective participation methods, the MTO's pressed for elimination of the requirement – formally requesting in that the rule implementing that section of statute be withdrawn. In the 2007 order the Commission responded as follows:

> The other stakeholders who commented on the issue did not oppose exploring ways to expand participation in the biennial transmission planning process by local government officials and members of the public, but emphasized the importance of maintaining transparency and public involvement. The OES suggested a rule variance as an interim measure while alternative approaches to obtaining public input are explored. The Commission concurs with the OES that it is appropriate to vary the rules to free the utilities, on a one-biennium basis, from holding poorly attended annual meetings, while they and the other stakeholders actively explore more effective means of involving local government officials and members of the public in transmission planning. As NAWO points out, the Commission cannot waive the utilities' statutory obligation to involve these people in transmission planning, nor is the Commission so inclined. It makes sense, though, to permit the people responsible for ensuring public participation to explore more effective methods of securing it.

No progress was made on public meetings. the MTO's chose to implement webinars and website development. In 2009, the argument for waiving the requirement remained the same – lack of public interest -- although the MTO's had not held public meetings for the last 2 biennial plans. Still the Commission persisted. The 2009 order required:

> C. Public Participation The statute contemplates that utilities will solicit participation from members of the public. Utilities must report on the public's involvement, including the involvement of local government officials and other interested persons, in identifying transmission inadequacies and analyzing alternative means of dealing with those inadequacies.
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> To implement these requirements for public participation, the Commission adopted Minn. Rules, part 7848.0900, which directs utilities to convene public meetings in each of six transmission planning zones throughout Minnesota. These meetings have not attracted much public participation. Consequently the Commission granted MTO variance to the rule and directed utilities to pursue substitute means of securing input from local and tribal governments and members of the public.8
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> The Commission hereby accepts the 2009 biennial transmission projects reports filed under Minn. Stat. 216B.2425, and designates the projects in those reports as the state transmission project list for purposes of that statute.
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> 2. The MTO shall meet and consult with developers of generators powered by renewable
> sources of energy regarding transmission planning.
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> 3. The Commission hereby extends the variance it granted to Minn. Rules, part 7849.0900, to eliminate the obligation to hold the public meetings described therein. Instead,
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> > a. The utilities shall strive to develop and substitute more effective means of securing input on transmission planning issues from local government officials and other interested persons, including developers of generators using renewable sources of energy; and

> b. The MTO shall modify its transmission planning site on its site on the World Wide Web to identify ongoing and scheduled transmission planning studies, and to provide means for interested persons to subscribe to be notified of developments regarding any of the studies.

> 4. In its 2011 Minnesota biennial transmission projects report, the MTO shall provide: a. separate section in its report to discuss the MTO's outreach efforts.

Thereafter the waiver of the public planning meeting requirements became routine. The effect on public comment to the dockets was pronounced. The first 3 reports produced a robust set of comments. Thereafter the docket conversation has involved primarily utilities and regulators.

The 2011 Biennial Plan public directed interested members of the public to participation opportunities in the MISO and MAPP planning venues and explained how the utilities involve the public and work with local governments when transmission projects are proposed. Increasingly the MTO's used MISO constructs in the transmission planning reports, and again referred to participation in those venues as an appropriate venue for interested persons, which it is not.

The order for the 2013 plan (May 12, 2014) concluded: "that the report's references to the [MISO] Expansion Plan provides useful information concerning the projects listed in the report. However, in the future the information must be supplemented with a fuller discussion <u>of economic, environmental and social issues related to proposed alternative solutions</u> to inadequacies listed in the report". Without local government and stakeholder input, assessment of economic, environmental and social issues is an empty set. And in fact the 2015 transmission report reported in section 2.4 that they could provide only "General Impacts" regarding system factors. The sole sample from the project report follows:

> **General Impacts:** The area where this project will occur is almost entirely rural. There are no notable sites or locations along the route of any new transmission line between the endpoints. Any new transmission line will likely have to navigate through some wetlands and avoid some lakes along any route. There may be some impact on farmland from the location of a new transmission line, but assuming a one hundred and thirty foot right-of-way and some general estimates on electrical poles and farm equipment navigation, of a project area of 741 acres, only 65 acres will actually be impacted. The economic and social impacts will be slight of any project to address this situation. The project may require a temporary project crew to construct the equipment, which could bring some business to the area in the form of room and board. Some landowners may receive a financial payment as a result of this project. Finally, the project will improve the reliability of the system in the area, although it is difficult to measure the importance of an improved system.

The 2015 Order (May 27, 2016) continued, without further comment, the practice of granting the MTO's a variance to the public-participation requirements of Minn. R. 7848.0900. The Commission no longer required a webinar presentation to be scheduled, and making the following findings – cited without further evidence than the MTO's historic claims of lack of public interest—"in accordance with Minn. R. 7829.3200 a. enforcement of the rule would excessively burden the Minnesota Transmission Owners by requiring them to spend money and divert engineers and other experts to hold meetings that do not appear to provide a corresponding public benefit; b. varying the requirement for public meetings where there has been a demonstrated lack of public interest would not adversely affect the public interest; and c. granting the variance would not conflict with any other standards imposed by law".

In a self-reinforcing loop, of course by this time there were no participating parties to object.

Conclusion: The Commission variances, in not enforcing the public planning requirements, failed implementation of key provisions of the **"State Transmission and Distribution Plan"** (216B.2425) and the requirements of 216B.2426: for "Opportunities for Distributed Generation".

> **216B.2425, Subd 2 (c) The report must:**
>
> **(1) list specific present and reasonably foreseeable future inadequacies in the transmission system in Minnesota;**
>
> **(2) identify alternative means of addressing each inadequacy listed;**
>
> **(3) identify general economic, environmental, and social issues associated with each alternative; and**
>
> **(4) provide a summary of public input related to the list of inadequacies and the role of local government officials and other interested persons in assisting to develop the list and analyze alternatives [editorial emphasis]**

- **216B.2426 OPPORTUNITIES FOR DISTRIBUTED GENERATION.**

The commission shall ensure that opportunities for the installation of distributed generation, as that term is defined in section 216B.169, subdivision 1, paragraph (c), are considered in any proceeding under section 216B.2422, 216B.2425, or 216B.243

The 2017 Transmission report provides a final summary of the devolution of public participation in transmission planning -- the MTO's perspective:

> 4.1 Public Involvement in Transmission Planning.
> Both the statute – Minn. Stat. § 216B.2425 – and the MPUC rules – Minn. Rule part 7848.0900 – emphasize the importance of providing the public and local government officials with an opportunity to participate in transmission planning. Over the years of filing biennial reports, the utilities have tried, in accordance with MPUC requirements, various methods of advising the public of opportunities to learn about and participate in transmission planning activities.
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> The MPUC adopted rules for public involvement in transmission planning as part of the biennial report requirements in 2003. Initially, in accordance with Minn. Rule part 7848.0900, the utilities held public meetings across the state in each transmission planning zone to advise the public of potential transmission projects and to solicit input regarding development of alternative solutions to various inadequacies. These public meetings were poorly attended, with little input being offered.
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> As a result, in May 2008 when the MPUC approved the 2007 Report, the MPUC granted a variance from the obligation to hold these zonal meetings, and that variance has been extended every time since, including in the May 27, 2016, Order regarding this year's Biennial Report. No public meetings were required in the transmission planning zones as part of this year's biennial report submission.

> In lieu of the public meetings, beginning with the preparation of the 2009 Report, the utilities held six webinars, one for each transmission planning zone, to report on the transmission inadequacies identified in the Biennial Report for each zone. These webinars were not any better attended than the zonal meetings were in previous years. Few questions and comments were generated.
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> For the 2011 Report, with Commission approval, the utilities held one webinar. Despite widespread notice in a statewide newspaper of the webinar, only a few people participated, and most of those were utility or state employees. In 2013, after the 2013 Biennial Report was filed, the utilities held another webinar. Again, essentially nobody participated – only one person joined in the webinar.

As a result, the Commission has now determined that the utilities are not required to hold a webinar with regard to the Report. http://www.minnelectrans.com/documents/2017_Biennial_Report/html/Ch_4_Public_Participation.htm

II Changing Times and Circumstance: Ironically, throughout this period of devolution, public interest and involvement at all levels was burgeoning and transforming Minnesota's energy landscape. To name just *a few* of Minnesota's touchstones and players in the energy arena:

- Collaborative initiatives, from "Sharing the Load", an early public conference on distributed energy in 2001, to the highly successful statewide "Local Energy Initiatives" meetings in 2007 https://www.cleanenergyresourceteams.org/events/special/local-energy-initiatives;
- From the E-21 stakeholder initiative www.betterenergy.org/projects/e21-initiative to ILSR's " Energy Democracy" challenge https://ilsr.org/new-years-resolutions-for-utility-regulators/
- Entrance of a large number of renewable energy investors and entrepreneurs in all sectors
- University of Minnesota's numerous public research and policy forums, conferences and projects, most recently centered in the Energy Transition Lab, headed by Ellen Anderson energytransition.umn.edu/
- The Minnesota Energy Storage Alliances (MESA) energytransition.umn.edu/the-minnesota-energy-storage-alliance-mesa/
- Minnesota's Clean Energy Resource Teams (CERTS) support initiatives around the state. https://www.cleanenergyresourceteams.org/
- Local government, municipalities and cities are taking action on climate change and efficiency. The LoGoPEP team is currently working to refine and expand their energy planning tools for local governments to cities in Greater Minnesota. The LoGoPEP Greater Minnesota expansion will collect energy and travel data for more than 90 cities in the state. The data will become available on this website: https://www.regionalindicatorsmn.com/energy-planning https://www.regionalindicatorsmn.com/.../pdf.../energyplanningguide_april2017.pdf
- Community Solar Gardens https://www.cleanenergyresourceteams.org/solargardens https://www.xcelenergy.com/company/media_room/news_releases/solar_gardens_growing_in_minnesota
- Green Step Cities https://greenstep.pca.state.mn.us/
- Minneapolis/ Xcel Clean Energy Partnership https://mplscleanenergypartnership.org
- Formation of a Minnesota Citizens Utility Board cubminnesota.org/

Since EPRI's 2003 stakeholder report "Electricity Sector Framework for the Future" the path to a shared energy future has been clear. These collaborations and partnerships mark a new era in our energy systems where <u>mutual benefit</u> and <u>fair play</u>, rather than competing interests, are the driving, transforming "power" of the grid. EPRI - 2003*http://www.greencrossitalia.it/ita/news/istituzionale/pdf/wade_malcolm2.pdf

III. The Commission has kept abreast of developments. Minnesota is a featured leader in Grid Modernization in the 2017 September report to the National Conference of State Legislatures, Planning for the Evolving Grid: State Distribution Planning Practices by Lisa Schwartz, Lawrence Berkeley National Laboratory, from the DOE's *Grid Modernization Laboratory Consortium* http://www.ncsl.org/Portals/1/Documents/energy/webinar_LSchwartz_9_2017_31633.pdf

The report outlines: "**State benefits from improved distribution planning** ▶ Makes utility distribution system investments transparent before showing up individually in rate case or rider ▶ Provides opportunities for meaningful PUC and stakeholder engagement ■ Can improve outcomes ▶ Considers uncertainties under a range of possible futures ▶ Considers all solutions for least cost/risk ▶ Motivates utility to choose least cost/risk solutions ▶ Enables consumers and third parties to propose grid solutions and participate in providing grid services"

And Minnesota's accomplishments:

■ Biennial Distribution Grid Modernization Reports (Minn. Stat. §216B.2425)
● Utility identifies projects it considers necessary to modernize its T&D systems
● May ask Commission to certify grid modernization projects as priority projects, a requirement for utility to recover costs through a rider (outside of a general rate case)
● Distribution study to identify interconnection points for small-scale distributed generation (DG) and distribution system upgrades to support continued DG development; no formal Commission action required
■ Xcel Energy filed 1st Biennial Distribution Grid Modernization Report in 2015
• Commission order certified an advanced distribution management system (ADMS) and required initial hosting capacity analysis by 12/1/16 — analysis of each feeder for DG ≤1 MW and potential distribution upgrades necessary to support expected DG (based on utility's IRP filings and Community Solar Gardens process)
• Commission decision on Xcel hosting capacity analysis requires hosting capacity analyses Nov. 1 each year and provides guidance for next analysis September 18, 2017 18 States advancing distribution planning - 5 MN, cont.
▶ PUC initiated inquiry in May 2015 on Electric Utility Grid Modernization with a focus on distribution planning (Docket No. CI-15-556) ■ Series of stakeholder meetings that continued through fall 2016
■ DOE sponsored a consultant report on integrated distribution system planning for MN
■ Questionnaire on utility planning practices with stakeholder comments and responses
• How do Minnesota utilities currently plan their distribution systems?
• What is the status of each utility's current plan?
• Are there ways to improve or augment utility planning processes?

IV. Our questions and recommendations are drawn from Commission studies and reports. Over the last few years, as these reports demonstrate, the Commission has set direction for integrating transmission and distribution planning. Drawing from these reports and studies, **we identify key citations and recommendations that would support implementation of an integrated "State Transmission and Distribution Plan"** Questions A-E are inserted into related text of key studies.

A. Investigate this question above: Are there ways to improve or augment utility planning processes? **How can the transmission planning report -- with its requirements for involving the public stakeholders in planning -- integrate requirements of the "State Transmission and Distribution Plan" statute? Identify mutual benefits.**

***Staff report on Grid Modernization* tees up 3 questions:**

1. *Are we planning for and investing in the grid we will need for the future*
2. *Are planning processes aligned to ensure*
   - *future reliability,*
   - *efficient use of resources,*
   - *maximize customer benefits and successful*
   - *implementation of public policy?*
3. *What Commission actions would support improved alignment of planning and investment?*

INTEGRATED DISTRIBUTION PLANNING A Report prepared for the Minnesota Public Utilities Commission, August 2016
https://energy.gov/sites/prod/files/2016/09/f33/DOE%20MPUC%20Integrated%20Distribution%20Planning%208312016.pdf

This report was prepared by ICF International https://www.icf.com/. It was sponsored by the U.S. Department of Energy's (DOE) Office of Electricity Delivery and Energy Reliability (OE)…The Report was developed at the request of the Minnesota Public Utilities Commission (MPUC) – specifically Vice Chair and Commissioner Nancy Lange and Commissioner Matthew Schuerger – to share emerging approaches for addressing the integration of distributed energy resources in planning processes. **Excerpts below**, interspersed with CURE's questions and recommendations.

> **6. Integrated Resource, Transmission & Distribution** [Italics added] Planning At high levels of DER adoption, the net load characteristics on the distribution system can have material impact on the transmission system and bulk power system operation.45 Today, distribution planning is typically done outside the context of integrated resource planning and transmission planning.
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> *To the extent DER are considered in resource and transmission planning it is essential to align those assumptions and plans with those used for distribution planning*. Further, to the extent distribution connected DER provides wholesale energy services it is necessary to consider the deliverability of that DER across the distribution system to the wholesale transaction point. *If a state is experiencing, or anticipates, strong DER growth it is prudent to consider alignment of the recurring cyclical planning processes for resource, transmission and distribution so that an integrated view of system needs is effectively conducted.*

B. Identify and describe the role of customer-investors and merchant DER in planning for resource adequacy and development of transmission alternatives. **How can this exercise contribute to implementation of 216B.2425, subd. 2c (2) "identify alternative means of addressing each inadequacy listed" ; and inform the PUC's rule requirements for outreach?**

> *This planning integration may be accomplished through an iterative approach that starts with identifying the role of customer and merchant DER in reducing and/or meeting resource adequacy.* This assessment as part of Integrated Resource Planning (IRP) informs the distribution planning as to the amount of DER that will be interconnected over the planning horizon.
>
> *Additionally, DER may be a viable non-wires alternative (NWA) for transmission upgrades identified in the transmission planning process*. Customer and/or merchant DER providing transmission services will also need to be considered in the distribution planning analysis. The results of the distribution planning will determine the "deliverability" of these resource adequacy and transmission NWA DER….
>
> *The integration of transmission and distribution infrastructure planning involves aligning these activities into the long-term demand forecasting and resource planning processes employed in a state.* Assuming a state has an

established recurring process for forecasting long-term (10 to 20 years) electricity demand, the validity of the resulting forecasts and decisions based on them will depend on how well the expansion of DERs can be forecasted and these forecasts integrated into projections of peak demand, annual energy and system load shape. Such forecasts are used, for example, to assess future generating capacity adequacy to guide procurement decisions for those utilities with load-serving responsibilities.

C. Relocalize Forecasting and require sub-regional planning meetings by transmission planning zones. Utility forecasts are based upon evaluation of substation data and load serving needs. Who is closer to these needs than the communities served?

How should local government and community/public participation contribute to the implementation of 216B.2425, subd. 2(c) (1)" list specific present and reasonably foreseeable future inadequacies in the transmission system in Minnesota", and (2 "identify alternative means of addressing each inadequacy listed" ?

How can relocalizing the planning process via the sub-regional ZONAL planning process of the MTO's be used to coordinate transmission and distribution planning, forecast and analysis?

How could an integrated planning process be designed to address the goals below (in red):

> *For transmission planning, the granularity of DER forecasts will be at the T-D substation level.* These forecasts can be built up from the feeder-level forecasts developed for distribution planning based on 8760 hours loading data.(*) The point is that a jurisdiction that anticipates DER growth should begin to think about how to align the recurring cyclical processes for long-term load forecasting, resource procurement, and T&D planning so as to specify the timing and content of essential information flows among these processes. [editorial emphasis]
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> **Minnesota and other states should consider the following when assessing the integration of distribution planning with resource and transmission planning as part of an overall IDP process**:
>
> • Identify the planning process steps and timing of related integrated resource planning, transmission planning and respective utility distribution planning cycles for the purpose of harmonizing planning to consider impacts and benefits of DER adoption.
>
> • Need to align planning assumptions input and time horizons for consistency across resource, transmission and distribution planning to ensure consistency and compatibility in results.
>
> • Identify assumptions regarding deliverability of DER into wholesale markets and transmission and related impacts on distribution.
>
> • Consider the potential for certain DER to provide services as a non-wires alternative for transmission and distribution investment and potential issues with double-counting resource contributions.
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> (*)"Net load" refers to the amount of load that is visible to the TSO at each T-D interface, which can be expected to be much less than the total or gross end-use consumption in local areas with high amounts of DERs.
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> The term "net load" is also used at the transmission system level to refer to the total system load minus the energy output of utility-scale variable renewable generation, as illustrated by the CAISO's well known "duck curve." In this report we are focusing mainly on the first sense of the term—i.e., the impact of DERs on the amount of load seen at each T-D interface.

D. Reevaluate avoided costs basis via "locational value assessment". Customer and community investments and contributions to DER and grid resilience, with the right incentives and placement, will only increase. For instance. The response to the Colorado RFP Solicitation is unprecedented with 430 total individual proposals. Over 350 of these individual proposals are renewable energy proposals or renewable energy with storage proposals, compared to 55 bids in the 2013 All-Source Solicitation."

What is the scope of mutual benefits that can be established? And how do these relate to the requirements of 216B.2425, Subd. 2c (3) " identify general economic, environmental, and social issues associated with each alternative"

> LOCATIONAL NET BENEFITS ANALYSIS 3.1 LOCATIONAL NET BENEFITS ANALYSIS DER have the potential to provide incremental value for all customers through improving system efficiency, capital deferral and supporting wholesale and distribution operations. However, *the value of DER on the distribution system is locational in nature*—that is, the value may be associated with a distribution substation, an individual feeder, a section of a feeder, or a combination of these components. The annual distribution system planning analyses, described above, identifies incremental infrastructure or operational requirements by location and related potential infrastructure investments.
>
> The cost estimates of these investments form the potential value that may be met by sourcing services from qualified DERs as non-wires alternatives. *Also, this locational value assessment of avoided costs may inform DER incentive changes to optimize the location of DERs on the distribution system to mitigate/avoid impacts.* The objective is to achieve net positive value (net of costs to implement the DER sourcing) from DER integration for all utility customers.
>
> These net values may also include avoided or deferred utility capital spent on wholesale energy and capacity, transmission upgrades and avoided operational expenses that are system-wide and not necessarily locational. There may also be environmental and customer benefits that are added to the DER value stack. Locational value of DERs is not always net positive, as it depends on any incremental distribution system costs (not including costs to the DER developer/owner) to integrate the DER.

PUC Staff Report on Grid Modernization, 2016 http://gridworks.org/wp-content/uploads/2015/06/MNPUC_Staff_Report_on_Grid_Modernization_March2016.pdf

> **Identification of grid services** Regardless of the market option above, the direction of the industry appears to be trending towards the advent of a services-based model. In this vision, the utility or DSO begins to identify new needs in the operation of the distribution grid, similar to the development of the transmission grid. Instead of just providing electricity, the utility or DSO would begin to procure ancillary services, such as VVO or location-specific demand response…
>
> For example, a utility or DSO could have a localized need for excess generation to be consumed. An electric vehicle or storage resource could bid in its availability to consume or store that excess electricity and be paid for that service, at that location. This distributed locational marginal price could enable a wide variety of market options and methods to enhance the reliability and resilience of the grid. By allowing the utility, acting as a DSO, to procure these services, it may be able to mitigate new infrastructure investments by procuring non-utility resources to meet future needs

E. Reconsider ARCs contribution to DER integration and efficiency**. What role could they play in TD and resource planning, as outlined below in the Staff Report on "Possible Next Steps"? And the integration of efficiency and DSM resource into integrated planning?**

> **Possible next steps** If the Commission decides to chart a course towards greater use of DER and better integration of DER with utility operations, the Commission may want to explore whether the prohibition on ARCs may inhibit development of this market. If the Commission would like to consider ARCs further, one

option would be to revisit the discussion in Docket 09-1449. Staff notes the Commission need not completely overturn its previous orders.

For example, the Commission could narrowly tailor an exemption to its prohibition by considering the role ARCs could play in utilities' distribution planning and integrated resource planning for retail purposes. In other words, rather than allowing ARCs to aggregate retail demand and participate in wholesale markets, the Commission could simply allow ARCs to operate in retail procurement markets, which are operated by the regulated utilities and remain under the sole jurisdiction of the Commission.

Rather than considering how ARCs could partner with IOUs, which is allowed under existing Commission policy, ARCs would be allowed to engage directly with retail customers and participate directly in utility IRP or RFPs as a resource. While analysis would be needed to determine the viability of a retail market for demand response and other aggregated distribution services, it could be focused on in-state procurement needs. For example, electric vehicles utilizing third party charging equipment could allow that third party to aggregate and dispatch those EVs in response to utility needs.

F. Customer-Investors and "Equity" Partners. What do we call them? And how do we understand the Commission's responsibility to:

- Utility customers who are also investors and producers; how will costs and benefits be shared?
- Cities who are also customers, demanding that utility partners support their climate change commitments and goals.
- What are we to make of an increasing number of "equity partners", that is organizations, groups, leaders and tribes who are calling the energy system to account for equity in economic opportunity, social and environmental impacts. How do we respond? How do planning venues incorporate these rights, responsibilities and interests?

These are voices, public interests and values that need to be heard. The following list of additional players was identified by Timothy DenHerder-Thomas, General Manager of **Cooperative Energy Futures** https://cooperativeenergyfutures.com

- Clean Up Our River Environment
- Northland Just Community Solar Team
- Rural Renewable Energy Alliance
- Community Stabilization Project
- Minneapolis Renters Coalition
- Inquilinxs Unidxs
- Windustry
- Community Power
- Minnesota Interfaith Power and Light
- ISAIAH
- MN350
- North American Water Office
- Environmental Justice Advocates of Minnesota
- MPIRG
- Northfield Area Community Solar
- Greater MN Housing Fund
- Region 9 Sustainable Development Partnership

G. Build upon existing collaborations, requirements and partnerships. Finally we assert that the requirements that have been added since 2001, reflecting these policy and planning goals – and specifically he Distribution Modernization Report and Distribution System Hosting Capacity Report under **216B.2425** -- need to be reintegrated into a statewide integrated transmission and distribution planning process in order to facilitate the active involvement and investment of all stakeholders. A parallel process to the resource IRP.

The social, organizational and regulatory infrastructure is already on place. See examples on pages following.

In addition to the biennial transmission report the **"State Transmission and Distribution Plan"** statute requires:

(a new provision added in 2015 under Subd. 2 (e) In addition to providing the information required under this subdivision, a utility operating under a multiyear rate plan approved by the commission under section 216B.16, subdivision 19, shall identify in its report investments that it considers necessary to modernize the transmission and distribution system by enhancing reliability, improving security against cyber and physical threats, and by increasing energy conservation opportunities by facilitating communication between the utility and its customers through the use of two-way meters, control technologies, energy storage and microgrids, technologies to enable demand response, and other innovative technologies.

Principles for Grid Modernization at the Minnesota Commission

• Maintain and enhance the safety, security, reliability, and resilience of the electricity grid, at fair and reasonable costs, consistent with the state's energy policies;

• Enable greater customer engagement, empowerment, and options for energy services;

• Move toward the creation of efficient, cost-effective, accessible grid platforms for new products, new services, and opportunities for adoption of new distributed technologies;

• Ensure optimized utilization of electricity grid assets and resources to minimize total system costs;

• Facilitate comprehensive, coordinated, transparent, integrated distribution

- (Subd. 5) The Department of Commerce shall create, maintain, and update annually an inventory of transmission lines in the state.
- Subd. 7) Transmission needed to support renewable resources. (a) Each entity subject to this section shall determine necessary transmission upgrades to support development of renewable energy resources required to meet objectives under section 216B.1691 and shall include those upgrades in its report under subdivision 2.
- (Subd. 8). Distribution study for distributed generation. Each entity subject to this section that is operating under a multiyear rate plan approved under section 216B.16, subdivision 19, shall conduct a distribution study to identify interconnection points on its distribution system for small-scale distributed generation resources and shall identify necessary distribution upgradesto support the continued development of distributed generation resources, and shall include the study in its report required under subdivision 2 (the "transmission projects report") https://www.revisor.mn.gov/statutes/?id=216b.2425

H. Reactivate Zonal Public Planning Meetings and begin the process of integrated planning for Grid Modernization: Our one contention with the PUC Staff report is the report's sense of timing for the goal of developing an integrated planning process for distribution and transmission. Embarking on this process is urgent. It cannot wait for several more rounds of disintegrated reports and plans.

This is the time to implement the realignment of zonal public meetings with energy initiatives and local government planning around the state. This opportunity is significantly enhanced by the alignment of the MTO zonal planning map with the state's Clean Energy Resource Team's statewide organizing zones. The pending Hosting Capacity Study and Distribution Grid Modernization have everything to do with facilitating statewide development and benefits . They should become part of an integrated transmission and distribution planning docket as soon as possible.

There are technologies and strategies that can only be effectively explored in a relocalized, sub-regional planning process. For instance, the potential of micro-grids to integrate load-balancing and peak shaving technologies (for example, the electric hot water heaters highlighted in a recent Dakota Electric pilot); net metered and community-scale renewable energy to provide a stable alternative to long-distance transmission from large thermal power plants.

These opportunities can only be harnessed at scale via active participation from community-based organizations since they entail widespread adoption by energy users of home energy devices in order to enable grid-support services and the aggregation and coordination of those services across many small centers of load/capacity. As noted in the ITC report: "*the value of DER on the distribution system is locational in nature*—that is, the value may be associated with a distribution substation, an individual feeder, a section of a feeder, or a combination of these components."

An example provided by Cooperative Energy Futures: a community-based organization that was able to aggregate 500 grid-dispatchable hot water heaters within a substation area with a shared operating agreement among the users, can market a dispatchable storage facility at the neighborhood/substation level to the utility that is far more controllable than individual customers alone, while providing for fair compensation to participating energy users for the energy services they are providing to the grid.

- The number of Green Step Cities and local governments engaged in energy planning provides a focal point for relocalized subregional planning, and consideration of Locational Net Benefits and/or reassessment of the basis of avoided cost. Utility-public partnerships are a foundation for system transformation, as long as everyone plays fair.

Finally, recent bids of solar-storage into the system, are beyond expectations of cost effective implementation. Storage is locationally specific and requires a bottom up, integrated planning track.

We submit these understandings and recommendations which have been developed to the best of our ability, with good will and thanks to all parties and participants.

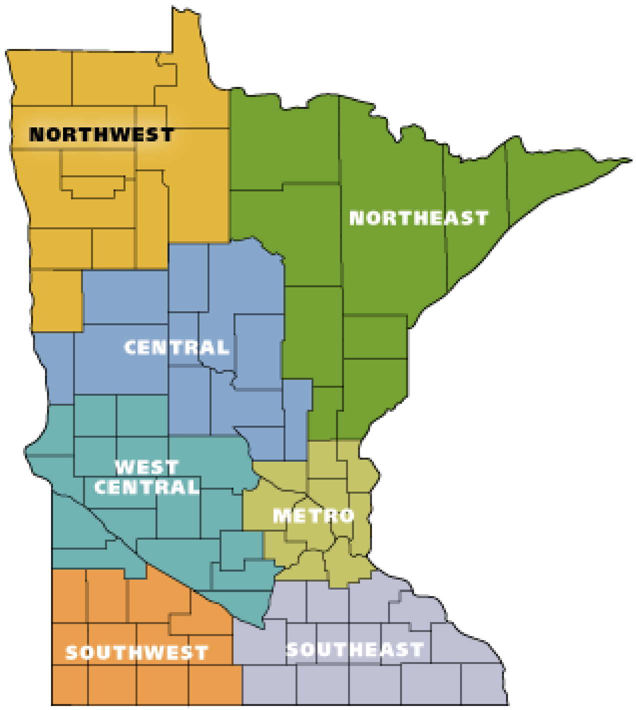
Sincerely,

Kristen Eide-Tollefson for Communities United for Responsible Energy (CURE)

MTO ZONE MAP See the Minnesota Transmission Owner's webpage http://www.minnelectrans.com/. The website was created by the utilities that own or operate transmission lines, substations or other facilities in Minnesota in response to the State Transmission Plan requirements. See their extensive list of participating utilizes and agencies.

CERTS ZONES – PARTNERS AND STAFF: https://www.cleanenergyresourceteams.org/partners-staff

The Clean Energy Resource Teams project is a public-private partnership staffed by: the University of Minnesota Extension and Regional Sustainable Development Partnerships, Great Plains Institute, Southwest Regional Development Commission, and the Minnesota Department of Commerce. Read on to learn more about each partner and their CERTs staff. Click here for CERTs organizational structure



CERTS ZONES

For explanation of CERTS regions: https://www.cleanenergyresourceteams.org/regions

Home • How the Transmission System Works • Webcast • Studies & Reports • Projects • Contact Us

Planning Zones

Northwest Zone
Northeast Zone
West Central Zone
Twin Cities Zone
Southwest Zone
Southeast Zone

MN Counties (large map)

Sponsoring Utilities

American Transmission Company

Minnesota Biennial Transmission Planning

This website provides information for the public and other stakeholders about transmission proj
being planned in the state of Minnesota. The website was created by the utilities that own or op
transmission lines, substations or other facilities in Minnesota in response to state rules passed
below). You will find information or sources of information here about:

- Transmission projects various utilities are planning
- How you can participate in the process of the development of transmission projects in M
- Legislation that requires utilities to coordinate planning efforts and create opportunities f participation
- Studies of Minnesota's transmission system
- More

By November 1 of each odd-numbered year, any utility that owns or operates electric transmiss

[Dairyland Power Cooperative](#)

[East River Electric Power Cooperative](#)

[Great River Energy](#)

[Hutchinson Utilities Commission](#)

[ITC Midwest](#)

[L&O Power Cooperative](#)

[Marshall Municipal Utilities](#)

[Minnesota Power](#)

[Minnkota Power Cooperative](#)

[Missouri River Energy](#)

[Otter Tail Power Company](#)

[Rochester Public Utilities Commission](#)

[Southern Minnesota Municipal Power Agency](#)

[Willmar Municipal Utilities](#)

[Xcel Energy](#)

Participating Government Agencies

[Minnesota Public Utililities Commission](#)

[Minnesota Department of Commerce](#)

[Environmental Quality Board](#)

Related Links

[North American Electric Reliability Council](#)

[Midcontinent ISO](#)

Minnesota is required (Minnesota Statutes 216B.2425) to submit a transmission projects report
Minnesota Public Utilities Commission. The report is called the Biennial Transmission Projects Re
Biennial Report, and the 16 utilities involved file this report jointly.

- 2017 Biennial Transmission Projects Report
- 2015 Biennial Transmission Projects Report
- 2013 Biennial Transmission Projects Report
- 2011 Biennial Transmission Projects Report
- 2009 Biennial Transmission Projects Report
- 2007 Biennial Transmission Projects Report
- 2005 Biennial Transmission Projects Report

Learn about the legislation requiring transmission planning reports and public participation in Cl
the 2013 Biennial Transmission Project Report and in the Biennial Transmission Filing Rulemaki

Grid Modernization Report

Northern States Power Company, doing business as Xcel Energy, submitted a Grid Modernizatio
November 1, 2015. Download PDF document.

Public meetings and webcast

We encourage all interested stakeholders to learn about transmission projects being planned in
Minnesota and participate in the process by providing comments. Our webcasts address the Bie
Transmission Projects Report and how to identify projects that are proposed in each part of the

For questions, email Jenny Mattson at jmattson@grenergy.com or Lori Buffington at lbuffington@grenergy.com.

Minnesota GreenStep Cities

A program of the Minnesota Pollution Control Agency and its Partners. https://greenstep.pca.state.mn.us/

Click on city name to see contact information and detail on completed actions

Click here to see which cities have implemented which best practices.

City	Joined	Current step (date achieved)	Total completed actions
Aitkin	Mar 2016	STEP 1	0

National Electric Safety Code

US Department of Energy

CapX2020.com

Albert Lea	Apr 2016	STEP 3 (6/15/17)	47
Apple Valley	Jun 2011	STEP 3 (6/23/15)	55
Arden Hills	Apr 2016	STEP 1	23
Arlington	Mar 2011	STEP 3 (6/15/16)	36
Austin	Jul 2011	STEP 3 (6/15/16)	78
Barnum	Mar 2016	STEP 1	4
Belle Plaine	Feb 2016	STEP 2 (6/15/17)	13
Bemidji	Feb 2012	STEP 3 (6/23/15)	47
Big Lake	Mar 2016	STEP 1	12
Bloomington	Aug 2017	STEP 1	8
Brainerd	Apr 2013	STEP 2 (6/23/15)	41
Brooklyn Center	Jan 2015	STEP 2 (6/23/15)	22
Burnsville	Apr 2012	STEP 5 (6/15/17)	80
Chisholm	Feb 2015	STEP 1	3
Cologne	Jul 2015	STEP 1	6
Columbia Heights	Feb 2013	STEP 2 (6/23/15)	16
Coon Rapids	Mar 2014	STEP 2 (6/23/15)	49
Cottage Grove	Dec 2010	STEP 3 (6/15/17)	45
Crookston	Feb 2015	STEP 1	13
Crystal	Nov 2014	STEP 2 (6/23/15)	54
Delano	Jun 2011	STEP 2 (6/15/16)	20
Duluth	May 2014	STEP 2 (6/23/15)	43
Eagan	Aug 2010	STEP 4 (6/15/17)	58
Eden Prairie	Jun 2011	STEP 5 (6/15/17)	54
Edina	Jan 2011	STEP 3 (6/10/12)	38
Elk River	Oct 2010	STEP 5 (6/15/17)	61
Elko New Market	Nov 2013	STEP 2 (6/15/16)	27
Ely	Jan 2014	STEP 2 (6/15/16)	23
Falcon Heights	Jan 2011	STEP 4 (6/15/17)	27

Faribault	Mar 2016	STEP 1	3
Farmington	May 2011	STEP 2 (6/10/12)	24
Fergus Falls	Sep 2015	STEP 2 (6/15/16)	69
Fond du Lac Band of Lake Superior Chippewa	Feb 2017	STEP 1	0
Forest Lake	Jun 2014	STEP 1	3
Fridley	Aug 2014	STEP 1	7
Gilbert	Jan 2015	STEP 1	10
Golden Valley	Apr 2016	STEP 2 (6/15/17)	67
Grand Marais	Jan 2014	STEP 2 (6/15/16)	30
Grand Rapids	May 2012	STEP 2 (6/20/13)	19
Granite Falls	Nov 2016	STEP 1	15
Hastings	Apr 2016	STEP 3 (6/15/17)	67
Hermantown	Mar 2015	STEP 2 (6/23/15)	11
Hewitt	Mar 2016	STEP 1	1
Hoffman	Dec 2010	STEP 2 (6/20/13)	15
Hopkins	Nov 2010	STEP 3 (6/20/13)	43
Hutchinson	Apr 2015	STEP 5 (6/15/17)	44
Inver Grove Heights	Mar 2016	STEP 1	35
Isanti	Aug 2015	STEP 3 (6/15/16)	38
Jordan	Oct 2015	STEP 3 (6/15/17)	36
Kasson	Feb 2011	STEP 2 (6/20/14)	16
La Crescent	Oct 2015	STEP 2 (6/15/17)	18
La Prairie	Sep 2010	STEP 2 (6/20/13)	35
Lake Crystal	Apr 2013	STEP 2 (6/20/14)	19
Lake Elmo	May 2012	STEP 2 (6/20/13)	13
Lakeville	Nov 2017	STEP 1	0
Lauderdale	Mar 2015	STEP 2 (6/15/16)	12
Leech Lake Band of Ojibwe	Aug 2014	STEP 2 (6/23/15)	57

	Lexington	Aug 2015	STEP 2 (6/15/16)	14
	Mahtomedi	Oct 2010	STEP 3 (6/20/14)	20
	Mankato	Aug 2010	STEP 2 (6/20/13)	57
	Maple Grove	Dec 2012	STEP 2 (6/23/15)	22
	Maplewood	Dec 2010	STEP 5 (6/15/17)	105
	Marine on Saint Croix	Dec 2014	STEP 3 (6/15/17)	13
	Marshall	Mar 2012	STEP 3 (6/15/16)	40
	Mayer	Oct 2015	STEP 1	4
	Milan	Jun 2010	STEP 1	4
	Minnetonka	Dec 2013	STEP 2 (6/20/14)	36
	Moorhead	Jul 2017	STEP 1	12
	Morris	Jul 2016	STEP 2 (6/15/17)	14
	Mounds View	Feb 2016	STEP 1	7
	Mountain Iron	May 2012	STEP 2 (6/15/16)	18
	New Brighton	Feb 2016	STEP 2 (6/15/16)	30
	New Germany	Jun 2016	STEP 2 (6/15/17)	6
	New Hope	Jan 2015	STEP 3 (6/15/16)	76
	Newport	Apr 2012	STEP 3 (6/20/13)	39
	Nisswa	Oct 2012	Inactive	0
	North Saint Paul	Jul 2012	STEP 3 (6/15/16)	27
	Northfield	Jun 2010	STEP 3 (6/23/15)	42
	Oakdale	Mar 2011	STEP 4 (6/15/17)	47
	Pierz	Sep 2014	STEP 1	6
	Pine City	Mar 2014	STEP 2 (6/15/17)	14
	Pine River	May 2010	STEP 2 (6/20/14)	14
	Red Lake Band of Chippewa	Jun 2015	STEP 1	2
	Red Wing	Feb 2011	STEP 4 (6/15/17)	73
	Richfield	Jan 2012	STEP 2 (6/15/16)	70
	Rochester	Dec 2010	STEP 3 (6/20/13)	85

	Rogers	Dec 2011	STEP 3 (6/20/14)	25
	Rosemount	Dec 2011	STEP 2 (6/10/12)	26
	Roseville	Jul 2014	STEP 2 (6/23/15)	54
	Royalton	Sep 2010	STEP 2 (6/10/12)	24
	Saint Anthony	Feb 2011	STEP 5 (6/15/17)	54
	Saint Cloud	Jun 2010	STEP 2 (6/13/11)	59
	Saint Francis	Sep 2017	STEP 1	0
	Saint James	Feb 2017	STEP 1	1
	Saint Louis Park	Jun 2012	STEP 3 (6/15/17)	44
	Saint Paul	Jun 2014	STEP 4 (6/15/17)	81
	Saint Paul Park	Feb 2013	STEP 2 (6/15/16)	10
	Sartell	Jan 2014	STEP 2 (6/15/16)	48
	Sauk Rapids	Jul 2012	STEP 2 (6/20/13)	22
	Scandia	May 2014	STEP 1	18
	Sherburn	Sep 2014	STEP 2 (6/15/16)	11
	Shoreview	Jan 2013	STEP 3 (6/20/14)	57
	Shorewood	Jun 2011	Inactive	13
	Silver Bay	Jan 2014	STEP 2 (6/20/14)	12
	South Saint Paul	Apr 2016	STEP 1	10
	Stacy	Feb 2016	STEP 1	0
	Sunfish Lake	May 2016	STEP 2 (6/15/17)	6
	Two Harbors	Mar 2015	STEP 2 (6/23/15)	18
	Vesta	Oct 2017	STEP 1	0
	Victoria	Jan 2012	STEP 3 (6/23/15)	35
	Warren	Sep 2011	STEP 2 (6/20/14)	26
	West Saint Paul	May 2017	STEP 1	0
	White Bear Lake	Dec 2011	STEP 3 (6/20/14)	52
	Willmar	Mar 2012	STEP 2 (6/20/13)	28
	Winona	Feb 2017	STEP 1	6

Winthrop	Nov 2015	STEP 1	8
Woodbury	Jan 2013	STEP 3 (6/20/13)	77
Wyoming	Oct 2017	STEP 1	0

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