clean energy economy mn

cleanenergyeconomymn.org

February 28, 2024

Minnesota House of Representatives
Climate and Energy Finance and Policy
State Office Building, Room 200
Saint Paul, MN 55155

RE: House File 3704 - Plan for implementation of grid-enhancing technologies to increase electricity transmission

Dear Chair Acomb, Representative Kraft, and Committee Members,

On behalf of Clean Energy Economy MN (CEEM), we write today to support the proposal to require utilities to submit a plan to the Minnesota Public Utilities Commission to implement grid-enhancing technologies to increase electricity transmission capacity. Additional transmission capacity will increase resiliency and reliability while helping to address transmission congestion – one of, if not the biggest, hurdles to overcome as Minnesota advances toward a clean energy future by 2040.

CEEM is an industry-led, nonpartisan, non-profit organization representing the business voice of energy efficiency and clean energy in Minnesota. We work to educate Minnesotans about the economic benefits of transitioning to a clean energy economy and are committed to delivering a 100% clean energy future where all Minnesota businesses and citizens will thrive. Our business membership is comprised of over 60 clean energy companies ranging from start-up businesses to Fortune 100 and 500 corporations that employ tens of thousands of Minnesotans across the state.

We need to ensure Minnesota is prepared for the growth and investment needed in the energy industry to meet our carbon-free goals by 2040. Implementing grid-enhancing technologies, like dynamic line rating, advanced power flow controllers, and topology optimization to increase electricity transmission, can be one of the many pathways to get there. These technologies cost-effectively increase transmission capacity, which is vital to allow more renewable projects to come online statewide and speed the transition to a clean energy economy in Minnesota.

Today, almost 60,000 Minnesotans work in clean energy, with over 8,700 of those jobs in renewable energy and almost 3,000 in grid and storage.[1] Implementing grid-enhancing technologies will significantly improve the resiliency and reliability of the state's congested grid, allow for greater investment in clean energy solutions of all scales, and continue to create good-paying jobs.

Thank you for the opportunity to share our support for this proposal. If you have any questions, please let us know.

Sincerely,

George Damian
Director of Government Affairs
gdamian@cleanenergyeconomymn.org

Chandra Her
Policy Associate
cher@cleanenergyeconomymn.org

[1] 2023 Clean Jobs Midwest Report: https://www.cleanenergyeconomymn.org/clean-jobs-midwest

February 27, 2024

To the honorable members of the Minnesota Legislature's Climate and Energy Finance and Policy Committee:

The undersigned organizations strongly support HF 3704.

MISO has the highest grid congestion of any electricity market in the country. In 2022, wholesale prices were $3.7 billion higher in MISO due to inadequate transmission capacity to deliver the lowest cost energy.

HF 3704 would require the utilities to evaluate and create plans to implement the lowest-cost, fastest-to-deploy solutions to grid congestion: Grid Enhancing Technologies. When deployed to increase transmission capacity, these technologies often pay for themselves within months by delivering cheaper generation – see Appendix A for examples. Dynamic line ratings, advanced power flow control and topology optimization can reduce congestion costs by around 40%.

While several utilities in Minnesota have been leaders in piloting dynamic line ratings in the U.S., this bill would ensure that Minnesota ratepayers start to see the benefits of *operational* deployments of *all* GETs needed to effectively mitigate grid congestion. Minnesota utilities recognize congestion as an ongoing challenge. Appendix B provides examples of how GETs can reduce congestion and improve reliability.

Grid Enhancing Technologies have been commercially available for many years, but utilities have been very slow to deploy these tools. Regulators across the country have identified Grid Enhancing Technologies as necessary tools for a lowest-cost clean energy transition and noted the need for policy to address utility disincentives and institutional inertia around grid modernization – see Appendix C.

This bill would catalyze the modernization of grid management and operations in Minnesota. Minnesota ratepayers would see lower electricity prices. Minnesota renewable energy generation would see less curtailment, and be able to deliver more clean power.

Signed:

Julia Selker
Executive Director
WATT Coalition

WATT COALITION
Working for Advanced Transmission Technologies

Brad Klein
Senior Attorney
Environmental Law & Policy Center

ENVIRONMENTAL LAW & POLICY CENTER

Isabel Ricker
Clean Electricity Director
Fresh Energy

Fresh Energy

James Gignac
Midwest Senior Policy Manager
Union of Concerned Scientists

Union of Concerned Scientists
Science for a Healthy Planet and Safer World

Jeremy McDiarmid
Managing Director and General Counsel
Advanced Energy United

ADVANCED ENERGY UNITED™

Markus Pitchford
Central Regional Director
Solar Energy Industries Association

SEIA Solar Energy Industries Association®

Stephan Heberer
CEO
Ampacimon

Ted Bloch-Rubin
Director of Business Development, Americas
Smart Wires

Pablo A. Ruiz, Ph.D.
CEO and CTO
NewGrid

Hilary Pearson
VP Policy & External Affairs
LineVision

Mitch Ball
Director Sales and Marketing
Atecnum Corporation

Appendix A - Case Studies and Modeling on the Value of Grid Enhancing Technologies

What are Grid Enhancing Technologies - resource

Map of Grid Enhancing Technology Deployments - The WATT Coalition collected member case studies of Dynamic Line Ratings, Advanced Power Flow Control and Topology Optimization from around the world.

June 1, 2023 - Assessing the Value of Grid Enhancing Technologies: Modeling, Analysis, and Business Justification

Idaho National Laboratory – Jake Gentle, Alex Abboud, Megan Culler, Chris Sticht, and Telos Energy - Sean Morash, Andrew Siler, Leonard Kapiloff, Derek Stenclik, Matthew Richwine

This report studies a key offshore wind interconnection point in southeast Massachusetts. It identifies Dynamic Line Ratings and Advanced Power Flow Control deployments to support reliability and reduce production costs under a modeled 2030 resource mix with over 50% renewable energy. Optimal deployment of the two technologies reduced renewable curtailment at the interconnection point by more than half. GETs deployments would pay for themselves in less than a year.

April 20, 2023 - Building a Better Grid: How Grid-Enhancing Technologies Complement Transmission Buildouts

T. Bruce Tsuchida, Linquan Bai, and Jadon M. Grove, The Brattle Group

This report investigates how Grid Enhancing Technologies synergize with traditional transmission infrastructure expansion by reducing costs and improving performance before, during, and after new lines are built. Before upgrades are underway, GETs can reduce the impact of the constraints that make new lines necessary by increasing transfer capacity on existing infrastructure by as much as 40%. During construction, GETs can be installed to mitigate outages – increasing capacity and rerouting power to minimize costs and disruptions. After new lines are in service, GETs can increase the utilization of the line. A model of the SPP system showed a 16% increased utilization of 345kV lines averaging. By cheaply increasing the utilization of lines, GETs increase the infrastructure's cost-benefit ratio, which will affect planning decisions.

October 2022 - A Guide to Case Studies for Grid Enhancing Technologies

Idaho National Laboratory

This report catalogs 28 deployments or models of Grid Enhancing Technologies and their impact. The examples show benefits in reducing the cost of transmission infrastructure and reducing transmission congestion and curtailment, resulting in net savings that far exceed the cost of the technologies.

February 2022 - Grid Enhancing Technologies: A Case Study of Ratepayer Impact U.S. Department of Energy

The model looked at Dynamic Line Ratings (DLR) and Power Flow Control (PFC) in upstate New York. They found complementary value in the two technologies, which achieved more together than individually. A combined DLR and PFC case avoided 42% of renewable curtailment. Only considering the value of enabling lower-cost generation, the GETs paid for themselves in about two years.

February 1, 2021 - Unlocking the Queue With Grid-Enhancing Technologies

T. Bruce Tsuchida, Stephanie Ross, and Adam Bigelow, The Brattle Group

The Brattle Group modeled an optimal deployment of Grid Enhancing Technologies using the Southwest Power Pool system in Kansas and Oklahoma and projects in the interconnection queue with signed interconnection agreements. They investigated how much new generation could economically interconnect if GETs unlocked additional capacity on the grid. Without GETs, 2,580 MW of wind and solar generation could interconnect in the next five years. With GETs, twice as much new generation could plug in - 5,250 MW. The GETs deployments would have one-time installation costs of $90 million, but the production cost savings would be $175 million annually. GETs would pay for themselves in 6 months of full operation, reduce emissions, and create jobs in the region.

Appendix B - Grid Enhancing Technologies solve problems for grid operators

Generator interconnection: lower costs and faster timelines, and reduce curtailment

- At the system level, GETs can double the capacity for new generation on existing infrastructure, per a study of the Kansas and Oklahoma systems and interconnection queues done by the Brattle Group.
- At the project level, GETS:
    - Reduce interconnection costs: WATT members report interconnection costs of $50-400 million for 1-3% projected line overloads, which would likely be resolved by DLR at a fraction of the cost.
    - Shorten study and construction timelines: new lines and other traditional upgrades can take years to design and deploy, while GETs can be operational within months. One WATT member reported being quoted a 7-year upgrade timeline.
    - Serve as bridge projects: GETs can provide additional provisional transmission service for projects awaiting traditional upgrades.
    - Fewer project withdrawals: high upgrade costs lead to projects dropping out of the queue, requiring restudies and increasing uncertainty around interconnection costs. By including GETs in interconnection studies, more projects should move through the queue more smoothly.
- GETs also reduce curtailment for operational projects. One DLR deployment in the UK is estimated to provide an increase in capacity averaging more than 45%, which will allow 500 MW more renewable power to be carried. National Grid U.K. estimates the project will save £1.4 million (roughly $1.75 million) in network operating costs.

Transmission planning: increase value of traditional transmission infrastructure and upgrades

- In an extension of the modeling of the SPP system in Kansas and Oklahoma, the Brattle Group found that GETs increased utilization of the 345kV lines in the states by 15-22%.
- An empirical analysis of the operational efficiencies & risks posed by static ratings, AAR, and DLR said that DLR exceeds static ratings 94-97% of the time with an average increase of 47% in line capacity.
- DLR could enhance the transmission capability up to 60% for selected transmission lines, per Alan Ettlinger, senior director of Research, Technology Development and Innovation at the New York Power Authority.
- Smart Wires Inc. power flow control technology will allow an addition 170 MW of power to be transferred into New South Wales and is expected to deliver net benefits of up to $268 million to electricity customers.
- National Grid UK is deploying 48 Smart Wires Inc. SmartValve power flow control devices at three substations. These devices will enable 1.5 GW of new renewable energy in that system, enough to power 1 million homes and deliver net savings of over $500 million.
- National Grid ESO finds topology optimization increases transfer capability by 3-12% on large interfaces.
- Topology optimization studies in PJM, MISO, SPP and ERCOT markets show reduced congestion costs by 25-50% and reduce renewables curtailment by 50%.

Transmission planning: defer upgrades or provide bridge service while large infrastructure is built

- In 2006, AEP installed real-time line ratings on a congested 138 kV transmission line in Texas, which allowed them to avoid a $20 million upgrade which would have quickly become a stranded asset as new lines were built to serve increased wind generation.
- PPL evaluated multiple technologies to resolve congestion, finding that DLR could solve the issue for less than $1 million, compared to $20 million for reconductoring, and $40 to $60 million for rebuilding transmission. DLR would also be operational in less than 1 year with no outages, compared to 2 to 3 years with extended outages for reconductoring, and 3 to 5 years with extended outages for rebuilding transmission. DLR was installed.

- A DLR project in upstate New York will avoid the need to rebuild 26 miles of transmission lines. With an estimated cost of $3.2 million, the project budget is less than the average cost of rebuilding just a single mile of a 115 kV line in the area.

Reliability: mitigate outages and improve visibility and flexibility across the grid

- APFC was used to mitigate an outage in Colombia: The annual costs of the modular FACTS devices were estimated to be between $1.5 million and $4 million, and the savings induced by avoiding redispatch during the 3.5 year outage period were estimated to be over $20.5 million a year, therefore suggesting a savings of over $70 million (net-savings of $61.5 million to $69.7 million) depending on when the construction starts.
- MISO implemented a reconfiguration solution identified by NewGrid to mitigate costs from a major transmission outage in Minnesota. The reconfiguration successfully and reliably increased throughput by up to 56% in the area. Conservatively assuming a similar amount of congestion (typically congestion would increase during the summer with higher loads), the reconfiguration is estimated to have saved about $40 million in regional market costs during the nine months-period.
- The value of DLR was demonstrated during the 2018 "Bomb Cyclone" -- a 13-day cold snap that affected much of the Northeast U.S. ISO-NE was able to increase their transmission line ratings during the storm because of DLR, and thus avoid significant congestion costs.

Appendix C - Minnesota Reformer: Federal, state regulators prod utilities to consider technology for grid upgrade

The 'grid-enhancing' tech — popular in other countries — could reduce the need for new wires

BY: ROBERT ZULLO - AUGUST 24, 2023 6:00 AM

Available online: https://minnesotareformer.com/2023/08/24/federal-state-regulators-prod-utilities-to-consider-technology-for-grid-upgrade/

A PPL Electric Utilities employee installs a dynamic line rating sensor onto a transmission line in Pennsylvania from a helicopter. The sensors allow utilities to take into account wind speed, cloud cover and other conditions to determine if a line has more capacity. Photo Courtesy of PPL Electric Utilities.

Of the many challenges confronting the nation's aging, straining electric grid, the need for a lot of new transmission capacity is among the most pressing, experts and policymakers say.

Earlier this year, the U.S. Department of Energy said the nation will need thousands of miles of new lines to better link regions to handle extreme weather, reduce costs and connect new renewable energy projects.
But building a new interregional transmission line can take a decade or more — chiefly because of siting and permitting delays, local resistance, planning problems, cost allocation and other obstacles.

And while Congress has taken some steps on permitting reform (in this summer's debt limit deal), there's a suite of technologies that proponents and some state and federal regulators agree could get more out of the existing transmission system right now and potentially reduce the need for new wires.
They're called "grid-enhancing technologies," or GETs in industry shorthand, and in many cases they've been embraced elsewhere but have been slower to take root in the United States.

"If we don't squeeze every drop out of the existing system it's going to be a tough sell as we consider the costs involved in transmission expansion," said Dan Scripps, chair of Michigan's utility commission, at a Federal Energy Regulatory Commission task force meeting last month. "And I believe that grid-enhancing technologies can help us do that to maximize the value from the infrastructure that we have today."

What are GETs?

Grid-enhancing technologies include a variety of tools to maximize the ability of the grid to handle the flow of electricity. They include sensors, power-flow devices, software and hardware that can better deliver real-time weather data and other technologies like topology optimization, which can identify the best grid configurations and route power flow around bottlenecks. Think of the electric grid as a road system and grid-enhancing technologies as traffic control devices and variable speed limits that can help alleviate congestion, a Department of Energy paper says.

And congestion on the nation's electric grid is a real problem. Defined broadly, congestion in electric terms means any time physical constraints on the power system prevent the cheapest power from flowing to customers, which, naturally, raises costs.

"For example, the flow of power may be restricted by the maximum thermal limit of a transformer or power line conductor," the Department of Energy says. "Therefore, operators are forced to reroute power through less optimal

paths and rely on more expensive power generation, like conventional fossil fuels, while curtailing renewable wind or solar to safely meet the demand of their customers."

A report released in July by Grid Strategies, a consulting firm that works to integrate renewable power into the electric grid, found that congestion costs (after doubling between 2020 and 2021) rose to $12.1 billion in 2022, an increase of 56% from 2021, in regions of the country controlled by six large regional transmission organizations. By extrapolating that increase to the rest of the U.S., the firm estimated that the total cost to electric customers of congestion in 2022 was nearly $21 billion.

"The best way to reduce transmission congestion is to increase transmission capacity. However, very little of transmission spending is on new large-scale, high-voltage transmission lines," Grid Strategies wrote. "In addition, few U.S. utilities have adopted dynamic line ratings, advanced power flow control or topology optimization (together known as Grid Enhancing Technologies or GETs) to make more efficient use of existing grid infrastructure."

Why adoption of GETs has lagged

There was broad consensus at the seventh meeting last month of FERC's Joint Federal-State Task Force on Electric Transmission that GETs could yield big cost and reliability benefits for grid operators and electric customers.

"Perhaps the most compelling case to me for these technologies is that right now they can reduce grid congestion allowing our markets to consistently access lower cost power and to respond to real time reliability issues. And that's particularly important when we're dealing with extreme weather events," said Andrew French, a member of the Kansas Corporation Commission who serves on the task force.

So why aren't these types of technologies more prevalent in the United States?

The biggest reason, grid experts say, is how utilities earn money for grid upgrades and how their performance is measured.

"Utilities are not necessarily directly economically impacted by the inefficient use of transmission infrastructure," said Darcie Houck, a California utilities commissioner who also serves on the task force, adding that often utilities pass on congestion costs to power generators and customers. "Utilities are financially motivated to build more capital-intensive transmission projects to grow their rate base which they earn a return on. … GETs may defer or negate the need for such capital projects thereby reducing utility revenues."

Part of the reluctance also stems from a need for grid operators to "validate the technologies on their own system because there are not references publicly available on performance, integration, and deployment," the Idaho National Laboratory wrote in a report last year.

Also creating hesitance is a lack of industry standards and specifications for some of the technologies, as well as potential security concerns, said Andrew Phillips, vice president of transmission and distribution at the Electric Power Research Institute, during the FERC task force meeting.

"When a new technology comes to market, we need a spec to buy to. We need to be confident it's going to last 30 or 40 years. And that's a really important thing and often a barrier," Phillips said, adding that EPRI, a research and development nonprofit, has developed testing for some technologies like advanced conductors and is working on standards for others.

"We need an industry accepted way of evaluating these technologies, incorporating them into our plans and then exercising those plans."

Yet, despite the past resistance, some see attitudes among utilities changing.

“Ratepayers aren’t going to pay for twice as much grid as we have today so they have to look at other solutions,” said Julia Selker, chief operating officer at Grid Strategies as well as the executive director of the WATT Coalition, which is pushing for broader adoption of GETs. “I see a mindset shift.”

A push from FERC and the states

FERC has taken recent steps to get more out of the existing transmission system and push for consideration of new technologies.

In 2021, FERC issued a final rule requiring transmission providers to use “ambient-adjusted ratings” for transmission lines that take into account actual air temperature and other weather conditions, instead of limiting a line’s capacity based on conservative, worst-case assumptions.

The order also opened the door for transmission owners to explore “dynamic line ratings,” a more real-time rating that can account for other factors that might increase line capacity, like wind speed, cloud cover and other conditions.

This summer, PPL Electric, which has about 1.4 million customers in eastern and central Pennsylvania, won an industry award for being the first American electric company to install and integrate a dynamic line rating system within its transmission management and market operations. The technology will save its customers’ an estimated $23 million per year in congestion costs, the company says. A 2021 report commissioned by the WATT Coalition contends that deploying GETs nationwide would save more $5 billion a year in energy costs, against an upfront investment of $2.7 billion in the first year.

In July, as part of its effort to help clear backlogs of new power projects seeking to connect to the grid, FERC also required transmission providers to consider grid-enhancing technologies in their interconnection studies. And another proposed rule could also require their consideration in transmission planning.

“GETs belong in long-term planning,” Selker said. “If you’re not considering GETs than you’re not making the most efficient decisions for customers.”

But there’s been some reluctance among FERC commissioners to mandate any specific technology.
“We need to really listen to the engineers on this,” Commissioner Mark Christie, a former Virginia utility regulator, said. “There’s tremendous benefit if you get it right. There’s not benefit if you don’t.”

In a concurrence filed on the new interconnection rule, Christie acknowledged the vested interest of transmission owners in building “costly new transmission assets” instead of potentially less expensive technologies that could get more out of existing lines. But he also said there was “plenty of rent seeking” as well by companies who sell grid-enhancing technologies and the organizations they fund who stand to profit from any regulation mandating their use.

“Striking the appropriate balance – one that is in the public interest – is a challenge,” Christie said.
But there’s also a role for states. Selker said utility regulators in several states, including Michigan, Nevada and North Carolina, have asked their companies to report on their pursuit of federal funding for grid upgrades. There’s about $14 billion in federal funding available to states, tribes and utilities over the next several years for grid-enhancing technologies and other upgrades.

Caitlin Marquis, a managing director at Advanced Energy United, a trade group for clean energy companies, called the FERC requirement that GETs be considered in interconnection a small first step.

“There is a requirement to evaluate these technologies, there is a reporting requirement, but there is a lot left to transmission providers’ discretion. … It’s to be seen whether it results in increased use of GETs,” she said. “GETs is definitely an area where there is state interest and states could definitely be playing a bigger role in ensuring they get considered.”

Several state regulators on the FERC task force took a similar view.

“We need to squeeze every bit of value out of our existing system for the benefit of our ratepayers,” said Kimberly Duffley, a North Carolina utilities commissioner. “One thing state commissions can do is evaluate their existing rules to ensure they’re creating conditions for GETs to be considered where appropriate.”

Marissa Gillett, chair of the Connecticut Public Utilities Regulatory Authority, said it’s up to state and federal regulators to develop shared savings and other programs to push utilities to consider “non-wires” grid solutions, combining “a healthy disincentive with potential incentives.”

“Our ratepayers need us as regulators, whether state or federal level, to define the rules of the road and to insist on a fuller accounting of how an incumbent [utility] lands on a capital intensive solution,” she said. “I do think we need to go beyond the simple instructions that GETs should be considered.“

She noted that utility decisions on what to build aren’t made just on engineering merits in a vacuum.

“We should all trust but verify but also encourage and enforce if necessary,” she said.

Xcel Energy®

414 Nicollet Mall
Minneapolis, Minnesota 55401-1993

Dear Members of the House Climate and Energy Policy and Finance Committee:

Thank you for the opportunity to provide input on House File 3704. The use of grid-enhancing technologies (GET) is an increasingly important development on the transmission grid. We thank Rep. Kraft for introducing this important subject to the legislature and look forward to working with him, the Committee, MISO and other transmission owners on developing policies in this area.

Xcel Energy is currently evaluating dynamic line ratings on our transmission system and is excited about the potential benefits. There are, however, some implementation and cost issues that need to be addressed as the bill is discussed.

1. Congestion on the transmission system is an issue that cannot be solved without MISO's involvement and support. The transmission grid is fully interconnected among utilities in the MISO footprint. The benefits of expansion or upgrade are often dependent on upgrades made by utilities acting collaboratively. The deployment of specific technology is often only as good as the next limiting factor on the system. In light of this we recommend that consideration of GET incorporates planning across MISO rather than on a utility-by-utility basis.

2. MISO's cost sharing process must be considered when implementing grid-enhancing technologies. HF 3704 should recognize that the value of grid-enhancing technologies flows to more than just the utility that is installing it. MISO's cost sharing process, which applies with all current transmission upgrades, must be considered when conducting cost/benefit analyses.

3. Utility consideration of GET should be addressed in its bi-ennial transmission plan. We currently file a bi-annual transmission plan with the PUC. Much of the information included in the required filing section of the bill is included in that filing. We recommend that the legislature identify those issues that are not in the bi-annual transmission plan and include them there rather than creating a new and separate process.

4. Planning for future congestion is challenging. Forward-looking estimates of congestion can be very speculative. For example, it is hard to predict locations four or five years in the future because load and investments are continuously changing. We can identify historic areas of congestion and congestion on the system today, but if electric load substantially increases in that area, that alone could mitigate the congested location. We believe that planning for GET is best done in the biennial transmission plan along with other investments considered there.

5. We recommend that a discussion of how the MISO wholesale energy markets work be included in consideration of this bill. FERC Order 881 will require adjustment to be made by

MISO in the near future, so we need to make sure we understand how this will be implemented. It is critical to ensure market readiness as we implement GETs.

This bill is very helpful in jump-starting the larger discussions around FERC Order 881, dynamic line ratings, and the various limiting elements contained in the transmission system. We look forward to working on these issues in partnership with you, MISO, and our fellow transmission owners, but ask that we address some of these issues before the bill moves ahead.

Sincerely,

/s/

BRIA SHEA
REGIONAL VICE PRESIDENT, PLANNING AND POLICY

MISSOURI RIVER® ENERGY SERVICES

3724 West Avera Drive
PO Box 88920
Sioux Falls, SD 57109-8920
Telephone: 605.338.4042
Fax: 605.978.9360
www.mrenergy.com

February 28, 2024

RE: HF 3704

Representative Patty Acomb, Chair
House Climate and Energy Committee
St. Paul, MN

Dear Representative Acomb:

On behalf of Missouri River Energy Services (MRES) and our 25 municipal electric utility members in Minnesota, we wish to express our concerns with HF 3704. While MRES continues to work on transmission upgrades and alleviating congestion on behalf or our members and through the Grid North Partners, this bill would only add costs and administrative burdens to a process already underway through the Federal Energy Regulatory Commission and the Regional Transmission Organizations (RTOs).

First, **transmission congestion studies should be done at the regional or federal level**. HF 3704 would require Minnesota utilities to do transmission studies in Minnesota. It should be noted that Minnesota is part of two RTOs—the Midcontinent Independent System Operator (MISO) and the Southwest Power Pool (SPP). Combined, these two RTOs cover transmission over twenty-plus states. These RTOs fall under the regulatory oversight of the Federal Energy Regulatory Commission or FERC. These regional and federal entities are working to ease congestion and increase efficiency across the transmission grid; and utilities across the RTOs are participating in the process. The past studies led by the RTOs led, in part, to the Tranche 1 transmission line projects. While many of these projects are being built in and across Minnesota, the impacts are regional and cross into other states. Additionally, although utilities in Minnesota may identify a congestion problem affecting Minnesota, the solution may lie in action to be taken in another state. Issues in Iowa or Wisconsin could be the key to relieving congestion in Minnesota. Therefore, the RTOs are the optimal entities to do congestion studies to assure that the broader grid is taken into consideration and that any solutions are the most efficient for the regional needs.

Second, **the timing of this bill does not correspond to the work being done by the RTOs and FERC**. In July of 2023, FERC issued a rulemaking (RM22-14-000) on the interconnection of new

transmission systems—and stated specifically that it was NOT creating a presumption in favor of alternative transmission technology like Grid Enhancing Technologies (GETS). FERC commissioners noted that some GETs work somewhere, but not everywhere…some work sometimes, some only work in certain conditions, some don't work at all and some are only cost-effective in very specific cases. FERC and the RTOs have also noted that GETS may only be a band-aid and not a long-term, well-planned solution to regional issues. FERC will be considering certain types of GETS like Dynamic Line Ratings at a later time. FERC will also be considering other solutions than GETS that may provide a better outcome.

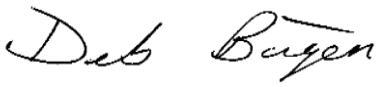
Third, **the bill presumes GETS as the solution.** In fact, there could be other more traditional and generally not controversial solutions. This could include upgrade of various components in a substation and heightening of towers or replacement with higher towers. Sometimes there are relatively low hanging fruit that may not come with any additional operations and maintenance tasks…or **costs**. Again, the utilities, in conjunction with the RTOs are looking into and employing these solutions.

Finally, MRES does not have the internal staffing to perform the type of analysis that would be prescribed by the bill. It would be costly to ramp-up to do these studies—requiring the hiring of consultants. It could also require the hiring of additional staff. As MRES employs cost-based rates, these additional expenses will be passed on to the municipal rate-payers. Because the required analysis under the bill may be later pre-empted by other regional analysis or approaches, the bill could result in rate-payer money being spent on analysis that does not result in any immediate or tangible benefits.

We understand that the bill author is introducing an amendment that potentially could exclude MRES from this bill based on the amount of transmission lines owned within Minnesota. We have not seen an official version of this legislation and are not certain whether it will fully address our concerns. We appreciate Rep. Kraft's efforts to work with him on this and look forward to continued discussions regarding this legislation.

Thank you for allowing MRES to testify on HF 3704 and we urge that the state consider a more regional approach led by FERC and the RTOs.

Sincerely,



Deb Birgen
Vice-President, Government Relations