SENATE
STATE OF MINNESOTA
NINETY-THIRD SESSION

S.F. No. 3683

(SENATE AUTHORS: MCEWEN)

DATE	D-PG	OFFICIAL STATUS
02/15/2024	11597	Introduction and first reading Referred to Energy, Utilities, Environment, and Climate

A bill for an act

relating to energy; requiring submission of a plan to the Public Utilities Commission regarding the implementation of grid enhancing technologies to increase electricity transmission capacity; proposing coding for new law in Minnesota Statutes, chapter 216B.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. **[216B.247] GRID ENHANCING TECHNOLOGIES PLAN.**

Subdivision 1. **Definitions.** (a) For the purposes of this section, the following terms have the meanings given.

(b) "Capacity" means the maximum amount of electricity that can flow through a transmission line while observing industry safety standards.

(c) "Congestion" means a condition in which a lack of transmission line capacity prevents the delivery of the lowest-cost electricity dispatched to meet load at a specific location.

(d) "Dynamic line rating" means hardware or software used to calculate the thermal limit of existing transmission lines at a specific point in time by incorporating information on real-time and forecasted weather conditions.

(e) "Grid enhancing technology" means hardware or software that reduces congestion or enhances the flexibility of the transmission system by increasing the capacity of a high-voltage transmission line or rerouting electricity from overloaded to uncongested lines, while maintaining industry safety standards. Grid enhancing technologies include but are not limited to dynamic line rating, advanced power flow controllers, and topology optimization.

(f) "High-voltage transmission line" has the meaning given in Minnesota Statutes, section 216E.01, subdivision 4.

(g) "Line rating methodology" means a methodology used to calculate the maximum amount of electricity that can be carried by a high-voltage transmission line without exceeding thermal limits designed to ensure safety.

(h) "Power flow controller" means hardware and software used to reroute electricity from overloaded transmission lines to underutilized transmission corridors.

(i) "Thermal limit" means the temperature a transmission line reaches when the electric current flow heats the metallic conductor to a point that weakens the metallic conductor's mechanical strength, causing excessive sagging of the transmission line.

(j) "Topology optimization" means a software technology that uses mathematical models to identify reconfigurations in the transmission grid in order to reroute electricity from overloaded transmission lines to underutilized transmission corridors.

(k) "Transmission system" means a network of high-voltage transmission lines owned or operated by an entity subject to this section that transports electricity to Minnesota customers.

Subd. 2. **Filing required.** (a) An entity that is required to submit a transmission projects report to the commission under Minnesota Statutes, section 216B.2425 must, no later than December 31, 2024, submit a filing to the commission that:

(1) identifies locations on the entity's transmission system where congestion has occurred for a total of 50 hours per year or more during the last three years, or is likely to occur during the next five years;

(2) estimates the frequency of congestion at each location and the increased cost to ratepayers resulting from the substitution of higher-priced electricity;

(3) evaluates the technical feasibility and estimates the cost of installing one or more grid enhancing technologies to address each instance of grid congestion identified in clause (1), and projects the grid enhancing technology's efficacy in reducing congestion;

(4) analyzes the cost-effectiveness of installing grid enhancing technologies to address each instance of congestion identified in clause (1) by using the information developed in clause (3) to calculate the payback period of each installation, using a methodology developed by the commission;

(5) proposes an implementation plan, including a schedule and cost estimate, to install grid enhancing technologies at each congestion point at which the payback period is less than or equal to a value determined by the commission, in order to maximize transmission system capacity; and

(6) explains the entity's current line rating methodology.

(b) The commission must:

(1) review, and may approve, reject, or modify, the plan; and

(2) issue an order requiring implementation of an approved plan.

(c) A public utility that makes a filing under paragraph (a) must make subsequent filings to the commission that satisfy the requirements of that paragraph within 90 days of the date the commission issues an order to the public utility in an integrated resource plan proceeding under Minnesota Statutes, section 216B.2422.

(d) An entity that makes a filing under paragraph (a) and is not a public utility must make subsequent filings to the commission that satisfy the requirements of paragraph (a) no less than every three years, at a time determined by the commission.

Subd. 3. **Cost recovery.** Notwithstanding any other provision of this chapter, the commission may approve cost recovery under Minnesota Statutes, section 216B.16, including an appropriate rate of return, of any prudent and reasonable investments made or expenses incurred by a public utility to administer and implement a grid enhancing technologies plan approved by the commission under this section.

EFFECTIVE DATE. This section is effective the day following final enactment.