



500 West Russell St  
Sioux Falls, SD 57104

October 21, 2022

**--Via Electronic Filing--**

Ms. Patricia Van Gerpen, Executive Director  
South Dakota Public Utilities Commission  
Capitol Building, 1<sup>st</sup> Floor  
500 E. Capitol Ave.  
Pierre, SD 57501-5070

RE: COMMENTS  
REQUEST FOR COMMENT ON DEMAND RESPONSE RATE MECHANISMS  
DOCKET NO. AA22-003

Dear Ms. Van Gerpen:

In response to the South Dakota Public Utilities Commission's July 20, 2022 Order in the above referenced docket, Northern States Power Company, doing business as Xcel Energy, (the Company) submits the attached responses to the Commission's questions regarding Demand Response as it relates to opportunities made available through the Infrastructure Investment and Jobs Act.

Please add the following people to the service list for this docket:

Christine Schwartz  
Regulatory Administrator  
Xcel Energy  
414 Nicollet Mall, 401-7  
Minneapolis, MN 55401  
[regulatory.records@xcelenergy.com](mailto:regulatory.records@xcelenergy.com)

Steve Kolbeck  
Principal Manager, South Dakota  
Xcel Energy  
500 West Russell Street  
Sioux Falls, SD 57104  
[steven.t.kolbeck@xcelenergy.com](mailto:steven.t.kolbeck@xcelenergy.com)  
605-339-8350

Please contact Steve Kolbeck at [steven.t.kolbeck@xcelenergy.com](mailto:steven.t.kolbeck@xcelenergy.com) if you have any questions regarding this filing.

SINCERELY,

/s/

STEVE KOLBECK  
PRINCIPAL MANAGER

Enclosure

PUBLIC UTILITIES COMMISSION  
STATE OF SOUTH DAKOTA

|                |               |
|----------------|---------------|
| Chris Nelson   | Chairperson   |
| Kristie Fiegen | Vice Chairman |
| Gary Hanson    | Commissioner  |

IN THE MATTER OF THE SOUTH DAKOTA  
PUBLIC UTILITIES COMMISSION DEMAND  
RESPONSE INVESTIGATION

DOCKET NO.: AA22-003

**Initial Comments**

Northern States Power Company, doing business as Xcel Energy, (the Company) submits the following comments in response to the Commission's July 20, 2022 Order in the above referenced docket. In that Order, the Commission requested each electric public utility with operations in South Dakota to provide written comments regarding the standard for promoting demand response and demand flexibility practices, per the amended Public Utility Regulatory Policies Act of 1978.

**I. BACKGROUND**

Pursuant to the Infrastructure Investment and Jobs Act (IIJA), the Public Utility Regulatory Policies Act was amended by adding the following standard:

*Each electric utility shall promote the use of demand-response and demand flexibility practices by commercial, residential, and industrial customers to reduce electricity consumption during periods of unusually high demand.*

The Amendment provided that each State regulatory authority should consider establishing rate mechanisms to allow an electric public utility to timely recover the costs of promoting demand response and demand flexibility practices. Consideration of the standard, or a hearing for consideration, must be set within one year of the date of enactment. Consideration must provide a determination within two years of the date of enactment unless prior state actions were taken to address the standard.

## II. REQUESTED COMMENTS

In its Order, the Commission noted that it would be in the public interest to review past action taken regarding demand response and demand flexibility and consider available opportunities from the promotion of demand response and demand flexibility practices. Accordingly, the Commission requested comments on the following areas:

- A. *A report of existing demand response and demand flexibility practices used by commercial, residential, and industrial customers to reduce electricity consumption during periods of unusually high demand for service to South Dakota as well as adjoining jurisdictions,*
- B. *Current rate mechanisms employed for timely recovery of the costs of demand-response and demand flexibility practices,*
- C. *Previous actions taken by the Public Service Commission or State Legislature to implement the standard or a comparable standard,*
- D. *Opportunities to further promote the use of demand-response and demand flexibility practices to reduce electricity consumption during periods of unusually high demand, and*
- E. *Any other information that the Commission should consider.*

Following are the Company's responses to each of these requests.

- 
- A. *A report of existing demand response and demand flexibility practices used by commercial, residential, and industrial customers to reduce electricity consumption during periods of unusually high demand for service to South Dakota as well as adjoining jurisdictions*
- 

The Company has engaged in demand response efforts since the early 1990's. These programs allow customers to designate availability for load curtailment. Traditionally, demand response referred to the shedding of resources whereas the programs enabled shedding or curtailment of customer load during system peak conditions or for contingency events. The Company has recently begun to pilot other types of demand response activities, specifically those allowing demand flexibility. In the remainder of this section, we provide details regarding the different types of demand response, current customer offerings,<sup>1</sup> and the future demand response efforts.

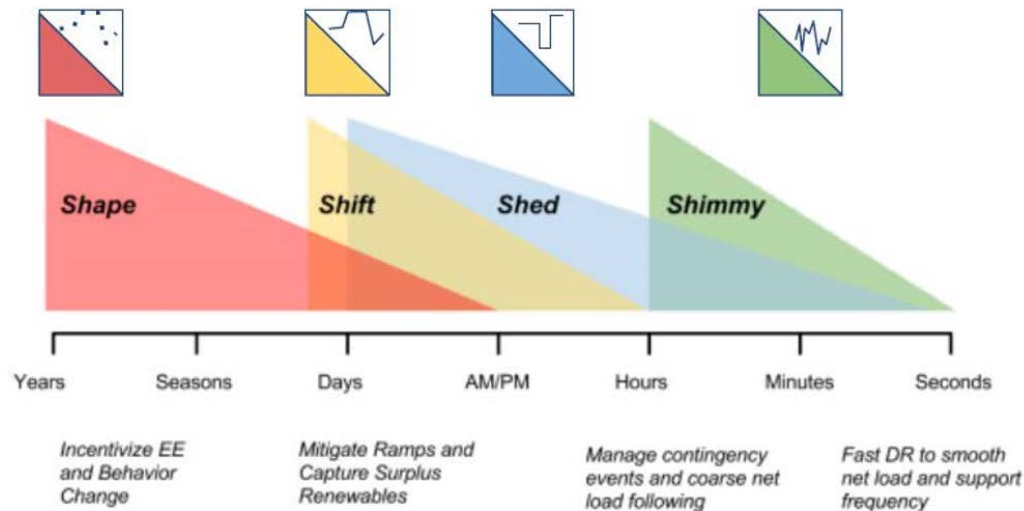
---

<sup>1</sup> While the Company has programs across all our jurisdictions, we provide program details for Minnesota, North Dakota, and South Dakota, served by our NSPM operating company.

## 1. *Types of Demand Response Efforts*

Figure 1 below reflects the different planning and operational time horizons of demand response and flexible load, as well as the types of grid services that flexible load can provide.

**Figure 1: DR Service Across Timescales to Meet Future Grid Needs<sup>2</sup>**



Traditionally, demand response was a mixture of load management options enabling a utility to call on customers to reduce load – many times by a switch of a button. However, as technology has advanced and customer needs have evolved, we have adjusted our demand response portfolios. The Lawrence Berkeley National Laboratory study “2025 Demand Response Potential Study—Charting California’s Demand Response Future” is a notable reference in the categorization of demand response.

The Company’s traditional demand response portfolio falls into the “shed” category. These programs were developed to shed or curtail load during system peak conditions and are often utilized for contingency events. In recent years, these programs have been adjusted to include some economic opportunities and “geotargeting.” These reductions are accomplished through programs such as the Saver’s Switch direct load control (air-conditioning and/or water heating) program and the Peak-Controlled Service tariffs for the Electric Rate Savings program.

<sup>2</sup> “2025 Demand Response Potential Study—Charting California’s Demand Response Future: Final Report on Phase 2 Results,” Lawrence Berkeley National Laboratory, March 1, 2017, pg. 3-14. Found at: [2025 California Demand Response Potential Study - Charting California's Demand Response Future: Final Report on Phase 2 Results | Building Technology and Urban Systems Division \(lbl.gov\)](https://www.lbl.gov/2025-California-Demand-Response-Potential-Study-Charting-California's-Demand-Response-Future-Final-Report-on-Phase-2-Results)

Load flexibility describes a variety of these options, but usually focuses on shift, shape, and shimmy as non-traditional demand response efforts, described below.

- Programs that “shape” load operate over seasons and years to reshape the overall load and are not responsive to system events. These programs help mitigate power costs by reducing the amount of MW to be procured or built to meet electric demand. This category includes energy efficiency, behavior programs, and rates such as time-of-use pricing.<sup>3</sup>
- Expanding load flexibility begins to move the Company into “shifting” resources. “Shifting” demand response products encourage the movement of energy consumption to times of higher demand when there is a surplus of renewable generation. This is similar to “shaping” load but is accomplished through incentives that shift as needed rather than a permanent adjustment. This can be accomplished through, as examples, thermal energy storage or optimizing when customers charge an electric vehicle.
- As technologies improve and costs decrease, flexible load offerings will be able to evolve to provide grid services in real time as part of a dynamic portfolio used to optimize benefits across capacity, energy, and flexible products. “Shimmy” products, or what others may refer to as “fast-response demand response,” dynamically adjust demand on the system to alleviate short-run ramps and disturbances at timescales ranging from seconds up to an hour.

## *2. Demand Response Offerings*

The Company offers several demand response programs. Table 1 summarizes these offerings by customer application (commercial, residential, and industrial customer types).

---

<sup>3</sup> Xcel Energy does not count energy efficiency resources as part our Demand Response portfolio.

**Table 1: Xcel Energy Demand Response Offerings**

| <b>Program Name</b>          | <b>Description</b>  | <b>Customer Types</b>      | <b>State</b> | <b>Demand Response Type</b> |
|------------------------------|---|----------------------------|--------------|-----------------------------|
| <b>Active Programs</b>       |   |                            |              |                             |
| <b>AC*Rewards</b>            | AC Rewards seeks to reduce AC load during demand peaks. Participants can receive up-front rebates for enrolling a qualifying thermostat, and receive annual bill credits, in exchange for allowing the Company to temporarily adjust the set point on the thermostat during control events. Currently, certain thermostats from Honeywell, Ecobee, and Emerson are eligible for enrollment.   | Residential/Small Business | SD, MN       | Shed                        |
| <b>Electric Rate Savings</b> | The Electric Rate Savings program is offered to any business customer that can reduce their electric loads during control periods by at least 50 kW. In return for reducing their loads, they receive a monthly discount on their demand charges. Participants save as much as 50 percent on demand charges over the year. Electric Rate Savings participants are served with our Peak Controlled Service and Peak Controlled Time of Day Service tariffs. Further discounts are available for also controlling loads when energy costs are high, though our Tier 1 Energy Controlled Rider tariff.   | Commercial, Industrial     | ND, SD, MN   | Shed                        |
| <b>Peak Partner Rewards</b>  | The Peak Partner Rewards program is offered to any business customer that can reduce their electric load during control periods by at least 25 kW between June and September. With Peak Partner Rewards, customers can receive credits on electric bills for agreeing to reduce electric usage during periods of peak energy demand, such as hot summer days. Customers will receive additional bill credits when they reduce their electric usage by their agreed upon amount or more during control periods   | Commercial, Industrial     | MN           | Shed                        |
| <b>Saver's Switch</b>        | Saver's Switch® for Business is a load management program available to business electric customers with central air conditioning. Participating customers receive a monthly discount on their June through September bills. In exchange for the discounts, participants allow Xcel Energy to cycle their air conditioner on and off during control events, which typically occur on hot, humid summer days. Air conditioners are controlled via a radio operated switch installed by a licensed electrician on or near the customer's air conditioner. The switches utilize an adaptive algorithm designed to ensure a 50 percent reduction in air conditioner load during a control event. | Residential/Small Business | ND, SD, MN   | Shed                        |

| <b>Pilot Programs</b>                                  |  |                        |              |                             |
|--|--|------------------------|--------------|-----------------------------|
| <b>Program Name</b>                                    | <b>Description</b>   | <b>Customer Types</b>  | <b>State</b> | <b>Demand Response Type</b> |
| <b>EV Optimization Pilot</b>                           | Will study the management of the grid impacts of electric vehicles by working with customers to provide schedule options for their daily EV charging. The schedule options ensure charging occurs outside the Company's system peak and are designed to stagger charging times to avoid demand spikes during the off-peak period. (2022 Anticipated Launch)  | Commercial/Residential | MN           | Shift                       |
| <b>Peak Flex Credit Pilot</b>                          | Dispatchable, load-shedding program for commercial customers that provides additional flexibility and optionality to customers who want to design program parameters to work within their operational and business needs. This pilot provides pricing for both peak control events as well as buy-through options for economic control events and includes a tranche of load intended for third-party aggregation. (2022 Anticipated Launch)   | Commercial, Industrial | MN           | Shed/Shift                  |
| <b>Load Shifting: Commercial Thermal Storage Pilot</b> | Provides study incentives provided to commercial customers for the installation and operation of thermal storage solutions, as well as ongoing credits for the associated daily load shifting. (2022 Anticipated Launch)   | Commercial, Industrial | MN           | Shift                       |
| <b>Residential Time of Use Pilot</b>                   | Pilot to study three-part time-varying residential rate design for selected customers, with the goal of shifting load away from system peaks through price signals. Participants are provided information from AMI technology that can help them change usage behaviors.   | Residential            | MN           | Shape                       |
| <b>General Time of Use Pilot</b>                       | Pilot will study new time-varying rate design for a number of commercial and industrial customers. Features both a three-part energy rate and a demand charge differentiated by peak periods. Company will study customer response to rate signals and will provide additional information to participating customers to allow them better information to tailor their energy usage. This pilot is paired with the Critical Peak Pricing Pilot below and is intended to inform the future design of commercial and industrial rates. | Commercial, Industrial | MN           | Shape                       |
| <b>Critical Peak Pricing Pilot</b>                     | Pilot will study new time-varying rate design for a number of commercial and industrial customers. Features a three-part rate that incorporates energy and demand charges into a single volumetric rate. This rate also features a critical peak pricing component, where the Company calls events during times of extreme system peak. This pilot is paired with the General Time of Use Pilot above and is intended to inform the future design of commercial and industrial rates.  | Commercial, Industrial | MN           | Shape/Shift                 |

---

*B. Current rate mechanisms employed for timely recovery of the costs of demand-response and demand flexibility practices.*

---

The Company is allowed to recover the costs of demand response and demand flexibility programs either through rate riders, base rates, or a combination of the two in the states where programs have been approved. Depending on the state, these rates are evaluated periodically (typically on an annual basis or when a base rate case is



filed) for prudence and for compliance with any state policy objectives for demand response and demand flexibility. In recognition of the inherent conflict with traditional utility business models some states allow for performance incentive mechanisms. The most common incentive mechanisms allow the Company to earn a percentage of the societal net benefits (i.e., those benefits that accrue to all customers for avoiding the need to serve the load). Other incentive mechanisms allow for a return on program spending such as approved in South Dakota for new demand response resources under our Demand Side Management (DSM) program.

---

*C. Previous actions taken by the Public Service Commission or State Legislature to implement the standard or a comparable standard*

---

The Commission has approved three demand response or demand flexibility programs and their related costs in South Dakota through previously filed rate cases. They include Electric Rate Savings (specifically, Peak Controlled Services and Tier 1 Energy Control Rider) and Saver's Switch (Air Conditioning and Water Heater Rider cycling). In addition, South Dakota has approved the AC Rewards program through our DSM offering; these incentives differ from the others and are not recovered through base rates. The Company is not aware of any legislative actions in South Dakota relating to demand response or flexibility.

---

*D. Opportunities to further promote the use of demand-response and demand flexibility practices to reduce electricity consumption during periods of unusually high demand*

---

The Company continues to expand its demand response portfolio. These efforts have expanded into load flexibility as we grow demand response as a resource and gear our programs also towards utilizing demand to manage intermittent renewable resources, provide programs designed to increase customer engagement, lower customer bills, expand knowledge of energy usage to customers, and contribute to further discussions of how flexible load can impact the future of the grid.

Load flexibility opportunities help individual customers manage their electric bills, support public policy goals related to reduced carbon emissions, and provide benefits for other customers on our system. Providing incentives for reducing peak demand and shifting usage to off-peak periods is a cost-effective way to make use of current system resources.

---

*E. Any other information that the Commission should consider*

---

The Company views demand response and demand flexibility as resources that are growing in importance in the effort to ensure grid stability and provide for customer engagement and cost savings. As such, Xcel Energy continues to explore and develop innovative ways to work with customers on these types of programs and would be interested in bringing more of these options to our South Dakota customers.

### **III. CLOSING COMMENTS**

Xcel Energy appreciates the opportunity to provide information to the Commission regarding its demand response and demand flexibility efforts and programs. The Company would be happy to provide additional information and updates at the Commission's request and/or meet with the Commission and its staff to discuss this standard further.

Dated: October 21, 2022

Northern States Power Company