STAFF MEMORANDUM

TO: COMMISSIONERS AND ADVISORS

FROM: BRITTANY MEHLHAFF, PATRICK STEFFENSEN, AND AMANDA REISS

RE: EL20-026 - In the Matter of the Petition of Northern States Power Company dba Xcel Energy for Approval of its 2021 Infrastructure Rider Project Eligibility and Factor Update

DATE: December 18, 2020

BACKGROUND

On October 1, 2020, the South Dakota Public Utilities Commission (Commission) received a petition from Northern States Power Company dba Xcel Energy (Xcel) for approval of its 2021 Infrastructure Rider Project Eligibility and Factor Update.

The Infrastructure Rider was established in Docket EL12-046 and was revised in Docket EL14-058 to require annual Commission-approved filings. Since then, the Company has made annual filings requesting approval of revenue requirements, project eligibility, and rates. The Infrastructure Rider is currently designed to collect revenue requirements after the plant addition has been completed and placed in-service. The Infrastructure Rider is based on estimated costs of the capital projects subject to annual true-up to their actual costs, in-service dates, and recoveries. The Infrastructure Rider was last updated in Docket EL19-035, with rates effective January 1, 2020.

In this current filing, Xcel requests the Commission's approval of project eligibility for four new wind projects. Additionally, Xcel asks for approval of the Infrastructure Rider Tracker Report and true-up for the 2020 revenue requirement, and 2021 Infrastructure rider revenue requirements of approximately $24.9 million. The Company proposes to revise the Infrastructure Rider Adjustment Factor from the current rate of $0.008873 per kWh to $0.011897 per kWh, effective January 1, 2021. Xcel estimates the average bill impact for a typical residential customer using 750 kWh per month to be $8.92 per month, an increase of $2.27 per month compared to 2020 bill impacts.

Staff's recommendation is based on its analysis of Xcel's filing, discovery information, relevant statutes, and previous Commission orders. Staff reviewed updates regarding previously approved projects, new proposed projects, the 2020 tracker report, the forecasted 2021 revenue requirement, and rate calculation.

EXISTING PROJECT UPDATES

Several wind projects were approved for inclusion in the Infrastructure Rider in Dockets EL18-040 and EL19-035 with projected in-service dates in 2019 and 2020. Updates regarding these wind projects are discussed below.

Lake Benton – The Lake Benton project was approved in Docket EL18-040, and Xcel expected an October 2019 in-service date. This project achieved commercial operation in November 2019, just one month later than the expected in-service date. The wind farm has a 100.2 MW nameplate capacity and is located in Pipestone County, Minnesota. The project is a repowering of an existing wind facility that formerly contracted its power through a PPA to Xcel which was set to expire in 2025 prior to the repowering.

Foxtail – The Foxtail project was also approved in Docket EL18-040. This 150 MW project is located 20 miles west of Ellendale, North Dakota. Xcel also planned a commercial operation date for this project of October 2019. However, due to weather impacts that delayed construction activities, commercial operation was not achieved until December 2019. High precipitation levels made site conditions wet, generating a need for certain rework and/or slowed down construction progress.

Blazing Star I – A third wind project approved in Docket EL18-040 is the Blazing Star I project, which is a 200 MW project located in Hansonville, Hendricks, and Marble Townships, Minnesota. While Xcel anticipated an in-service date of December 2019, due to weather impacts delaying construction activities and late delivery of the main power transformers, commercial operation was delayed to April 2020. In response to Staff's Data Request 1-1, Xcel explained that since the project was placed in-service before the end of 2020, it still qualified for 100% of production tax credits (PTCs). However, the delay did cause project costs to increase by nearly $800,000, due to issues with the initial transformer supplier. The original transformer supplier informed Xcel of significant delays and therefore, Xcel identified another supplier that could deliver two transformers in the timeframe needed to maintain on the project schedule. Xcel later learned the original transformer supplier had declared bankruptcy. Had Xcel not changed suppliers, the project could have likely been further delayed. A second delay occurred when one of the two transformers failed during factory testing and had to be rebuilt. However, Xcel was able to recover liquidated damages of approximately $100,000 from the new supplier which offset a portion of the total cost impacts. Despite the increase in project costs caused by the delays, Xcel expects the project to come in under budget as a whole, as additional cost savings were identified through construction efficiencies and use of project contingency.

Crowned Ridge BOT – The final wind project approved in Docket EL18-040 is the Crowned Ridge Build-Own-Transfer (BOT) project. Xcel states this project is on track for commercial operation in late 2020. However, some changes have occurred. The Crowned Ridge Wind Project, located in Codington, Deuel, and Grant counties in South Dakota, initially consisted of two parts: a 300 MW PPA and 300.6 MW through a BOT arrangement. The Infrastructure Rider only includes the BOT arrangement portion. Commercial operation was initially expected in the fourth quarter of 2019, but was later updated to an expected in-service date of December 2020 in Docket EL19-035.

Due to a MISO study that identified high costs associated with required transmission upgrades, most wind projects were withdrawn from the interconnection queue, including the final 200 MW phase of the Crowned Ridge project, leaving a total project size of 400 MW. The BOT portion of the Crowned Ridge project and the PPA portion were both reduced by one third, or 100 MW each. Xcel adjusted the revenue requirements for the reduced size of the project in both Docket EL19-035 and the current filing. Xcel states the overall adjusted cost per MW is slightly lower than originally forecasted.

Blazing Star II – The 200 MW Blazing Star II project was approved in Docket EL19-035. This project extends the Blazing Star I project footprint east and south. The project was slated for commercial operation in September 2020. Xcel states the project should achieve commercial operation in February 2021, following some delays experienced. The challenges could not be effectively resolved in time to achieve the commercial operation date by year-end 2020.

Xcel explained that after the Tax Cuts and Jobs Act (TCJA) adoption, design efforts were undertaken to gain additional customer savings. The TCJA created cost pressures on the project due to the value of production tax credits decreasing as a result of the tax cuts. The impact on the levelized cost of energy for the project had the potential to reduce the competitiveness of the project to the point the project may not have been constructed. Xcel renegotiated the turbine procurement arrangements with Vestas to use the V150-4.0MW technology in lieu of the initially planned V116-2.0 technology. The technology change reduced the number of turbines at the site, reducing capital costs and ongoing operational costs. However, the technology change caused site permitting challenges which caused delays. These challenges were compounded by delays experienced in the early weeks of the COVID-19 pandemic, when certain key global product supply chains were significantly disrupted, resulting in multiple notices of force majeure from the turbine supplier and ultimately delayed equipment deliveries which impacted the project schedule. Xcel states these delays have and will continue to increase costs in construction equipment rentals, crane rentals, work force, and AFUDC. Heading into the winter season will also increase costs. Despite the delays, the project maintains qualification for 100% of PTCs.

Freeborn – The Freeborn project was also approved in Docket EL19-035 and is a 200 MW project located near Glenville, Minnesota. Similar to Blazing Star II, the Freeborn project was delayed from a December 2020 in-service date to March 2021 due to permitting delays and global supply chain issues caused by COVID-19. Xcel states that the Freeborn project has faced particular challenges with respect to site development, including repeated challenges to the MNPUC's authority over site permitting, and local township ordinances effectively prohibiting work on township roads. Despite delays, this project also maintains qualification for 100% of PTCs.

NEW PROPOSED PROJECTS

Dakota Range I & II – The Dakota Range I & II (Dakota Range) project is a 302.4 MW self-build wind project located 20 miles north of Watertown, South Dakota. In Docket EL18-003, the Commission granted a permit to construct the wind facility on July 23, 2018 and granted the transfer of the permit to Xcel on March 9, 2020. Xcel determined to proceed with the Dakota Range project once the price and transmission certainty of the project was improved upon conclusion of the Wind Portfolio RFP process.

The Dakota Range project has an expected in-service date of December 2021, so it was originally expected to qualify for PTCs at the 80 percent level, and the economic analysis was calculated as such.

However, given the Internal Revenue Service's response to the COVID-19 pandemic, Xcel was able to modify the project with inventory on hand to qualify for the extended 100 percent PTC level. At current estimates, Xcel expects these actions to save approximately $80-90 million over the life of the project.

Jeffers Wind and Community Wind North – Jeffers Wind was originally a 50 MW facility located in Cottonwood County, Minnesota that was initially established as a Community-Based Energy Development (C-BED) project. This project consisted of twenty 2.5 MW Clipper C-96 wind turbines that achieved commercial operation in October 2008. Community Wind North was originally a 30 MW facility located in Lincoln County, Minnesota and was also initially established as a C-BED project. This project consisted of twelve 2.5 MW Clipper C-96 wind turbines that achieved commercial operation in May 2012. Costs for these PPAs are currently being recovered from South Dakota customers through the Fuel Clause.

Longroad Energy, the owner of Jeffers Wind and Community Wind North, informed Xcel of its intent to refurbish components of both facilities. During the negotiations to amend the renewable energy purchase agreements to reflect the decreased PPA costs after refurbishing, Xcel recognized it could further benefit customers by purchasing, owning, and operating the refurbished facilities. As shown on Attachment 9B, the decision by Xcel to own Jeffers Wind will save customers approximately $16.4 million over the life of the facility, while the decision to own Community Wind North will be cost neutral to customers as a result of the proxy pricing method determined in Docket EL18-004.

These refurbished facilities are both expected to be placed in-service on or about December 23, 2020, and as shown in Xcel's response to Staff's Data Request 1-8, the refurbishing results in nameplate capacities for Jeffers Wind and Community Wind North of 44 MW and 26.4 MW, respectively. This represents a twelve percent decrease in nameplate capacity for each facility; however, the increased capacity factors of the refurbished facilities result in a greater output at each facility.

With the refurbishing, all the turbines at the Jeffers Wind and Community Wind North facilities were retrofitted with new Vestas rotors (consisting of the hub and three blades) and nacelles. The existing towers were retrofitted to support the new Vestas equipment, including the switchgear and electrical cabling. In addition to the greater output generated at each facility, the refurbishing will requalify the projects for new PTCs.

Mower Wind – Mower Wind is a 98.9 MW facility located in Mower County, Minnesota. This project consisted of forty-three 2.3 MW Siemens turbines, and Xcel entered a renewable energy purchase agreement with NextEra for this energy in November 2005.

In late 2018, NextEra approached Xcel regarding its interest in repowering Mower Wind and selling the project to Xcel. According to Xcel's response to Staff Data Request 1-11, the repowering consists of installing new hubs, blades (longer blades on all but one), and gear drives. While the facility will have the same nameplate capacity after the repowering, the capacity factor will increase resulting in an increased output at the facility. In addition to the greater output generated at each facility, the January 2021 commercial operation date of the refurbishing will requalify the projects for new PTCs.

As shown on Attachment 9C, the decision by Xcel to repower and own Mower Wind will save customers approximately $28.0 million over the life of the facility.

2020 TRACKER REPORT

The Infrastructure Rider rate approved in Docket EL19-035 was based on the estimated 2020 revenue requirements associated with 70 approved projects. In this docket, Staff reviewed the filed 2020 project revenue requirement of $18,544,191 to determine if the costs were prudent and at the lowest reasonable cost to ratepayers. As described in the Company's petition, the 2020 forecast for projects in the Infrastructure Rider is $2,368,740 less at this time compared to the estimate provided in Docket EL19-035.

Staff also reviewed the Company's calculation of the under/over collection of costs incorporated in the new Infrastructure Rider rate, comparing actual recoveries to actual costs. The Company's current filing estimates a 2020 over-collection of $2,144,579, including carrying charges.

Staff found no issues with the Company's tracker report.

2021 INFRASTRUCTURE RIDER REVENUE REQUIREMENT

Xcel's petition proposing a 2021 revenue requirement of $24,918,985, is based on the proposed 2020 over-collection of $2,144,579 and the 2021 revenue requirements associated with 74 projects, with 4 of these being new projects not previously approved for recovery in prior dockets.

2021 INFRASTRUCTURE RIDER ADJUSTMENT FACTOR

The Infrastructure Rider rate is designed to be implemented effective January 1, 2021. The rate is calculated based on forecasted sales from January 2021 through December 2021. The Infrastructure Rider rate based on the estimated 2021 revenue requirement of $24,918,985 is $0.011897 per kWh. The average residential bill impact of the 2021 Infrastructure Rider is $8.92 per month, an increase of $2.27 per month compared to the average residential bill impact of the 2020 Infrastructure Rider of $6.65 per month.

ANNUAL REPORT ON WIND PROJECTS PERFORMANCE

In past rate case and infrastructure rider dockets, Xcel agreed to report information related to capital costs, operating costs, and plant performance for the Pleasant Valley, Borders, Courtenay, Blazing Star I, Crowned Ridge, Foxtail, Lake Benton, Blazing Star II, and Freeborn projects once completed and in-service, so that Staff may assess the actual economics of the projects.

Xcel provided the Wind Project Performance Annual Report information for calendar year 2019 in Attachment 12 for Pleasant Valley, Border, Courtenay, Foxtail, and Lake Benton, as these were the only projects placed in-service by the end of 2019. Xcel agrees to provide this information for Blazing Star I, Crowned Ridge, Blazing Star II, Freeborn, Dakota Range I & II, Jeffers Wind and Community Wind North, and Mower Wind in subsequent infrastructure rider filings as the projects are placed in-service.

Pleasant Valley has an operating capacity of 200 MW and has a total capital cost to build the facility, including transmission, but excluding AFUDC, of $331.8 million through 2019. The actual costs were below the original forecasted costs of $342.9 million. For 2019, Pleasant Valley produced 791,092,000 kWh of gross energy and had a net production of 772,925,308 kWh, had 1,950,418 kWh in total curtailment, and an average annual capacity factor of 43.5%.

Borders Wind has an operating capacity of 150 MW and has a total capital cost to build the facility, including transmission, but excluding AFUDC, of $261.6 million through 2019. The actual costs were slightly less than the original forecasted costs of $261.8 million. For 2019, Border Wind produced 623,349,200 kWh of gross energy and had a net production of 612,593,089 kWh, had 2,159,500 kWh in total curtailment, and an average annual capacity factor of 46.6%.

Courtenay Wind has an operating capacity of 200 MW and has a total capital cost to build the facility, including transmission, but excluding AFUDC, of $289.9 million through 2019. The actual costs were below the original forecasted costs of $300 million. For 2019, Courtenay Wind produced 727,243,370 kWh of gross energy and had a net production of 709,772,118 kWh, had 1,906,000 kWh in total curtailment, and a capacity factor of 40.5%.

Foxtail has an operating capacity of 150 MW and has a total capital cost to build the facility, including transmission, but excluding AFUDC, of $239.4 million through 2019. The actual costs were below the original forecasted costs of $242.4 million. For December 2019, Foxtail produced 563,266 kWh of gross energy, had a net production of 504,911 kWh, and had 0 kWh in total curtailment.

Lake Benton has an operating capacity of 100 MW and has a total capital cost to build the facility, including transmission, but excluding AFUDC, of $152.8 million through 2019. The actual costs were below the original forecasted costs of $166.7 million. For November and December 2019, Lake Benton produced 54,103,427 kWh of gross energy and had a net production of 53,769,518 kWh, had 3,800 kWh in total curtailment, and a capacity factor of 48.1%.

NET WIND BENEFITS

At the Commission Meeting on December 10, 2019, during discussion of Docket EL19-035, Commissioner Nelson asked Xcel to perform an evaluation showing that the benefit customers are receiving through the fuel clause due to avoided purchases and potential MISO sales outweighs the costs of the wind projects. In response to that request, Xcel provided the analysis contained in Attachment 12B of its filing this year, presenting an estimate of the net benefits of the wind farms[1] from January through August 2020. The wind additions displace fuel and MISO purchases and increase MISO sales compared to a system without these additions. Attachment 12B uses actual MISO revenue received due to the wind production to estimate the energy benefit of the wind additions. Staff agrees this is a reasonable proxy to use in determination of the net benefits of the wind projects as it is

[1] Wind farms in-service by August 2020 include: Border Winds, Courtenay Wind, Lake Benton, Blazing Star I, and Foxtail.

impossible to know exactly what prices would have been and how the system would have been dispatched absent these wind additions. As shown on Attachment 12B, certain wind farms are showing benefits to customers nearly every month while others are experiencing months with net costs. It is reasonable to assume based on the performance of the wind farm in any given month and system dispatch and prices, there will be some ups and downs. Xcel expected a net benefit beginning in 2020. As some projects are still in the beginning stages of operation, it is likely we will see the net benefits increasing in the near future. Therefore, Staff asked Xcel for additional support regarding the net benefits expected over the life of the projects.

In response to Staff's Data Request 1-5, Xcel provided the analysis completed prior to acquiring the new wind resources. Based on Xcel's modeling of its 1550 MW wind portfolio, a small benefit was expected in 2020, with the savings increasing each year until the expiration of the PTCs in 2030, when the savings are reduced, yet are still expected to be greater than the benefits in the early years of operation.

Xcel's 1550 MW wind portfolio is comprised of the following:

Project	**Size**
Foxtail	150 MW
Crowned Ridge BOT	300 MW
Crowned Ridge PPA	300 MW
Lake Benton	100 MW
Blazing Star I	200 MW
Blazing Star II	200 MW
Freeborn	200 MW
Clean Energy #1 PPA	100 MW
Total Portfolio	**1550 MW**

1150 MW of the total portfolio are wind projects to be recovered through the Infrastructure Rider. The remaining 400 MW are PPAs for which the costs flow through the fuel clause. Staff notes that due to the reduction in the Crowned Ridge project scope, as discussed above, the total portfolio has since decreased by 200 MW.

Staff also inquired about the net benefits expected for each individual project. This analysis is provided in Xcel's Response to Staff's Data Request 2-4 and shows a net present benefit for each of the projects. As Xcel notes, the impacts of individual projects will vary depending on the order each project is added to the model. Staff agrees the analysis that combines all projects included in the 1550 MW wind portfolio provides a better forecast of benefits of the total portfolio than an analysis of each individual project.

In response to Staff Data Request 2-4, Xcel also provided modeling supporting the acquisition of the Courtenay Wind and Border Winds projects and the expected net benefits.

While actual net benefits will differ from those forecasted for a number of reasons, Staff believes this analysis provides a good indication of the savings Xcel expects its customers to receive due to the

acquisition of these wind projects. Staff recommends Xcel continue to provide the information provided in Attachment 12B in future Infrastructure Rider dockets so the Commission can review the estimated net benefits as the projects are operational.

RECOMMENDATION

Staff recommends the Commission approve the revised Infrastructure Rider Adjustment Factor of $.011897 per kWh and tariff sheet effective January 1, 2021.