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Supplemental Direct Testimony
Christopher J. Shaw

Before the North Dakota Public Service Commission
State of North Dakota

In the Matter of the Application of Northern States Power Company
for Authority to Increase Rates for Electric Service in North Dakota

Case No. PU-24-376
Exhibit____(CJS-2)

Resource Prudence

May 9, 2025

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I. INTRODUCTION

1
2
3 Q. PLEASE STATE YOUR NAME AND TITLE.

4 A. My name is Christopher J. Shaw. I am currently the Manager of Regulatory
5 Policy for Northern States Power Company d/b/a Xcel Energy (Xcel Energy
6 or the Company). Prior to accepting my current role, I was Director of Resource
7 Planning for Xcel Energy Services, Inc. (XES or Service Company), which
8 supports the Xcel Energy operating companies, including Northern States
9 Power Company.

10
11 Q. HAVE YOU PREVIOUSLY PROVIDED TESTIMONY IN THIS MATTER?

12 A. Yes. I filed Direct Testimony on behalf of Xcel Energy supporting the prudence
13 of resource additions and retirement decisions that impact the test year in the
14 present case.

15
16 Q. WHAT IS THE PURPOSE OF YOUR SUPPLEMENTAL DIRECT TESTIMONY IN THIS
17 MATTER?

18 A. The purpose of my Supplemental Direct Testimony is to address the prudence
19 of the actual expenses associated with constructing and acquiring the resources
20 in the Company's Wind Repower Portfolio, Docket No. PU-20-425, and the
21 Dakota Range, Docket No. PU-17-372. In both of the prior cases, the Company
22 entered into a settlement with PUC staff that deemed the resource additions
23 prudent up to an established threshold and reserved for further Commission
24 review the prudence of any costs that exceeded that threshold. As I discuss in
25 my testimony, the expenditures for each resource were prudently incurred.

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1 Q. PLEASE DESCRIBE HOW YOUR TESTIMONY IS ORGANIZED.

2 A. My testimony is organized in the following sections:

- 3 • First, I describe the Settlement Agreement and Joint Stipulation entered
4 on September 23, 2021 (2021 Settlement) in Case No. PU-20-425,
5 regarding the addition of a portfolio of four wind resources (the Wind
6 Repower Portfolio), which included an agreed-upon budget threshold for
7 the portfolio of resources. I sometimes refer to the portfolio threshold
8 as the soft cap.
- 9 • Second, I explain why the expenses incurred in implementing the Wind
10 Repower Portfolio were prudent.
- 11 • Third, I describe the Settlement Agreement entered on September 19,
12 2018 (2018 Settlement) in Case No. PU-17-372, with respect to the
13 Dakota Range I and II Projects and discuss the prudence of expenditures
14 in excess of the threshold amount set forth in the 2018 Settlement.

15

16 Q. PLEASE IDENTIFY THE RESOURCES AT ISSUE IN YOUR TESTIMONY.

17 A. My testimony addresses the prudence of the following wind projects:

- 18 • Pleasant Valley: The Pleasant Valley Wind Farm, in Mower County,
19 Minnesota, has an operating capacity of 200 MW and was placed in-
20 service in November 2015. The repowering project will repower the full
21 capacity of the facility, **[PROTECTED DATA BEGINS**

22

23 **PROTECTED DATA ENDS].**

24 The Pleasant Valley repower is expected to extend the life of the facility
25 by 25 years from the commercial operation date (COD), which is
26 expected in late 2025.

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- Border Winds: The Border Wind Farm, in Rolette County, North Dakota, has an operating capacity of 150 MW and was placed in-service in December 2015. The repowering will repower the full capacity of the facility and will entail **[PROTECTED DATA BEGINS**

PROTECTED DATA ENDS].

The repowering is expected to extend the life of Border Winds 25 years from the repowering project's COD, which is expected to occur in late 2025.

- **Nobles Wind:** Nobles Wind is a 201 MW repowering project located in Nobles County, Minnesota that was originally placed into service in 2010. The repowering replaced internal nacelle components, hub, and blades, resulting in an increase to the capacity factor and a total nameplate capacity of 214.4 MW. The project achieved commercial operation in December 2022.
- **Grand Meadow:** Grand Meadow is a 100.5 MW wind repowering project located in Mower County, Minnesota. The facility was originally placed into service in 2008, interconnecting at the Pleasant Valley 161 kV substation via a generator interconnection agreement (GIA) between the Company and Great River Energy (GRE). The proposed project uprated the existing turbines by replacing internal and external components, while continuing to use the existing GIA. The repowered project commenced operations in February 2023. The repowering work is expected to extend Grand Meadow's useful life, with new components expected to support operations to 2043.

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- Dakota Range I and 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. Dakota Range achieved commercial operation in January 2022.

II. WIND REPOWER PORTFOLIO 2021 SETTLEMENT

Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

A. The purpose of this section of my testimony is to describe the 2021 Settlement, to resolve its Application for an Advance Determination of Prudence (ADP) for the repowering of Border Winds, Grand Meadow, Nobles, and Pleasant Valley, which the Company filed on October 13, 2020, in Case No. PU-20-425.

Q. PLEASE DESCRIBE THE 2021 SETTLEMENT.

A. The 2021 Settlement, which was approved by the Commission, stipulated that the Wind Repower Portfolio was prudent up to the portfolio threshold amount. The threshold amount was calculated using the sum of the budgeted capital expenditure on a per-project basis, as identified in the 2021 Settlement. The parties further agreed that spending more than the 2021 Settlement soft cost cap does not imply that the costs were imprudently incurred. Rather, the soft cap simply creates a process in which any costs above the cost threshold must be recouped as a part of a future rate case.

Q. PLEASE DESCRIBE THE COST THRESHOLD SET IN THE WIND REPOWER PORTFOLIO 2021 SETTLEMENT.

A. The 2021 Settlement explained that costs of at least the total portfolio cap of

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[PROTECTED DATA BEGINS **PROTECTED DATA ENDS]** were prudent. The 2021 Settlement also included project specific estimates, but the finding of prudence related to the total portfolio amount, not the project-specific estimates. The 2021 Settlement presented the agreed upon threshold as shown below in Table 1:

Table 1
2021 Settlement – Cost Threshold

Line	Project	Capacity	Budgeted Capital Expenditure Amount (\$s)
1	Border Winds	150 MW	[PROTECTED DATA BEGINS
2	Grand Meadow	100.5 MW	
3	Nobles	201 MW	
4	Pleasant Valley	200 MW	
5	Total Wind Repowering Projects	651.5 MW	** PROTECTED DATA ENDS]

Q. WHAT DOES THE ** REPRESENT IN TABLE 1?

A. Table 1 is included in the same form as it was in the 2021 Settlement. The ** denotes that the 2021 Settlement included an aggregate amount that does not accurately reflect the true sum of each wind farm's individual capital expenditure. The actual sum is **[PROTECTED DATA BEGINS**
PROTECTED DATA ENDS]. We have therefore adjusted the total amount in this filing accordingly.

Q. DOES THE 2021 SETTLEMENT PROVIDE A COST THRESHOLD FOR EACH INDIVIDUAL PROJECT WITHIN THE WIND REPOWER PORTFOLIO?

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1 A. No. Although the 2021 Settlement threshold amount was calculated using the
2 sum of each project's budgeted capital expenditure, it did not apply the soft cap
3 on a per-project basis, because the modeling supporting the projects was
4 completed on a portfolio basis and the prudence of the projects was evaluated
5 on a portfolio basis. Additionally, the 2021 Settlement contemplates
6 recalculation of the cost threshold in the event one of the projects does not
7 proceed. If the 2021 Settlement was intended to deem individual projects
8 prudent based on project-specific cost thresholds, there would be no need to
9 modify the total cost cap if an individual project was cancelled.

10
11 Q. WAS SETTLEMENT OF THE WIND REPOWER PORTFOLIO ON AN AGGREGATE
12 SOFT CAP CONSISTENT WITH PAST PRACTICE?

13 A. Yes. The Company has an established history, including Case No. PU-17-120,
14 of settling applications for advanced determination of prudence by packaging a
15 portfolio of resources and establishing an aggregate soft cost cap for the entire
16 portfolio like the one at issue in the 2021 Settlement. As in the 2021 Settlement,
17 those agreements include language that the expenditure amount may be
18 modified in the event of a particular project cancellation. There, the parties have
19 accepted that the soft cap applies on a portfolio basis.

20
21 Q. DOES THE COMPANY EXPECT THE WIND REPOWER PORTFOLIO PROJECTS WILL
22 BE COMPLETED UNDER THE 2021 SETTLEMENT COST THRESHOLD?

23 A. No. Our capital forecast shows that the Wind Repower Portfolio will be
24 completed at a cost approximately **[PROTECTED DATA BEGINS**

25 **PROTECTED DATA**
26 **ENDS]**.

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1 Q. HAVE YOU PREPARED A WORKPAPER ANALYZING THE COSTS ASSOCIATED WITH
2 EACH OF THE WIND REPOWER PORTFOLIO PROJECTS?

3 A. Yes. The Company compares the budgeted capital expenditures with the
4 current actual capital costs in Exhibit____(CJS-2), Schedule 1. Schedule 1 also
5 contains data to allow the Commission to compare these projects to the Wind
6 Portfolio Projects. Northern Wind Facility is a disputed resource and is not
7 included in the portfolio. Because Foxtail, Blazing Star I and II, and Freeborn
8 are already being recovered in the North Dakota Renewable Energy Rider
9 (RER), the exceedance of that portfolio is reflected on Dakota Range, as I
10 discuss later in my Supplemental Direct Testimony.

11
12 Q. WHERE ARE EACH OF THE WIND REPOWER PORTFOLIO PROJECTS ACCOUNTED
13 FOR IN THIS BASE RATE CASE?

14 A. The costs associated with the original facility placed into service for Border
15 Winds, Grand Meadow, Nobles, and Pleasant Valley are included in the rate
16 case test year data, consistent with our last rate case, with a proposal to extend
17 the life of the facility at the in-service date of the repowered project. The
18 repowered projects for Border Winds and Pleasant Valley have been removed
19 from the rate case based on the Company's proposal to collect these costs net
20 of PTCs in the RER rider. The rider removal for these two projects was
21 included in the initial application in Volume 3, Section VIII WP-A30 Rider
22 RER. The repowered projects for Grand Meadow and Nobles are included in
23 the rate case test year data; however, during the interim rate period, the cost
24 net of PTCs are recovered in the RER rider. The interim rate rider removal for

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1 these two projects was included in the initial Application in Volume 3, Section
2 IX Interim Adj 12 – Rider Removal – RER interim.¹

3
4 **III. PRUDENCE OF WIND REPOWER EXPENSES**

5
6 Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

7 A. This section of my Supplemental Testimony supports the conclusion that the
8 Wind Repower Portfolio expenses were prudently incurred, including those that
9 led to the actual expenses ultimately being higher than the project-specific
10 budgeted capital expenditure. I will first discuss the resource planning analyses
11 the Company completed for the Wind Repower Portfolio and provide the
12 anticipated savings that the Company identified in its advanced determination
13 of prudence application. That analysis demonstrated that the Wind Repower
14 Portfolio was prudent as agreed upon in the 2021 Settlement, and it also
15 supports the conclusion that the costs above that threshold were also prudently
16 incurred. I next discuss how the project implementation differed from the
17 projections and forecasts used in the planning process, and I explain why those
18 variances do not affect the prudence of the resource additions, because cost
19 variances could not be avoided, and the costs rose because of delays that
20 allowed the Company to maximize the benefit of tax credits to North Dakota
21 customers. The value of the additional tax credits is expected to be greater than
22 the amount the Wind Repower Portfolio exceeded the 2021 Settlement soft cost cap.

¹ The RER interim rider removal also removes the cost and PTCs associated with Freeborn and Dakota Range.

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A. Anticipated Costs and Savings

Q. DID THE COMPANY COMPARE THE PROPOSED REPOWERED PROJECTS TO ALTERNATIVES AS A PART OF ITS RESOURCE PLANNING?

A. Yes. The Company performed a “pro forma” spreadsheet analysis on each individual project proposed in response to the Company’s RFP. The Company also analyzed the overall rebuild portfolio (the Wind Repower Portfolio), which included the four Wind Repower Portfolio projects and three additional smaller power purchase agreement (PPA) projects, using EnCompass.

Q. DID THE PRO FORMA ANALYSIS SUPPORT THE CONCLUSION THAT THE WIND REPOWER PORTFOLIO PROJECTS WOULD BENEFIT CUSTOMERS?

A. Yes. On an aggregate basis, the pro forma analysis showed the Wind Repower Portfolio resulted in \$224.6 million in savings for the Company relative to a generic wind resource and that the Wind Repower Portfolio resulted in \$150.3 million in savings relative to relying upon market energy. These savings are on a present value of revenue requirements (PVRR) basis and do not include carbon dioxide costs, other environmental externality values, or costs for potential future carbon emissions regulations.

Q. DID THE COMPANY CONDUCT ANY ADDITIONAL RESOURCE PLANNING ANALYSIS OF THE WIND REPOWER PORTFOLIO?

A. Yes. The Company also performed an EnCompass analysis to evaluate the impact of the Wind Repower Portfolio on customers.

Using Encompass, we evaluated the Wind Repower Portfolio’s economic impact to our system using a Base Case consistent with the plan presented in

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our 2020 Integrated Resource Plan Supplement, filed with the Commission on June 30, 2020, in Case No. PU-19-220. We updated these assumptions through the addition of the Mower County Wind resource in the Base Case in response to the Commission's approval in Case No. PU-19-310.

Q. WHAT WERE THE RESULTS OF THE ENCOMPASS MODELING?

A. The EnCompass analysis showed that, on balance, the Wind Repower Portfolio projects would result in net savings for our customers of \$188.9 million on a PVRR basis.

B. Actual Expenditures

Q. AT A HIGH LEVEL, PLEASE EXPLAIN HOW THE WIND REPOWER PORTFOLIO HAS PERFORMED IN TERMS OF COMPLYING WITH THE ESTIMATED BUDGET.

A. Global supply chain issues and inflationary pressures driven by the COVID-19 pandemic; the war in Ukraine; and droughts, floods, and other natural disasters, have driven up costs across the economy, causing parts and equipment to become more costly and difficult to procure for all industries. Xcel Energy, our suppliers, and contractors with whom the Company works are not immune to these global phenomena.

As a result, the Wind Repower Portfolio is now forecasted to exceed the established overall soft cost cap on a portfolio basis, with overages occurring at the Border Winds and Pleasant Valley Wind Repower projects and underruns occurring for the Nobles and Grand Meadow projects.

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1 Q. AT A HIGH LEVEL, PLEASE EXPLAIN HOW THE WIND REPOWER PORTFOLIO HAS
2 PERFORMED IN TERMS OF REALIZING THE ANTICIPATED COST SAVINGS?

3 A. The Company made efforts to reduce costs for and increase benefits from the
4 Projects, and the passage of the Inflation Reduction Act (IRA) into law will
5 have a significant cost-savings impact on the Projects, which the Company is
6 committed to passing on to its customers. The Company anticipates the benefits
7 of the IRA, combined with the Company's work to maximize production tax
8 credit (PTC) benefits for our customers, will more than offset these cost
9 increases and result in significant additional customer savings compared to the
10 ADP filing.

11
12 In fact, compared to our ADP rebuttal position, we estimate that the economic
13 benefits from Border Winds and Pleasant Valley in particular have improved by
14 **[PROTECTED DATA BEGINS**
15 **PROTECTED DATA ENDS]** for Pleasant Valley and **[PROTECTED**
16 **DATA BEGINS** **PROTECTED DATA**
17 **ENDS]** for Border Winds, on a Net Present Value (NPV) and Levelized Cost
18 of Energy (LCOE). The resulting LCOEs for Border Winds and Pleasant Valley
19 make them some of the lowest cost resources on our system, with Pleasant
20 Valley having an LCOE of **[PROTECTED DATA BEGINS**
21 **PROTECTED DATA ENDS]** and Border Winds having an LCOE of
22 **[PROTECTED DATA BEGINS** **PROTECTED DATA**
23 **ENDS]**.

24
25 Q. PLEASE EXPLAIN WHY THE COMPANY ANTICIPATES THE WIND REPOWER COSTS
26 WILL EXCEED THE 2021 SETTLEMENT COST CAP.

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A. The 2021 Settlement established a threshold for the portfolio of [PROTECTED DATA BEGINS PROTECTED DATA ENDS]. Although the two completed projects—Nobles and Grand Meadow reached COD under budget, Border Winds and Pleasant Valley are expected to exceed their budgeted amounts and push the entire portfolio above the 2021 Settlement threshold. Table 2 below provides a comparison of the expenditures per project to the 2021 Settlement project-specific expenditures and soft cap applied to the full Portfolio.

Table 2
Wind Repower Portfolio CWIP Actuals Comparison (\$s)

Windfarm	Projected CWIP Expenditures	Estimated Budget	Variance to Cost Cap
[PROTECTED DATA BEGINS]			
Border Winds			
Grand Meadow *			
Nobles *			
Pleasant Valley			
Totals			

PROTECTED DATA ENDS]

**Placed in Service*

Q. WHAT ARE THE REVENUE REQUIREMENT IMPACTS FOR NORTH DAKOTA OF THE COMPANY EXCEEDING THE SOFT CAP?

A. The Company does not calculate the revenue requirement on individual projects in the context of a rate case filing; however, the Company calculated the revenue requirement impact in the 2025 RER, which would be comparable to the impact

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1 in this case if it were included in the 2025 test year cost of service. In 2025, the
2 revenue requirement for North Dakota was reduced from \$183,316 to \$165,722
3 for Pleasant Valley, and \$254,109 to \$229,441 for Border Winds. The revenue
4 requirements for 2026 are not a useful comparison, as they would include a full
5 year reduction in the revenue requirement. The Company is proposing to keep
6 the Border Winds and Pleasant Valley in the RER for 2025 and 2026.

7
8 Q. PLEASE REMIND THE COMMISSION OF THE AMOUNT OF COSTS ANTICIPATED
9 FOR THE BORDER WINDS PROJECT IN THE 2021 SETTLEMENT.

10 A. In the 2021 Settlement, the parties assumed the Border Winds Project would
11 come in under **[PROTECTED DATA BEGINS**
12 **PROTECTED DATA ENDS]**.

13
14 Q. ARE THE ACTUAL COSTS ASSOCIATED WITH BORDER WINDS EXPECTED TO
15 EXCEED THAT ESTIMATE?

16 A. Yes. As of September 20, 2024, the construction work in progress (CWIP) for
17 Border Winds is expected to total **[PROTECTED DATA BEGINS**
18 **PROTECTED DATA ENDS]**, with **[PROTECTED DATA**
19 **BEGINS** **PROTECTED DATA ENDS]** being spent in 2025.

20
21 Q. PLEASE REMIND THE COMMISSION OF THE AMOUNT OF COSTS ANTICIPATED
22 FOR THE PLEASANT VALLEY PROJECT IN THE 2021 SETTLEMENT.

23 A. The parties to the 2021 Settlement assumed a budget of **[PROTECTED**
24 **DATA BEGINS** **PROTECTED DATA ENDS]** for Pleasant
25 Valley.

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1 Q. ARE THE ACTUAL COSTS ASSOCIATED WITH PLEASANT VALLEY EXPECTED TO
2 EXCEED THAT ESTIMATE?

3 A. Yes. CWIP for the Pleasant Valley project is expected to total **[PROTECTED**
4 **DATA BEGINS** **PROTECTED DATA ENDS]**, with
5 **[PROTECTED DATA BEGINS** **PROTECTED DATA**
6 **ENDS]** being spent in 2025.

7
8 Q. HOW DO THE ACTUAL COSTS FOR NOBLES COMPARE TO THE NOBLES-SPECIFIC
9 BUDGET ESTIMATE IN THE 2021 SETTLEMENT?

10 A. Nobles ultimately cost **[PROTECTED DATA BEGINS**
11 **PROTECTED DATA ENDS]**, which is **[PROTECTED DATA BEGINS**
12 **PROTECTED DATA ENDS]** in savings relative to the 2021
13 Settlement project-specific estimate.

14
15 Q. HOW DO THE ACTUAL COSTS FOR GRAND MEADOW COMPARE TO THE PROJECT-
16 SPECIFIC BUDGET ESTIMATE IN THE 2021 SETTLEMENT?

17 A. Grand Meadow ultimately cost **[PROTECTED DATA BEGINS**
18 **PROTECTED DATA ENDS]**, which is **[PROTECTED**
19 **DATA BEGINS** **PROTECTED DATA ENDS]** in savings
20 relative to the 2021 Settlement project-specific estimate.

21
22 Q. WERE THE COSTS OF BORDER WINDS AND PLEASANT VALLEY DRIVEN BY THE
23 SAME FACTORS?

24 A. Generally, yes as I discuss below.

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1 Q. WHAT WERE THE KEY DRIVERS OF COSTS FOR BORDER WINDS AND PLEASANT
2 VALLEY?

3 A. The cost increases on the Border Winds and Pleasant Valley projects are due
4 generally to the impacts of the passage of time and inflation since the October
5 2021 Settlement. As time has passed since the 2021 Settlement, several changes
6 in the industry and the world have put upward pressure on the cost of certain
7 aspects of the projects. While inflation is contributing to cost increases overall,
8 it has particularly impacted material costs. Additionally, there have been
9 technical challenges on the project, and costs have been impacted by changing
10 road use requirements, evolving methods for blade and hub disposal, and
11 increasing insurance premiums. Finally, costs are attributable in part to a
12 Company decision to delay construction by one year to maximize PTC benefits.
13 Although this decision caused elevated costs, as I explain later in my testimony,
14 the delay resulted in a net benefit to the Company and its customers, as the
15 value of the PTCs exceeds the additional costs resulting from the delay.

16
17 Q. PLEASE EXPLAIN HOW INFLATION AND TECHNICAL CHALLENGES IMPACTED
18 THE COST OF BORDER WINDS.

19 A. Inflation has increased significantly since the original filing for the Border
20 Winds and Pleasant Valley repowering projects. Price increases are impacting
21 every sector of the economy, including vendors and developers with whom the
22 Company does business. Key raw materials – steel, resin, and copper – for wind
23 turbine manufacturers doubled from the first quarter of 2020 to the first quarter
24 of 2022. This prompted several major wind turbine manufacturers – including
25 the OEM for the Projects, Vestas – to raise prices.

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1 On top of these pressures, Vestas informed the Company in July 2021 that there
2 were several technical challenges that prevented it from proceeding with the
3 rotor and drivetrain retrofit of the original units, as originally contemplated. The
4 Company and Vestas subsequently determined the only viable path forward for
5 repowering Border Winds and Pleasant Valley is to replace the nacelle of all 175
6 turbines entirely, rather than retrofitting them. This will add an incremental
7 **[PROTECTED DATA BEGINS PROTECTED DATA**
8 **ENDS]** to the costs presented in our initial Petition.
9

10 Q. HOW HAVE ROAD USE REQUIREMENTS IMPACTED THE PRICE OF BORDER
11 WINDS AND PLEASANT VALLEY?

12 A. Historically, to minimize the transportation and equipment costs for wind
13 repowering projects, the Company has engaged with local landowners for
14 permission to transport cranes and components across their property. We do
15 this because it is generally the shortest and lowest cost path from one turbine
16 to the next. However, due to dissatisfaction with past developers other than the
17 Company, we have learned that some local landowners will not allow the
18 transportation of project components across their land. This is increasing the
19 cost of the Projects for two reasons: there are additional costs associated with
20 transporting the cranes from one turbine to the next and the Company needs
21 to use more roads.

22
23 Typically, when the Company accesses farmers' fields, crane mats are placed on
24 the ground, so the tracks of the cranes do not sink into the soil. These mats also
25 allow the cranes to be transported completely intact from site to site without
26 destroying farmland. Since the Company will not be able to use this approach

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1 for these Projects, the cranes must be partially disassembled every time they
2 need to be moved to the next turbine and then reassembled once they have
3 arrived. This adds additional cost to the process in terms of equipment and
4 labor, as a crew will likely need to be placed on the nightshift to prepare the
5 cranes to be moved.

6
7 Additionally, since the Company cannot transport project components across
8 the property of local landowners, township and county roads must be utilized
9 to move the cranes from one site to the next. This increases the cost of
10 transporting equipment and components because it increases the number of
11 roads the Company must maintain during the project and fix once the project
12 is complete. In addition to fixing more roads, the road upgrades the Company
13 thought the counties would be making did not happen, due to smaller County
14 budgets and changing County practices. This necessitates more work and
15 expenditure from the Company.

16
17 Together, the cost of adjusting our approach to transporting cranes from one
18 turbine to another and maintaining and fixing roads we must use is an
19 incremental **[PROTECTED DATA BEGINS PROTECTED**
20 **DATA ENDS]**.

21
22 Q. HOW HAVE BLADE AND HUB DISPOSAL IMPACTED THE COSTS OF BORDER
23 WINDS AND PLEASANT VALLEY?

24 A. In September 2021, the Company changed the waste classification of turbine
25 blades to Category 3. Prior to this, turbine blades and related components were
26 considered construction and demolition (C&D) waste. Changing the

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1 classification of turbine blades to Category 3 requires the Company to have a
2 contract with the vendor that will manage them at the end of their life. This
3 necessitates a certain level of due diligence of the vendor.

4
5 When the initial acquisitions for Border Winds and Pleasant Valley were
6 approved by the Commission in 2013, decommissioned turbine blades and hubs
7 were considered Construction and Demolition (C&D) waste, and would have
8 been disposed of accordingly, and the anticipated disposal costs were
9 significantly lower than what we see today. Experience by the waste
10 management industry suggests that traditional disposal methods are not
11 adequate for this material; consequently, preprocessing of the blades is required
12 before the blades can be disposed of. While viable options are available, they
13 currently do not exist within proximity to our current assets. As this market
14 develops, we anticipate expanded beneficial use and recycling opportunities.
15 Today, the cost of responsibly disposing of the decommissioned blades and
16 hubs is **[PROTECTED DATA BEGINS PROTECTED**
17 **DATA ENDS]**.

18
19 Q. HOW HAS BUILDER'S RISK INSURANCE AFFECTED THE PRICE?

20 A. Insurance costs have also increased over time. This is partially due to inflation,
21 and partially due to making claims, and insurance increases have effects on all
22 the Company's repowering projects. When the Company presented the original
23 estimate for the Projects, insurance rates from 2018 were used, which projected
24 a cost of **[PROTECTED DATA BEGINS**
25 **PROTECTED DATA ENDS]** per project. Due to open claims the Company
26 has had with insurers since 2019, as well as rising premiums, the cost of builder's

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1 risk insurance has increased. The additional premium for both Border Winds
2 and Pleasant Valley is **[PROTECTED DATA BEGINS**
3 **PROTECTED DATA ENDS]**.
4

5 Q. ARE THERE ANY OTHER VARIABLES THAT ATTRIBUTED TO THE WIND REPOWER
6 PORTFOLIO EXCEEDING THE 2021 SETTLEMENT SOFT CAP?

7 A. Yes. The Company unintentionally omitted a North Dakota sales tax estimate
8 for the Border Winds Project. The Company estimates that the North Dakota
9 sales tax added on 5.5 percent to the cost of Border Winds.
10

11 Q. COULD THE COMPANY HAVE CONTROLLED ANY OF THE DRIVERS OF THE COST
12 OF THE BORDER WINDS AND PLEASANT VALLEY PROJECTS?

13 A. Generally, no. The time period between the 2021 Settlement and the present
14 has been marked by events that the Company could not have foreseen and that
15 were controlled by the markets and third parties, not the Company.
16

17 Q. WERE THERE ANY MATERIAL CONTRACT MODIFICATIONS THAT DROVE THE
18 COSTS ABOVE THE AMOUNT IDENTIFIED IN TABLE 1 ABOVE?

19 A. No. As discussed above, the drivers of the overage were not contract terms but
20 large-scale market trends, changes to technology, and the like.
21

22 Q. WHAT FACTORS ALLOWED THE COMPANY TO REMAIN UNDER THE PROJECT-
23 SPECIFIC BUDGET ESTIMATES FOR NOBLES AND GRAND MEADOW?

24 A. Both Nobles and Grand Meadow were completed by 2023, and as a result they
25 were not subject to some of the inflationary and supply chain issues that affected
26 Border Winds and Pleasant Valley.

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1 Q. DOES THE COMPANY CONCLUDE THE WIND REPOWER PORTFOLIO WAS
2 PRUDENT?

3 A. Yes. We believe the total Portfolio expenditures exceeding the soft cap were
4 prudent, especially in light of the Company's ability to deliver significant added
5 benefits to customers. The Wind Repower Portfolio allowed the Company to
6 extend the lives of 651.5 MW of wind resources for between 20 and 25 years.
7 While the Wind Repower Portfolio ultimately exceeded the soft cap, the
8 circumstances that led to the overage were beyond the Company's control. As
9 such, we believe the Company should be allowed to recover costs exceeding the
10 Wind Repower Portfolio's soft cap.
11

12 Q. WOULD YOUR ANALYSIS OF THE PRUDENCE OF THE EXPENSES INCURRED
13 CHANGE IF THE SOFT CAP APPLIED TO EXPENSES ON A PER PROJECT BASIS?

14 A. No. The costs of executing each individual project were prudently incurred. The
15 soft cap's pre-determination of prudence in no way prejudices the Company's
16 ability to demonstrate the prudence of the resources after the fact. As discussed
17 herein, the circumstances that led to the overages were out of the Company's
18 control and were effectively managed by the Company. Additionally, the fact
19 that the costs in some instances were below forecast while in others they
20 exceeded the forecast demonstrates the benefits of the Company planning on a
21 portfolio basis.
22

23 **C. Company Efforts to Reduce Costs for Customers**

24 Q. WHAT STEPS HAS THE COMPANY TAKEN TO REDUCE COSTS OF THE WIND
25 REPOWER PORTFOLIO PROJECTS?

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1 A. The primary cost reduction measure is the IRA, enacted in 2022. The Company,
2 along with other utilities, advocated for extension of and reforms to wind PTCs
3 as discussed in greater detail below.

4
5 Q. YOU PREVIOUSLY REFERRED TO COMPANY EFFORTS TO MAXIMIZE TAX CREDITS
6 AND INCREASED BENEFITS RESULTING FROM THE IRA. PLEASE EXPLAIN.

7 A. Since the passage of the IRA, the Company has taken steps to reduce the cost
8 and increase the benefits of the projects for our customers.

9
10 For several years before the IRA passed, the Company engaged lawmakers in
11 Washington, D.C. to advocate for the extension of and reforms to wind PTCs,
12 which Congress passed, and President Biden signed into law in August 2022 as
13 part of the IRA. These provisions will benefit our customers by lowering the
14 cost of building the clean energy infrastructure necessary to meet the emissions
15 reduction goals of the Company. In addition to the extension of PTCs, the
16 Company advocated for reforms to PTCs that will allow the Company to
17 monetize tax credits more efficiently on behalf of our customers, thereby
18 providing additional cost benefits to customers.

19
20 While the Company, along with the rest of the industry, continues to analyze
21 the impacts of the legislation, we believe it will lead to significant savings for
22 our customers. Specific to Border Winds and Pleasant Valley, current estimates
23 suggest the passage of the IRA could contribute to incremental customer
24 savings of approximately \$149 million compared to estimates provided in our
25 ADP filing, and will more than offset the cost increases discussed above. Nobles

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1 and Grand Meadow are also anticipated to benefit from increased savings
2 attributable to the passage of the IRA.

3
4 Q. PLEASE EXPLAIN HOW PTCs ARE USED TO BENEFIT CUSTOMERS.

5 A. PTC benefits are based on actual and expected energy production. We have
6 calculated the PTCs using the levelized methodology approved by the
7 Commission in a previous RER proceeding and in the Company's last electric
8 rate case. The monthly levelized credit amount offsets the revenue requirement.
9 PTC treatment for the re-powered Pleasant Valley wind farm will follow the
10 levelized methodology employed for other wind farms.

11
12 Under this method, the Company forecasts the total PTCs that would be
13 generated during a resource's first ten years of operation, allocates the
14 appropriate amount to the ND jurisdiction, divides this amount by the
15 resource's expected life, and assigns the quotient as a credit to each year of the
16 resource's life.

17
18 The levelized PTC forecast value included in base rates for each wind facility is
19 trued up against actual production. The remaining years of levelized PTCs for
20 each facility have been recalculated using actual production. This means the
21 amount of PTCs generated above the forecasted level, or conversely, the
22 amount of PTCs below the forecasted level, are being passed through to
23 customers evenly over the remaining life of the project, to maintain generational
24 equity. This true-up occurs for all wind projects with production forecasts.
25 Application Volume 3, Section VIII. Adjustments, Workpaper A9 PTC

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1 Amortization shows the currently projected flow back of all the ND PTCs to
2 customers over the life of each wind farm.

3
4 Due to the variability of wind production, we will continue to true-up the PTCs
5 for these projects in future RER petitions, even after the project costs have been
6 incorporated into base rates, as approved in our last rate case Settlement in Case
7 No. PU-20-441.

8
9 The Internal Revenue Service (IRS) issued a notice for a 2023 PTC rate of
10 \$27.50 per MWh for wind farms placed in service after 2021 and a PTC rate of
11 \$28 per MWh for wind farms placed in service prior to 2021. The IRS released
12 2024 rates which increased the PTC rate to \$30 per MWh for wind farms placed
13 in service after 2021 and a PTC rate of \$29 per MWh for wind farms placed in
14 service prior to 2021.

15
16 Q. PLEASE EXPLAIN WHAT PROJECT MODIFICATIONS THE COMPANY MADE TO
17 CREATE SAVINGS.

18 A. The Company originally thought it would be necessary to reinforce the bases of
19 the wind turbines at Border Winds and Pleasant Valley with foundation collars.
20 After the Wind Repower Portfolio was approved, an engineering evaluation was
21 performed on the Projects, and it was determined that it was not necessary to
22 add foundation collars to the turbines. This determination subtracted
23 **[PROTECTED DATA BEGINS PROTECTED DATA**
24 **ENDS]** from the total cost of the Projects.

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1 Q. PLEASE EXPLAIN HOW THE COMPANY HAS UTILIZED A PREFERRED
2 CONTRACTOR TO SECURE SAVINGS.

3 A. When the Company originally filed the plans for repowering Border Winds and
4 Pleasant Valley, the intent was that Vestas, the original equipment manufacturer
5 (OEM), would facilitate the repowering by subcontracting a construction
6 contractor. While this is not how the Company has typically handled
7 constructing new greenfield wind resources, there originally appeared to be
8 advantages in efficiency and coordination to having Vestas manage and control
9 construction. The Company reevaluated the project management as it began to
10 observe increased cost pressures, and determined it would be more economic
11 to remove the construction portion of the repowering from the Vestas package
12 and utilize third-party construction contractors as it had typically done for new
13 wind construction projects. Although we do not have an estimate for the
14 potential savings, we expect this will result in project savings, which will be
15 passed on to our customers, because directly engaging a construction contractor
16 eliminates markup in construction costs that would occur if the OEM was
17 facilitating this portion of the projects. It also provides the Company direct
18 construction control, which will enable optimization of construction resources
19 and the schedule, allowing the Company to obtain the lowest costs.

20
21 Q. HAS THE COMPANY RECEIVED FEDERAL OR STATE SUBSIDIES RELATED TO THE
22 WIND REPOWER PORTFOLIO? IF NOT, PLEASE EXPLAIN WHY NOT.

23 A. The federal PTCs are subsidies that reduce the income tax expense and result
24 in a reduction to the revenue requirement. As previously stated, the Company
25 expects these credits to provide additional benefit over the lives of the wind
26 projects related to Case Nos. PU-17-120; PU-17-372; PU-20-425; and PU-21-93.

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D. Summary

Q. PLEASE SUMMARIZE YOUR TESTIMONY REGARDING THE PRUDENCE OF THE WIND REPOWER PORTFOLIO.

A. The Wind Repower Portfolio has resulted in significant cost savings to customers, relative to the Base Case and the soft cost cap established in the 2021 Settlement. The Wind Repower Portfolio resulted in savings relative to the Base Case in each year since 2022 thus far, with two of the four facilities already placed in service and Pleasant Valley and Border set to come on line in late 2025. And while the Company anticipates that the Wind Repower Portfolio will ultimately exceed the portfolio cost threshold established in the 2021 Settlement, the Wind Power Portfolio results in net savings to customers relative to the Base Case because of the value of tax credits. Additional benefits are now being realized because of decisions the Company made to maximize the availability of tax credits under the IRA and to effectively manage the project. The updated expected net benefits of Border Winds and Pleasant Valley are shown below in Table 3.

Table 3
Updated Net Benefits of Border and Pleasant Valley (\$ millions)

Project Name	Type	ADP Rebuttal Repower Savings (M) (generic wind replacement)	ADP Rebuttal Savings (M) (market price replacement)	Updated Repower Savings \$M (generic wind replacement)	Updated Repower Savings \$M (market price replacement)
		[PROTECTED DATA BEGINS]			
Border Winds	Self-build				
Pleasant Valley	Self-build				

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1 Further detail on the updated cost savings is provided in Exhibit____(CJS-2),
2 Schedule 2.

IV. 2018 SETTLEMENT AND PRUDENCE
OF DAKOTA RANGE

3
4
5
6
7 Q. WHAT IS THE PURPOSE OF THIS SECTION OF YOUR TESTIMONY?

8 A. The purpose of this section of my testimony is to describe the 2018 Settlement
9 agreement the Company entered with Staff on September 18, 2018, to resolve
10 its Application for an Advance Determination of Prudence (ADP) for its 302.4
11 MW Dakota Range Wind project (Dakota Range) in Case No. PU-17-372, and
12 to describe why the project is prudent, despite exceeding the costs set out in the
13 2018 Settlement.

14
15 Q. PLEASE DESCRIBE THE REGULATORY BACKGROUND OF DAKOTA RANGE.

16 A. On October 10, 2017, in Case No. PU-17-372, NSP filed an application for an
17 ADP to build, own, and operate the proposed 302.4MW Dakota Range projects
18 near Watertown, South Dakota. On February 5, 2018, Xcel Energy filed a
19 request to postpone the proceedings while the Company evaluated impacts of
20 the Tax Cuts and Jobs Act (TCJA) on Dakota Range. On March 23, 2018, the
21 Company filed a Supplement to the Dakota Range ADP Application to update
22 the Commission on the effects of the TCJA and other changes to the project
23 and to provide updated economic data and modeling. Based upon this new
24 information, the Company projected that the Dakota Range projects would
25 produce a PVRr savings of \$167 million system-wide and \$9 million for North
26 Dakota customers.

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1 On July 30, 2018, Advocacy Staff filed testimony concluding that the projects
2 were prudent because they would lower electricity costs for the Company's
3 North Dakota customers. Staff recommended certain conditions, including a
4 soft cost cap and that North Dakota rate payers should not pay additional costs
5 if the Company failed to attain 100 percent PTCs.

6
7 Q. PLEASE DESCRIBE THE SETTLEMENT OF DAKOTA RANGE.

8 A. Based on this material agreement, the Parties engaged in settlement discussions.
9 They agreed that a portfolio of wind resources, that included Foxtail, Blazing
10 Star I and II, Freeborn, and Dakota Range I and II and which the Company
11 referred to as the Self-Build Projects, was prudent up to a portfolio cap of
12 **[PROTECTED DATA BEGINS PROTECTED DATA**
13 **ENDS]** and agreed that the budgeted capital expenditure amount for Dakota
14 Range was **[PROTECTED DATA BEGINS PROTECTED**
15 **DATA ENDS]**. The parties further agreed that the projects are prudent up to
16 portfolio wide soft cap. Table 4 below reflects the 2018 Settlement. The parties
17 also agreed that the Company bears the burden of proof to demonstrate the
18 reasonableness of capital expenditures on a portfolio basis for the Wind
19 Repower Portfolio above the settlement soft cap amount on a portfolio basis,
20 and that North Dakota ratepayers will not pay any additional costs if the
21 Company fails to obtain 80 percent PTCs.

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Table 4
2018 Settlement Cap for Self-Build Projects

Line	Wind Facility	Capacity	Budgeted Capital Expenditure Amount (\$ millions)
1	Foxtail	150 MW	[PROTECTED DATA BEGINS]
2	Blazing Star I and II	400 MW	
3	Freeborn	200 MW	
4	Dakota Range	300 MW	
5	Total Self-Build Projects	1,050 MW	PROTECTED DATA ENDS]

Q. WERE THE OTHER PROJECTS IN THIS WIND PORTFOLIO COMPLETED CONSISTENT WITH THEIR PROJECT-SPECIFIC BUDGETED CAPITAL EXPENDITURE AMOUNT IDENTIFIED IN THE 2018 SETTLEMENT?

A. No. As Table 5 below reflects, some of the projects in this portfolio came in under their budgeted capital expenditure amount, while others exceeded that amount.

Table 5
Summary of CWIP for Self-Build Projects (\$s)

	Pre-2022	2022	2023	2024	Total	CWIP Cap	Difference
[PROTECTED DATA BEGINS]							
Blazing Star 1							
Blazing Star II							
Foxtail							
Freeborn							
Dakota Range							
Total Self - Build CWIP							

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1 Q. HOW HAS THE COMPANY ACCOUNTED FOR THE PORTFOLIO OVERAGES?

2 The Company has already been recovering those projects through the RER,
3 however. In the 2025 RER Filing, this portfolio exceeded its aggregate cap by
4 **[PROTECTED DATA BEGINS PROTECTED DATA**
5 **ENDS]**. Because Dakota Range was the last project of the portfolio, the cap
6 limitation was applied to the total project costs of **[PROTECTED DATA**
7 **BEGINS PROTECTED DATA ENDS]**. The project's
8 revenue requirement in the RER was calculated on the project total cost of
9 **[PROTECTED DATA BEGINS PROTECTED DATA**
10 **ENDS]**. The Company's method of accounting for this is appropriate under
11 the circumstances because the Dakota Range project was placed into service
12 almost two years later than the other projects and, as I discuss later in my
13 testimony, achieved sufficient tax credits to more than make up the amount the
14 full portfolio exceeded the cap established in the 2018 Settlement.

15
16 Q. WHEN DID DAKOTA RANGE ACHIEVE COMMERCIAL OPERATION?

17 A. Dakota Range went into service in January 2022.

18
19 Q. HAS THE COMPANY PREVIOUSLY RECOVERED ANY PORTION OF THE COSTS OF
20 DAKOTA RANGE?

21 A. Yes. The Commission approved recovery through the RER in Case No. PU-20-426.

22
23 Q. HOW MUCH DID THE INSTALLATION OF THE DAKOTA RANGE I AND II PROJECTS
24 ULTIMATELY COST THE COMPANY?

25 A. The Dakota Range projects cost the Company **[PROTECTED DATA**
26 **BEGINS PROTECTED DATA ENDS]**. This was a seven

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1 percent increase over the forecasted capital costs identified in the Dakota Range
2 2018 Settlement. But the Company has complied with the IRA's new wage and
3 labor rules and therefore achieved 100 percent PTCs, rather than the originally
4 assumed 80 percent PTCs.

5
6 Q. WHAT CAUSED THE COMPANY TO EXCEED ITS FORECASTED COSTS?

7 A. Multiple factors contributed to Dakota Range exceeding the soft cap set in the
8 2018 Settlement, including lingering supply chain issues resulting from the
9 COVID-19 pandemic. The final balance of plant (BOP) contract and the
10 turbine supply agreement costs were higher than initially estimated and quoted
11 by the vendors. We also had a cost increase for state-mandated independent
12 landowner liaison personnel, and we incurred additional costs to transport
13 materials between our jurisdictions.

14
15 Q. DID THE MATERIAL TRANSPORT BETWEEN JURISDICTIONS OTHERWISE AFFECT
16 THE PROJECT?

17 A. Yes. Although additional costs were incurred, transporting the materials
18 between jurisdictions also helped the Company comply with the IRA's new
19 wage and labor rules and, as a result, helped the Company attain 100 percent
20 PTCs for the Dakota Range projects.

21
22 Q. WHAT IS THE REVENUE REQUIREMENT IMPACT WITH RESPECT TO THIS CASE?

23 A. The Company does not calculate the revenue requirement on individual projects
24 in the context of a rate case filing. However, for illustrative purposes, the
25 revenue requirement in Attachment 2 to the 2025 RER Filing would be
26 comparable to the revenue requirement impact in this case. The revenue

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1 requirement for Dakota Range in 2025 is \$1.6 million, and if the cap is removed
2 to be consistent with the Company's proposal in the rate case it would be \$2.1
3 million.

4
5 Q. PLEASE EXPLAIN WHAT YOU MEAN REGARDING THE 100 PERCENT PTCs.

6 A. The project was originally expected to qualify for PTCs at the 80 percent level.
7 In response to the modified IRS guidance in 2020, a cross-functional team
8 immediately undertook efforts to determine whether Dakota Range could be
9 converted into a 100 percent PTC project. The Company identified wind
10 turbine equipment in our overall Xcel Energy inventory that could be deployed
11 to the Northern States Power Company-Minnesota (NSPM) operating
12 company, allowing the Company to qualify for PTCs at the 100 percent level
13 for the projects. We expect these efforts to provide an additional \$80-90 million
14 of benefits over the project life of Dakota Range.

15
16 Q. COULD YOU HAVE ATTAINED 100 PERCENT PTCs WITHOUT INCURRING THE
17 ADDITIONAL COSTS ASSOCIATED WITH MOVING THE MATERIALS BETWEEN
18 JURISDICTIONS?

19 A. It is unlikely the Company would have qualified for PTCs at the 100 percent
20 rate if it had not exceeded the original cost estimates, because a portion of the
21 cost overages were used to take the steps necessary to qualify for the 100 percent
22 PTCs, as explained above.

23
24 Q. DO THE BENEFITS ASSOCIATED WITH ATTAINING THE 100 PERCENT PTCs
25 OUTWEIGH THE COSTS BY WHICH THE COMPANY EXCEEDED THE 2018
26 SETTLEMENT SOFT COST CAP?

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1 A. Yes. While the Company's costs exceeded the soft cap by **[PROTECTED**
2 **DATA BEGINS**
3 **PROTECTED DATA ENDS]**, it did so while claiming 20
4 percent more in tax credits than the 2018 Settlement contemplated. The
5 increased tax credits resulted in benefits of more than four times the costs
6 exceedance.

7
8 Q. HAS THE COMPANY RECEIVED, OR DOES IT EXPECT TO RECEIVE FEDERAL OR
9 STATE SUBSIDIES RELATED TO THE DAKOTA RANGE PROJECTS?

10 A. In 2018 the Company accepted a grant from the state of South Dakota through
11 the Reinvestment Payment Program. The details of the grant were discussed in
12 the RER Filing, PU-24-341. As discussed in the previous repower section, the
13 federal PTCs are subsidies that reduce the income tax expense and result in a
14 reduction to the revenue requirement, and the Company expects these credits
15 to provide additional benefit over the life of the wind project.

16
17 Q. DOES THE COMPANY CONCLUDE THE INCREASE IN COST OF THE DAKOTA
18 RANGE PROJECTS WAS PRUDENTLY INCURRED?

19 A. Yes. Staff agreed, and the Commission approved, the 2018 Settlement which
20 concluded the Dakota Range projects were prudent up to **[PROTECTED**
21 **DATA BEGINS** **PROTECTED DATA ENDS]** with PTCs
22 at a rate of 80 percent. Although construction costs and other delays beyond
23 the Company's control resulted in cost exceedance, as explained above, the
24 extra costs were at least in part to help the Company qualify for PTCs at the
25 higher rate, and the PTCs return substantially more value to the Company and

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1 its customers, who are already receiving the increased PTC value, than the value
2 of the cost overage.

V. CONCLUSION

6 Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL DIRECT TESTIMONY?

7 A. Yes, it does.

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Northern States Power Company
Comparison of Wind Repower Portfolio Budgeted Capital Expenditures
to Current Actual Capital Costs

Case No. PU-24-376
Exhibit___(CJS-2), Schedule 1
Page 1 of 1

Total Company (NSPM) Electric (\$s)

2017 Self-Build portfolio - Filed March 2018 - Recovered in Base Rates - PTCs recovered in RER

Wind Farm	Docket #	MW	Total Capital Cost w/o AFUDC	Total Cap Approved (ND) w/o AFUDC	Variance, over/(under) cap	Variance explanation including drivers
[PROTECTED DATA BEGINS]						
Blazing Star I + II	17-120	400				Tech Changes (turbine types), COVID pandemic impacts
Foxtail	17-120	150				Weather delays
Freeborn	17-120	200				Delayed work due to productivity loss from distancing measures and supply chain issues during pandemic, tariffs
Dakota Range	17-372	300				Engineering, Procurement, and Construction cost increases along with added network upgrade costs
Total		1050				
PROTECTED DATA ENDS						

2017 BOT - Filed March 2018 - Recovered in Base Rates - PTCs recovered in RER

Wind Farm	Docket #	MW	Total Capital Cost w/ AFUDC	Total Cap Approved (ND) w/ AFUDC	Variance, over/(under) cap	Variance explanation including drivers
[PROTECTED DATA BEGINS]						
Lake Benton	17-372	100				
Crowned Ridge	17-372	200				Project reduced from 300MW to 200MW due to developer change in scope of project
Total		300				Clean Energy #1 100MW was not included in the DR request, but was the remaining balance of the 1,550 MW portfolio
		1350	PROTECTED DATA ENDS]			

2020 Re-Power Portfolio - Filed May 2021 - Recovered in RER

Wind Farm	Docket #	MW	Total Capital Cost w/o AFUDC	Total Cap Approved (ND) w/o AFUDC	Variance, over/(under) cap	Variance explanation including drivers
[PROTECTED DATA BEGINS]						
Border Winds	20-425	150				Vestas cost increase, unestimated ND sales tax, delayed construction
Grand Meadows	20-425	100.5				Less weather delays and civil/ restoration than allocated
Nobles	20-425	201				reduced 1 turbine, reduced EPC mobilization- negotiated with EPC contract between Grand Meadow and Nobles
Pleasant Valley	20-425	200				Vestas cost increase, delayed construction
Total		651.5				
PROTECTED DATA ENDS]						

2020 Re-Power Portfolio - Filed May 2021 - Northern Wind not approved in ADP approved proxy pricing through ND Fuel Clause

Wind Farm	Docket #	MW	Total Capital Cost w/AFUDC	Budgeted Capital w/AFUDC	Variance, over/(under) cap	Variance explanation including drivers
[PROTECTED DATA BEGINS]						
Northern Wind	21-93	100				The original MN filing included Rock Aetna and Northern Winds combined total \$226M
Total						
PROTECTED DATA ENDS]						

Pleasant Valley		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050		
August 10, 2021 Rebuttal Testimony		[PROTECTED DATA BEGINS]																												
Revenue Requirements, PVRR, LCOE																														
Existing Plant to Reg Asset at Repower COD																														
Repowered Plant																														
Total Revenue Requirements																														
PVRR																														
MWh																														
LCOE																														
Update																														
Revenue Requirements, PVRR, LCOE																														
Existing Plant to Reg Asset at Repower COD																														
Repowered Plant																														
Total Revenue Requirements																														
PVRR																														
MWh																														
LCOE																														
Incremental Cost (Savings)																														
PVRR																														
LCOE		PROTECTED DATA ENDS]																												
Border Winds		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050		
August 10, 2021 Rebuttal Testimony		[PROTECTED DATA BEGINS]																												
Revenue Requirements, PVRR, LCOE																														
Existing Plant to Reg Asset at Repower COD																														
Repowered Plant																														
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MWh																														
LCOE																														
Incremental Cost (Savings)																														
PVRR																														
LCOE		PROTECTED DATA ENDS]																												


STATE OF NORTH DAKOTA
BEFORE THE
PUBLIC SERVICE COMMISSION

NORTHERN STATES POWER COMPANY)
2025 ELECTRIC RATE INCREASE)
APPLICATION)

Case No. PU-24-376

**AFFIDAVIT OF
Christopher J. Shaw**

I, the undersigned, being first duly sworn, depose and say that the foregoing is the Supplemental Testimony of the undersigned, and that such Supplemental Testimony and the exhibits or schedules sponsored by me to the best of my knowledge, information and belief, are true, correct, accurate and complete, and I hereby adopt said testimony as if given by me in formal hearing, under oath.



Christopher J. Shaw

Subscribed and sworn to before me, this 7th day of May, 2025.



Notary Public

My Commission Expires:

