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Direct Testimony  
Christopher J. Shaw

**STATE OF NORTH DAKOTA  
BEFORE THE  
NORTH DAKOTA PUBLIC SERVICE COMMISSION**

In the Matter of the Application of Northern States Power Company  
for an Advance Determination of Prudence for the Acquisition of the  
120 MW Northern Wind Facility

Case No. PU-21-\_\_\_\_  
Exhibit\_\_\_\_(CJS-1)

**Policy**

March 2, 2021

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**I. INTRODUCTION AND QUALIFICATIONS**

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Q. PLEASE STATE YOUR NAME AND TITLE.

A. My name is Christopher J. Shaw. I am a Regulatory Policy Manager for Northern States Power Company – Minnesota (NSP or Xcel Energy or the Company).

Q. PLEASE DESCRIBE YOUR QUALIFICATIONS AND EXPERIENCE.

A. I have worked for Xcel Energy since November 2015, initially as a Principle Rate Analyst. I began my current position in August 2018.

Prior to joining Xcel Energy, I worked for the Minnesota Department of Commerce and the Minnesota Attorney General’s Office. My statement of qualifications is provided as Exhibit\_\_\_(CJS-1), Schedule 1.

Q. WHAT ARE YOUR CURRENT RESPONSIBILITIES?

A. In my current role, I work with the Resource Planning team on the development of resource plans and acquisitions for the five-state integrated Upper Midwest Northern States Power Company system (NSP System), which provides electric service to customers in North Dakota, South Dakota, Minnesota, Wisconsin, and Michigan. This includes assisting the Company in making reasonable and prudent acquisition decisions for electric generation resources.

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1 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

2 A. The purpose of my testimony is to provide support for the Company's request  
3 for an Advance Determination of Prudence (ADP) for the proposed  
4 acquisition of the repowered and expanded Northern Wind project. In my  
5 testimony, I detail the transaction and discuss the policy issues related to the  
6 matter, and address the prudence of the proposed acquisition in support of  
7 the Company's ADP Application (Application).

8

9 Q. HOW IS YOUR TESTIMONY STRUCTURED?

10 A. My testimony covers the following topics:

- 11 • Regulatory Matters;
- 12 • Description of the Project;
- 13 • Prudence of the Project; and
- 14 • Presentation of Witnesses.

15

16

**II. REGULATORY MATTERS**

17

18 Q. PLEASE DESCRIBE THE COMPANY'S REQUIREMENTS WITH RESPECT TO THIS  
19 ADP.

20 A. North Dakota Century Code (N.D.C.C.) section 49-05-16 allows a public  
21 utility to seek an ADP from the Commission at the utility's discretion.  
22 However, pursuant to the Settlement Agreement in Case No. PU-07-776, the  
23 Company is obligated to file an Application for an ADP for its acquisition of  
24 generating resources with at least 50 megawatts (MW) in capacity.<sup>1</sup> In Case

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<sup>1</sup> *N. States Power Co. Elec. Rate Increase Application*, Case No. PU-07-776, ORDER ADOPTING SETTLEMENT AGREEMENT at 6 of Settlement Agreement (Dec. 31, 2008).

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1 No. PU-12-59, Xcel Energy committed to filing its ADP applications within  
2 14 days of seeking similar approvals in Minnesota.<sup>2</sup>

3  
4 Q. IS THE COMPANY MEETING NORTH DAKOTA FILING REQUIREMENTS WITH  
5 THIS APPLICATION AND SUPPORTING TESTIMONY?

6 A. Yes. This Application complies with the requirements of N.D.C.C. § 49-05-  
7 16 and the Settlement Agreement in Case No. PU-07-776. Additionally, in  
8 accordance with our commitment in Case No. PU-12-59, the Company is  
9 submitting the Application within 14 days of filing a petition seeking approval  
10 for the Northern Wind acquisition in Minnesota, which occurred on February  
11 16, 2021. Finally, the Application and supporting testimony demonstrate the  
12 prudence of the Company's acquisition of the facility.

13  
14 **III. DESCRIPTION AND PURPOSE OF THE**  
15 **PROPOSED ACQUISITION**

16  
17 **A. Project Background and Description**

18 Q. PLEASE DESCRIBE THE NORTHERN WIND PROJECT.

19 A. The proposed Northern Wind project is a complete replacement and  
20 expansion of the existing Chanarambie and Viking wind projects located in  
21 Murray County, Minnesota, which together total 100 MW. The repowering  
22 will be completed by the current owner of these projects, ALLETE Clean  
23 Energy, Inc. (ALLETE). The Northern Wind project also includes a to-be-  
24 built 20 MW greenfield expansion of this existing facility with Rock Aetna

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<sup>2</sup> *N. States Power Co. Advance Prudence – Geronimo Wind Application*, Case No. PU-12-59, LETTER OF COMMITMENT (Nov. 5, 2012).

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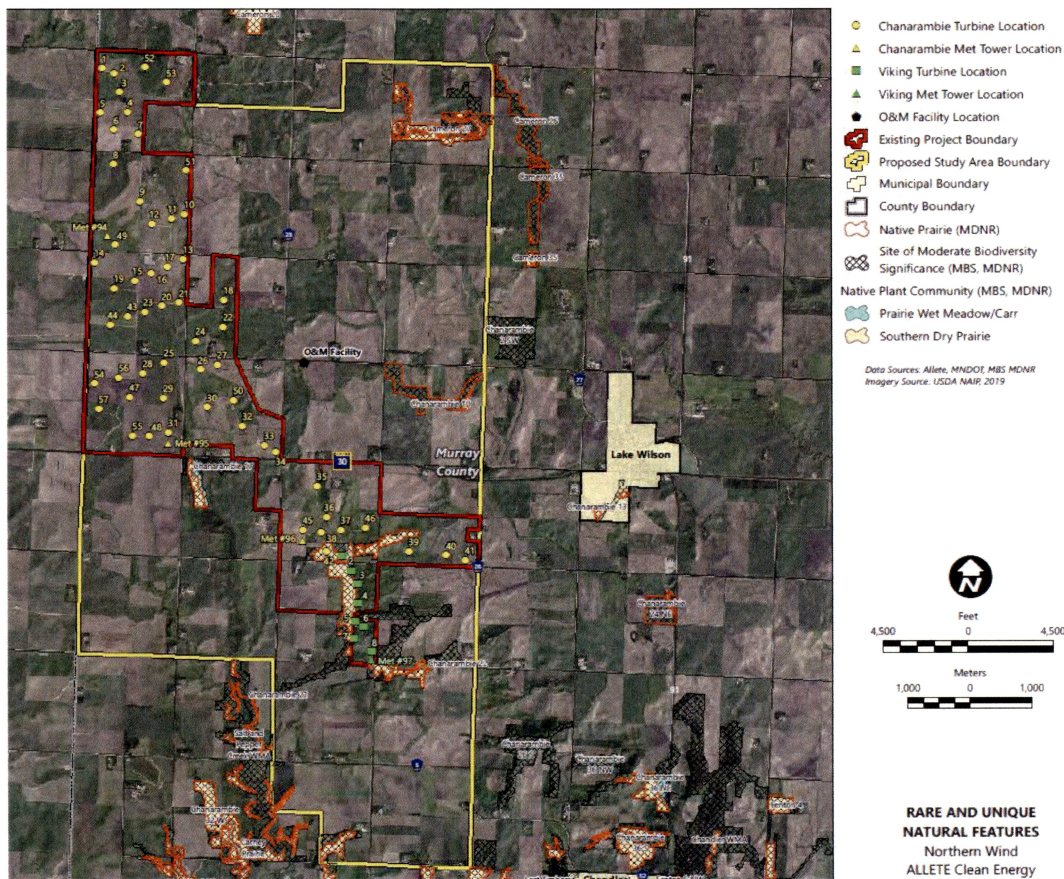
1 Power Partners, LLC (Rock Aetna), immediately adjacent to the existing  
2 facility.

3  
4 Q. WHAT IS THE CURRENT STATUS OF THE CHANARAMBIE AND VIKING WIND  
5 PROJECTS?

6 A. The Company is the offtaker of the 100 MW total output of these two projects  
7 pursuant to power purchase agreements (PPAs), and has been recovering the  
8 costs of these PPAs through the Fuel Cost Rider (FCR) since they were both  
9 placed into service in 2003. There are currently two years remaining on the  
10 PPA terms. With the planned 20 MW greenfield expansion of the existing  
11 Chanarambie and Viking facilities, the total nameplate of the proposed  
12 Northern Wind acquisition is 120 MW. Figure 1 depicts the existing Northern  
13 Wind facility (outlined in red) and proposed Rock Aetna expansion area  
14 (outlined in yellow).

1

Figure 1: Northern Wind Repowering Project Location



2

3

4 **B. Project Need and Selection Process**

5 Q. WHY IS THE COMPANY PROPOSING THE ACQUISITION OF THE NORTHERN  
6 WIND PROJECT?

7 A. The Northern Wind project was identified in the same July 27, 2020  
8 solicitation for wind repowering projects (2020 Wind Repowering Solicitation)  
9 that I described in my Direct Testimony in Case No. PU-20-425. The  
10 Company issued the 2020 Wind Repowering Solicitation at the request of our  
11 Minnesota regulators to explore projects that might provide some economic  
12 stimulus in light of recessionary conditions resulting from the COVID-19  
13 pandemic. In response to that request and in an effort to reduce costs, the

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1 Company considered a variety of investments that could both benefit our  
2 customers and support the economy in our service area. Because we believed  
3 that repowering older projects in our fleet might achieve both aims, we issued  
4 the 2020 Wind Repowering Solicitation seeking proposals for repowering  
5 opportunities.

6  
7 Q. DID THE COMPANY HAVE A SPECIFIC CAPACITY TARGET IN ISSUING THE 2020  
8 WIND REPOWERING SOLICITATION?

9 A. No. The 2020 Wind Repowering Solicitation did not identify a specific  
10 capacity target for repowering; the Company was open to pursuing any project  
11 that, as part of the full portfolio of projects, would provide economic benefit  
12 to our customers.

13  
14 Q. HOW DID THE COMPANY EVALUATE THE REPOWERING PROPOSALS?

15 A. The 2020 Wind Repowering Solicitation set out a multi-phase analysis process  
16 to determine the final portfolio of proposed projects. Our approach was  
17 similar to the one we used for the acquisition of the wind portfolio approved  
18 by the Commission in Case No. PU-17-120, in which both outside developers  
19 and Company self-build options were considered. Accordingly, the Company  
20 developed self-build bid proposals which were completed and submitted  
21 before the August 21, 2020 due date for responses to the solicitation.

22  
23 Q. WHAT RESPONSE DID THE COMPANY RECEIVE TO THE SOLICITATION?

24 A. We received 11 total bids for 9 distinct projects in response to the 2020 Wind  
25 Repowering Solicitation. Some bidders provided multiple options for the  
26 same project, with varying parameters such as commercial operation date

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1 (COD) and expected production tax credit (PTC) qualification. After our first  
2 phase of review, we determined that four of the bids we received were initially  
3 incomplete. However, all bidders were able to remedy the identified  
4 deficiencies noted at this preliminary stage, and all bids moved forward to  
5 more substantive evaluation.

6  
7 Q. HOW DID THE COMPANY SUBSTANTIVELY EVALUATE THE PROPOSALS?

8 A. We examined a variety of factors, such as bidder credit worthiness, bidder  
9 development experience, and whether the proposed project meets required  
10 interconnection standards. Most importantly, we analyzed whether a proposed  
11 project would result in cost savings for our customers.

12  
13 Q. HOW DID THE COMPANY EVALUATE WHETHER A PROJECT WOULD RESULT IN  
14 SAVINGS?

15 A. We first ran each individual proposed project through a “pro forma”  
16 spreadsheet analysis. This analysis compares the expected costs of each  
17 repower proposal to a baseline where the existing (unrepowered) project  
18 remains in our portfolio to the end of its expected life and is replaced by a  
19 generic wind resource thereafter. Pro forma modeling allowed us to screen  
20 projects for expected benefits prior to full resource planning modeling.

21  
22 In the course of this evaluation, we discovered that two of the projects bid  
23 into the solicitation were not expected to yield customer benefits at the price  
24 and terms provided. One of these projects was the repowering of the existing  
25 Chanarambie and Viking wind facilities proposed by ALLETE. The Company  
26 ultimately decided to move forward with seven projects that demonstrated

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1 customer benefits, including the four projects totaling 651 MW for which the  
2 Company requested an ADP in Case No. PU-20-425, and three additional  
3 projects totaling 67 MW for which no ADP was requested because the  
4 projects are below the 50 MW threshold for ADP applications agreed to in  
5 Case No. PU-07-776.

6  
7 Q. DID THE COMPANY CONTINUE NEGOTIATIONS WITH ALLETE AFTER ITS  
8 PROPOSAL WAS NOT ONE OF THE PROJECTS SELECTED?

9 A. Yes. While ALLETE's bid was not initially selected, the Company and  
10 ALLETE continued discussions in an effort to increase the customer benefits  
11 of the proposed Project. After extensive negotiations, the Company recently  
12 reached an agreement with ALLETE to buy out the current Chanarambie and  
13 Viking PPAs and replace, expand and acquire the repowered Northern Wind  
14 facility.

15  
16 Q. HOW DID THE ROCK AETNA EXPANSION COME ABOUT?

17 A. While negotiating the repowering of the existing Chanarambie and Viking  
18 wind projects, ALLETE and the Company identified a 20 MW greenfield  
19 expansion opportunity with Rock Aetna immediately adjacent to the existing  
20 facility. This expansion would increase the total nameplate of the proposed  
21 Northern Wind acquisition to 120 MW.

22  
23 Q. WHAT IS THE STATUS OF THE 20 MW ROCK AETNA EXPANSION PROPOSAL?

24 A. The proposed 20 MW Rock Aetna expansion is currently moving forward but  
25 there are two additional considerations for development of the Rock Aetna  
26 site that should be noted. First, the executed Generator Interconnection

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1 Agreement for the Rock Aetna site requires approval from the Federal Energy  
2 Regulatory Commission (FERC) to change the COD in the Agreement from  
3 December 1, 2021 to December 1, 2022. The amended COD is required due  
4 to interruptions and delays in the development process caused by the COVID-  
5 19 pandemic. Rock Aetna filed a COD waiver request with FERC on February  
6 4, 2021 and requested that FERC “act expeditiously in approving this Waiver  
7 Request by no later than February 28, 2021.”<sup>3</sup> We do not expect this request  
8 to be controversial but as of the date of this testimony, FERC has not acted  
9 on the waiver request.

10  
11 Q. WHAT IS THE SECOND ADDITIONAL CONSIDERATION AT THE PROPOSED ROCK  
12 AETNA EXPANSION SITE?

13 A. In addition to the COD issue, the Rock Aetna expansion may impact North  
14 American Aerospace Defense Command (NORAD) radar arrays through  
15 saturation. This issue will be addressed as part of the site permitting in  
16 Minnesota, and must ultimately be resolved through Determinations of No  
17 Hazard (DNHs) issued by the Federal Aviation Administration (FAA). As part  
18 of that process, the FAA will work with NORAD to determine if it has any  
19 concerns with the proximity of the Northern Wind facility to the Tyler Radar  
20 facility. ALLETE is responsible for obtaining the DNHs (and undertakes all  
21 of the risk of doing so), and it is a condition precedent in the executed  
22 Purchase and Sale Agreement (PSA) for the Northern Wind Project that  
23 ALLETE obtain a DNH for each proposed turbine site prior to moving  
24 forward to closing.

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<sup>3</sup> Request of Rock Aetna Power Partners, LLC for Prospective Tariff Waiver, Expedited Action, and Shortened Comment Period, FERC Docket No. ER21-1066-000 (Feb. 4, 2021).

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Q. DOES THE COMPANY PLAN TO MOVE FORWARD WITH THE CHANARAMBIE AND VIKING REPOWERING IF THE ROCK AETNA EXPANSION DOES NOT OCCUR?

A. Yes. The PSA with ALLETE is structured to allow the repowering and acquisition of the 100 MW Chanarambie and Viking wind projects to move forward even if ALLETE is unable to achieve site permitting for the Rock Aetna portion of the facility. If ALLETE is unable to obtain FERC approval of the COD revision or the necessary DNHs from the FAA, the Company will move forward with the 100 MW repowering and will not be required to pay for any costs associated with the Rock Aetna portion of the project.

**C. Terms of the Proposed Acquisition**

Q. PLEASE DESCRIBE THE KEY TERMS OF THE NORTHERN WIND PSA.

A. Under the Northern Wind PSA with ALLETE, the Company will buy out the existing PPA and purchase the entire repowered and expanded Northern Wind facility for \$210 million. The purchase price includes [TRADE SECRET BEGINS TRADE SECRET ENDS] for the 100 MW of repowering and [TRADE SECRET BEGINS TRADE SECRET ENDS] for the additional 20 MW. Additionally, the project is expected to qualify for [TRADE SECRET BEGINS TRADE SECRET ENDS] PTC.

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1 Q. AT THIS PRICE, WHAT IS THE LEVELIZED COST OF ENERGY OVER THE LIFE OF  
2 THE PROJECT?

3 A. At the agreed upon purchase price, the estimated levelized cost of energy  
4 (LCOE) over the 25-year life of the Northern Wind project is just under  
5 **[TRADE SECRET BEGINS                      TRADE SECRET ENDS]**.

6

7 Q. IS THIS A REASONABLE PRICE FOR A REPOWERED WIND FACILITY?

8 A. Yes. This LCOE is comparable to the other repowering projects selected in  
9 the 2020 Wind Repowering Solicitation. As presented to the Commission in  
10 Case No. PU-20-425, the LCOEs for the other four projects for which the  
11 Company has requested ADPs ranged from **[TRADE SECRET BEGINS**  
12 **TRADE SECRET ENDS]**. As noted above,  
13 the pricing and terms of ALLETE's initial bid would not have produced  
14 customer benefits, but the proposed Northern Wind project as agreed to in  
15 the PSA provides a competitive price point.

16

17 Q. IS THE NORTHERN WIND ACQUISITION LEAST COST?

18 A. Yes. The Company is always seeking opportunities to make investments in  
19 reasonably priced energy facilities that will lower costs for customers over  
20 their lives. The Northern Wind Project meets that definition. Finding  
21 Northern Wind to be least cost under the Commission's resource planning  
22 principles in this Case would be applying the same analysis that the  
23 Commission undertook in Case No. PU-17-120.

24

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1 Q. WHAT IS THE ANTICIPATED COMMERCIAL OPERATION DATE OF THE  
2 NORTHERN WIND PROJECT?

3 A. The current target COD is December 1, 2022, pending FERC approval of  
4 Rock Aetna's waiver request that I discussed earlier. If the revision to the  
5 COD in the Generator Interconnection Agreement is approved, ALLETE  
6 will deliver a fully repowered project on the COD.

7

8 **D. Project Benefits**

9 Q. WILL THE PROPOSED NORTHERN WIND ACQUISITION BENEFIT NORTH  
10 DAKOTA CUSTOMERS?

11 A. Yes. As discussed further in Ms. Mandich's Direct Testimony, the Company's  
12 EnCompass analysis estimates the savings to customers from the acquisition  
13 of the repowered and expanded Northern Wind project to be \$54 million on  
14 a present value of revenue requirement (PVRR) basis. This analysis assumes  
15 the other repowering projects selected in the 2020 Wind Repowering  
16 Solicitation and presented to the Commission in Case No. PU-20-425 are  
17 added to the NSP System. In this portfolio context, the Company's  
18 repowering of the Chanarambie and Viking projects will keep these renewable  
19 resources on the NSP System at a lower cost than keeping each project in  
20 service until the end of its current asset life and then replacing it with generic  
21 resources.

22

23 Q. DID THE COMPANY PERFORM A PRO FORMA ANALYSIS OF THE PROPOSED  
24 NORTHERN WIND ACQUISITION?

25 A. Yes, the Company's pro forma analysis found that the proposed Northern  
26 Wind project is expected to generate \$30.2 million of customer savings over

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1 its lifetime, as compared to continuing the existing PPAs to the end of their  
2 terms and adding generic wind energy equivalent to the Project thereafter.  
3 Additionally, because Advocacy Staff has requested it in prior proceedings,  
4 we also performed a pro forma analysis in which we compared the Project to  
5 a baseline in which the replacement energy is market priced.

6  
7 Q. ARE THERE OTHER ECONOMIC BENEFITS OF THE PROPOSED NORTHERN  
8 WIND REPOWERING AND EXPANSION?

9 A. Yes, in addition to the benefits to our customers from reduced costs, the  
10 Project will benefit the community by generating good-paying construction  
11 jobs in the near-term and payments to landowners and property tax payments  
12 during the extended life of the projects. Specifically, we estimate that the  
13 project will create approximately 200 temporary construction jobs over the  
14 duration of the repowering project. These job creation and lease and tax  
15 benefits are similar to the impacts of the Border Winds project located in  
16 North Dakota that is part of the Wind Repowering Portfolio submitted in  
17 Case No. PU-20-425.

18  
19 **IV. PRUDENCE OF THE**  
20 **NORTHERN WIND ACQUISITION**

21  
22 Q. IS THE NORTHERN WIND ACQUISITION PRUDENT?

23 A. Yes. The Company's modeling indicates that customers will benefit from the  
24 acquisition of the repowered and expanded Northern Wind facility because it  
25 will create cost savings of approximately \$54 million on a system wide PVRR  
26 basis. These financial benefits will be reflected in a lower cost of energy and

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1 will serve as a hedge against future increases in fuel costs and potential  
2 governmental regulation. In addition to financial benefits for customers, the  
3 Northern Wind repowering project is part of a broader effort to spur and  
4 sustain jobs across our service territory in response to the recessionary  
5 conditions created by the COVID-19 pandemic.

**V. PRESENTATION OF WITNESSES**

6  
7  
8  
9 Q. WHO ARE THE WITNESSES FOR THE COMPANY IN THIS PROCEEDING?

10 A. In addition to my Policy Testimony, the Company sponsors the following  
11 witness:

- 12 • Ms. Farah L. Mandich details the Company's analyses of the cost  
13 savings the Company expects to achieve through the Northern Wind  
14 repowering and acquisition.

**VI. CONCLUSION**

15  
16  
17  
18 Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

19 A. For the reasons stated above, the Company's acquisition of the repowered  
20 Northern Wind project is prudent and the ADP should be granted without  
21 conditions.

22  
23 Q. DOES THIS CONCLUDE YOUR PRE-FILED DIRECT TESTIMONY?

24 A. Yes, it does.



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## EXPERIENCE

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### **Xcel Energy**

*Manager, Regulatory Policy*

8/18-Present

*Principal Rate Analyst*

11/15-8/18

Developed strategy, coordinated subject matter expert analysis and prepared filings for the 2019 Upper Midwest Integrated Resource Plan (IRP), the 2016 IRP filing, Resource Treatment Framework (RTF), and resource acquisitions. Represented the Company at hearings on the IRP and other resource related proceedings.

### **Minnesota Department of Commerce-Division of Energy Resources**

*Public Utilities Rates Analyst*

8/06-6/12 & 6/13-11/15

Developed and supported the recommendations of the Department of Commerce in proceedings before the Minnesota Public Utilities Commission. Performed analysis of utility regulatory filings. Appeared as an expert witness in numerous contested cases. Analyzed proposed legislation and prepared reports for the Minnesota Legislature.

### **Minnesota Office of the Attorney General-Anti-Trust and Utilities Division**

*Assistant Attorney General*

6/12-6/13

Advocated for residential and small business energy consumers on behalf of the Attorney General, including advocacy in Xcel Energy's 2012 rate case.

## EDUCATION

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University of Wisconsin Law School, Madison, WI  
J.D.

University of Wisconsin-Madison, Madison, WI  
B.A.  
Major: Economics-Mathematical Emphasis