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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
Heartland Divide Wind II

Case No. PU-20-____
Exhibit___(CJS-1)

Policy

October 29, 2020

TABLE OF CONTENTS

I. INTRODUCTION AND QUALIFICATIONS

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.

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

A. The purpose of my testimony is to provide support for the Company's request for an Advance Determination of Prudence (ADP) for the proposed Power Purchase Agreement (PPA) between the Company and Heartland Divide II Wind, LLC (Seller), to acquire 200 MW in wind energy generation (Heartland Divide II PPA). The Heartland Divide Wind II facility (Facility) will be located in Audubon County, Iowa. In my testimony, I detail the transaction and discuss the policy issues related to the matter, and address the prudence of the Heartland Divide II PPA in support of the Company's ADP Application (Application).

Q. HOW IS YOUR TESTIMONY STRUCTURED?

A. My testimony covers the following topics:

- Regulatory Matters;
- Description and Purpose of the Heartland Divide II Facility;
- Prudence of the Heartland Divide PPA; and
- Presentation of Witnesses.

II. REGULATORY MATTERS

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

A. North Dakota Century Code (N.D.C.C.) section 49-05-16 allows a public utility to seek an ADP from the Commission at the utility's discretion. However, pursuant to the Settlement Agreement in Case No. PU-07-776, the

Company is obligated to file an Application for an ADP for its acquisition of generating resources above 50 MW.[1] Additionally, under the Revised Second Amended Comprehensive Settlement Agreement in Case No. PU-12-813, the Company requires an ADP for all PPAs over 50 MW before such costs can be included for recovery in the Company's Fuel Cost Recovery (FCR) rider.[2] In Case No. PU-12-59, Xcel Energy committed to filing its ADP applications within 14 days of seeking similar approvals in Minnesota.[3]

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

A. Yes. This Application complies with the requirements of N.D.C.C. § 49-05-16 and the Settlement Agreements in Case Nos. PU-07-776 and PU-12-813. Additionally, in accordance with our commitment in Case No. PU-12-59, the Company is submitting this Application on the same day that it files a similar application for approval of the Heartland Divide II PPA in Minnesota. Finally, the Application and supporting testimony demonstrate the prudence of the Company's acquisition of the facility.

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[1] *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).

[2] *N. States Power Co. Elec. Rate Increase Application*, Case No. PU-12-813, ORDER ADOPTING SETTLEMENT at 10 of attached Second Amended Comprehensive Settlement Agreement (Feb. 26, 2014).

[3] *N. States Power Co. Advance Prudence – Geronimo Wind Application*, Case No. PU-12-59, LETTER OF COMMITMENT (Nov. 5, 2012).

III. DESCRIPTION AND PURPOSE OF THE HEARTLAND DIVIDE II PPA

A. Project Background and Description

Q. PLEASE DESCRIBE THE PROPOSED HEARTLAND DIVIDE II PROJECT.

A. The Heartland Divide Wind II Project will be a 200 MW wind facility located in Audubon County, Iowa with a targeted Commercial Operation Date (COD) of December 31, 2021 and a PPA term of 25 years. The Project will interconnect to the Midcontinent Independent System Operator Inc. (MISO) system at MidAmerican Energy's Fallows Avenue 345 kV substation, located in Adair County, Iowa. This area is in MISO's Local Resource Zone 3. The Project will consist of **[TRADE SECRET BEGINS . . . . . . TRADE SECRET ENDS]**.

B. Need for Heartland Divide II PP

Q. WHY IS THE COMPANY PROPOSING TO ADD THE HEARTLAND DIVIDE II PPA TO THE NSP SYSTEM?

A. The proposed Heartland Divide II PPA is the result of the Company's solicitation of a wind project to support our Retail Electric Service Agreement with Honeycrisp LLC (an affiliate of Google LLC) for a planned data center in Becker, Minnesota (Honeycrisp LLC ESA).

Q. PLEASE DESCRIBE THE HONEYCRISP LLC ESA.

A. In 2019, the Company announced it had reached an agreement with Honeycrisp LLC to develop a data center campus at the Company's Sherco site in Sherburne County, Minnesota. To support this economic development project, the Company and Honeycrisp executed a Retail Electric Service Agreement to serve the planned data center. As presented by the Company in Case No. PU-18-430, a critical piece of inducing Honeycrisp to invest in the data center is a commitment by the Company to procure sufficient incremental renewable generation to match the data center site's expected annual energy use. Practically, this will be demonstrated by retiring Renewable Energy Credits (RECs) in amounts equal to the site's annual energy use. Prior to this new load being realized on our system, the Company can "bank" RECs for the electricity generated, with the opportunity to later use the banked RECs to offset future demand from the data center.

Q. WHY IS HEARTLAND DIVIDE II NEEDED TO SUPPORT THE HONEYCRISP LLC ESA?

A. We estimated, at the time we signed the Honeycrisp LLC ESA, that the Company would need to procure 300 MW of incremental wind generation to meet its initial renewable energy obligations under the Honeycrisp LLC ESA. In December 2019, the Commission approved an ADP for Dakota Range III (Case No. PU-18-430), which will provide the first 150 MW of energy needed for the data center. The Heartland Divide II PPA will provide the remaining 150 MW of wind energy needed to serve the anticipated data center load.

Q. WILL THE HONEYCRISP LLC ESA BENEFIT NSP CUSTOMERS?

A. Yes. The Heartland Divide II PPA is necessary for supporting the data center, which, as a large load with a high capacity factor, should provide significant benefits to all NSP customers, including North Dakota customers. These benefits accrue by increasing overall system load and thereby creating more energy sales which should lower rates, or mitigate rate increases. For our North Dakota customers, these benefits accrue through the increasing load in Minnesota shifting system costs from North Dakota to Minnesota by changing the ratios by which costs are allocated. But even if the data center were to not need all of the electricity produced by the Heartland Divide II wind facility, this PPA would still benefit customers as a system resource, because the fixed energy pricing from this PPA will lower the Company's overall costs resulting in lower costs for customers.

Q. HOW WILL THE REMAINING 50 MW OF THE HEARTLAND DIVIDE II PROJECT BE ALLOCATED?

A. The remaining 50 MW provided under the Heartland Divide II PPA will be assigned to the Renewable*Connect program in Minnesota, and as a result the energy costs will be borne directly by participants in that program. The Company began offering the Renewable*Connect pilot in 2017 to meet customer demand for a voluntary green tariff, consistent with Minnesota's Renewable and High-Efficiency Rate Options statute (Minn. Stat. § 216B.169). The Company has a fully-subscribed waiting list for the Renewable*Connect program, and has therefore proposed to expand it in Minnesota. Because the Renewable*Connect program is Minnesota based, and energy from the 50 MW of Heartland Divide will not be allocated to our North Dakota customers, we are not seeking an ADP for this portion of the project pursuant to the Settlement Agreement in Case No. PU-07-776.[4]

Q. HOW WILL THE COSTS AND ENERGY OF THE HEARTLAND DIVIDE II PROJECT BE ALLOCATED?

A. The Company will allocate 75 percent of the costs and energy of the Heartland Divide II PPA to serving the Honeycrisp LLC ESA load or the NSP System prior to the data center going into service, with the remaining 25 percent of the costs and energy allocated to the Renewable*Connect program. Each month, our commercial accounting department will determine the level of production of the Heartland Divide II facility and allocate 25 percent to Renewable*Connect. The North Dakota portion of the remaining 75 percent will be recovered through the FCR. This accounting will be presented in the Company's FCR filings, similar to the Company's current practice for the Odell Wind Project.

C. Project Selection Process

Q. HOW DID THE COMPANY SELECT THE HEARTLAND DIVIDE II PROJECT?

A. The Company and Seller agreed upon the Heartland Divide II PPA after a targeted solicitation and contract negotiation process that was initiated by the Company in 2019 to meet our obligations under the Honeycrisp LLC ESA.

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[4] *N. States Power Co. Elec. Rate Increase Application*, Case No. PU-07-776, ORDER ADOPTING SETTLEMENT AGREEMENT at 6 of attached Settlement Agreement (Dec. 31, 2008).

We encountered significant challenges in obtaining a final PPA, in part due to the state of the MISO generator interconnection queue and Definitive Planning Process (DPP) studies. MISO completes DPP Studies in order to identify interconnection upgrades required for a project to interconnect, along with the estimated costs.

Q. PLEASE ELABORATE ON THESE MISO INTERCONNECTION ISSUES.

A. As the Company has discussed in other proceedings before the Commission, MISO's generator interconnection queue study process continues to be oversubscribed, behind schedule, and – in particular with respect to study coordination required by the seam with Southwest Power Pool (SPP) – studies often are not completed on time. Further, when studies are completed, new wind generation resources are often assigned high transmission upgrade costs and, as a result, they may withdraw from the queue entirely.

Q. HOW DID THE COMPANY MITIGATE THESE INTERCONNECTION ISSUES IN ITS WIND SOLICITATION?

A. The Company conducted a targeted solicitation of resource options available in MISO Local Resource Zones 1 and 3 that had – or that we thought could soon have – transmission interconnection cost certainty. We identified two projects that we believed could meet these requirements, and of those, Heartland Divide Wind – located in central Iowa, which is in MISO Zone 3 – provided a bid and engaged in negotiations with the Company for a PPA. The result of these negotiations is the PPA presented to the Commission in the Company's Application.

Q. HOW DID TRANSMISSION INTERCONNECTION COST CERTAINTY PLAY INTO THE COMPANY'S SELECTION OF HEARTLAND DIVIDE II?

A. Transmission cost certainty, along with price, was a major driver of our selection of Heartland Divide II. As projects continue to withdraw from the interconnection queue, we continue to anticipate challenges in our ability to procure greenfield projects in the near term, particularly in the timeframe required for us to fulfill our specific customer program needs. There are two key reasons for this: 1) DPP studies are routinely delayed, and 2) projects are often assigned such high interconnection upgrade costs that they are unable to execute and deliver on PPAs with renewable energy buyers, like the Company.

In our 2019 solicitation, negotiations with several potential sellers were unsuccessful or projects withdrew due to an inability to obtain interconnection rights without a significant increase to the PPA price. As a result of these transmission cost issues, the purchase of 200 MW of new wind generation from Heartland Divide Wind II likely represents one of the last opportunities for incremental wind generation we can pursue in the near future to meet our obligations under the Honeycrisp LLC ESA.

Q. WILL THE COMPANY'S ACQUISITION OF THE PROJECT BENEFIT NORTH DAKOTA CUSTOMERS?

A. Yes. As discussed further in Company witness Ms. Farah Mandich's Direct Testimony, the Company estimates the savings to customers from adding

Heartland Divide II as a system resource to be $97.4 million on a present value of revenue requirement (PVRR) basis over the 25-year term of the PPA, when compared with the expansion plan in our most recently-filed Integrated Resource Plan (IRP) Supplement (Case No. PU-19-220). Because the Heartland Divide II PPA pricing displaces higher cost energy in the near term, and is below our system average cost of fuel in the long term, the Project will provide savings to consumers even if the data center load does not match our growth estimates.

D. Terms of the Heartland Divide II PPA

Q. PLEASE DESCRIBE THE TERMS OF THE HEARTLAND DIVIDE II PPA

A. Under the Heartland Divide II PPA, the Company agrees to purchase energy from the Project, which is estimated to be approximately **[TRADE SECRET BEGINS . . . . . . TRADE SECRET ENDS]** at a price **[TRADE SECRET BEGINS . . . . . . TRADE SECRET ENDS]**.

Q. AT THIS CONTRACT PRICE, WHAT IS THE LEVELIZED COST OF ENERGY OVER THE LIFE OF THE PPA?

A. At the agreed upon price of energy, the levelized cost of energy over the 25-year term of the Heartland Divide II PPA is **[TRADE SECRET BEGINS . . . . . . TRADE SECRET ENDS]**.

Q. IS THIS A REASONABLE PRICE FOR A GREENFIELD WIND FACILITY?

A. Yes. As noted above, Heartland Divide II was the only project at the end of our wind solicitation process that had interconnection and transmission cost certainty—other projects were forced to drop out due to high study or upgrade costs. Given the considerable uncertainty associated with greenfield wind projects in MISO, the Heartland Divide II PPA provides a competitive price point.

Q. IS THE HEARTLAND DIVIDE II PPA LEAST COST?

A. Yes. The Heartland Divide II PPA will benefit North Dakota customers because the Company will purchase power under the PPA at a low price, displacing higher cost energy on our system in the near term. In the longer term, the PPA's prices are below our forecasted system average costs, thereby lowering average fuel and purchased power costs on the Company's system.

Q. WHAT IS THE ANTICIPATED COMMERCIAL OPERATION DATE (COD) FOR HEARTLAND DIVIDE II?

A. The current target COD is December 31, 2021. The Company is not obligated to accept a COD prior to **[TRADE SECRET BEGINS . . .**

. . . TRADE SECRET ENDS]. If the Seller fails to achieve the target COD, they are required to pay the Company Liquidated Delay Damages of **[TRADE SECRET BEGINS . . . . . . TRADE SECRET ENDS]** per day in lieu of actual damages.

Q. PLEASE DESCRIBE ANY CURTAILMENT PROVISIONS IN THE PPA.

A. The Company will be the Market Participant for this Project. We will schedule the Project into MISO and initiate – or respond to – MISO direction for curtailments. The PPA has no compensable curtailment provisions and neither Seller nor Company may curtail the Project for economic reasons. Seller may incur penalties if curtailments are caused by Seller's failure to perform, under parameters outlined in the PPA and First Amendment to the PPA.

Q. WILL THE COMPANY BE ASSIGNED THE RECS ASSOCIATED WITH THE HEARTLAND DIVIDE II PROJECT?

A. Yes. Although priced as an energy contract, the Company will be assigned all energy, capacity, and RECs associated with the Project.

Q. HOW WILL THE COMPANY DISTRIBUTE THE RECS GENERATED BY THE PROJECT?

A. As I discussed earlier, the Company will retire a share of the RECs associated with the Project in an amount coincident with the data center load. For this reason, the Company will not allocate the RECs generated by the Project to specific jurisdictions.

Q. HOW WILL THE COMPANY TREAT RECS GENERATED BY THE PROJECT BEFORE THE DATA CENTER LOAD MATERIALIZES?

A. In the Honeycrisp LLC ESA, the Company negotiated the flexibility to procure renewable resources early in the term that will allow the Company to "bank" the RECs and retire them later in the term of the Honeycrisp LLC ESA.

Q. WILL NORTH DAKOTA CUSTOMERS BE COMPENSATED FOR THEIR SHARE OF THE RECS ?

A. No. Although we are proposing Heartland Divide II as a system resource, we are proposing that it serve the system with energy only and we will not allocate RECs to specific jurisdictions. Like Dakota Range III, this resource is being procured to meet our obligations under the Honeycrisp LLC ESA, as an inducement for Honeycrisp to locate a data center campus in the Company's exclusive service territory. It is not being procured to serve North Dakota or any particular jurisdiction, but rather so that the Company may meet its obligations under the Honeycrisp LLC ESA. Thus the RECs are dedicated to the specific purpose agreed to in the Honeycrisp LLC ESA. However, North Dakota customers will still receive benefits even without receiving RECs because the Heartland Divide II PPA will lower the Company's overall costs and the data center load will result in more system costs being shifted to Minnesota under the demand and energy allocators.

Q. THE COMMISSION IMPOSED A CONDITION REQUIRING THE COMPANY TO COMPENSATE NORTH DAKOTA CUSTOMERS FOR THEIR SHARE OF THE DAKOTA RANGE III RECS. DOES THE COMPANY SUPPORT A SIMILAR CONDITION HERE?

A. No. As stated by Company witness Ms. Bria Shea in her Rebuttal Testimony in Case No. PU-18-430, the Company respectfully disagrees with this condition because it is inconsistent with the purpose of acquiring Heartland Divide II. The Company would not be acquiring 150 MW from Heartland Divide II if not for the Honeycrisp LLC ESA, and the RECs are dedicated to the specific purpose of meeting our obligations under the ESA.

Q. WHAT WILL HAPPEN TO THE RECS IF THE DATA CENTER LOAD DOES NOT COME ONLINE OR IS OTHERWISE SMALLER THAN EXPECTED?

A. If the data center load does not materialize as projected and the Company's obligations under the Honeycrisp LLC ESA are terminated, the Company will allocate the Heartland Divide II RECs to all NSP System customers consistent with traditional cost causation principles. Specifically, pursuant to Commission Orders in Case Nos. PU-10-19 and PU-12-813, the Company will return 100% of the net revenue from the sale of North Dakota customers' share of the RECs, and pass those revenues back to customers through the FCR.

Q. HOW WILL THE COMPANY COMPLY WITH THE HONEYCRISP LLC ESA IF THE DATA CENTER LOAD IS LARGER THAN EXPECTED?

A. If the data center load is greater than the resources procured to provide RECs for it (Dakota Range III and Heartland Divide II), the Company plans to use RECs already in the Company's possession to satisfy its commitments in the Honeycrisp LLC ESA, while it procures additional resources to meet its obligations. Thus there would be no incremental costs to customers for these "Cover RECs." If the Company were forced to purchase additional RECs to meet its obligations, these costs should be borne by the entire NSP system, because the data center load is system load that benefits all NSP customers.

Q. DOES THE COMPANY SUPPORT A CONDITION ON APPROVAL—SIMILAR TO WHAT WAS APPROVED IN CASE NO. PU-18-430—REQUIRING THE COMPANY TO HOLD NORTH DAKOTA CUSTOMERS HARMLESS FOR THE COSTS OF ANY "COVER RECS" THAT MAY BE NEEDED?

A. No. As Company witness Ms. Shea stated in her Rebuttal Testimony in Case No. PU-18-430 (Dakota Range III), the Company does not agree with imposing such a condition because the data center load benefits all NSP System customers, thus all customers should pay their share of the costs of bringing the load online. Ultimately, as I just discussed, this condition is unnecessary because the cost of any "Cover RECs" is likely to be zero.

IV. PRUDENCE OF THE HEARTLAND DIVIDE II PPA

Q. IS THE PROPOSED HEARTLAND DIVIDE II PPA PRUDENT?

A. Yes. The Commission has historically stated that its primary considerations in assessing the prudence of resource additions are that they be needed and least cost. With respect to need, Heartland Divide II is necessary for facilitating the addition of the data center load to the NSP System, which itself should provide significant benefits to the Company's customers. The Heartland Divide II PPA is also a least-cost resource, as the attractive price of energy under the PPA will lower the Company's overall system costs, benefitting customers. Additionally, the Heartland Divide II project was the only viable project identified in our solicitation that was available and had transmission interconnection cost certainty.

Q. HOW DO THE DEMAND AND ENERGY ALLOCATOR SHIFTS RESULTING FROM THE ADDITION OF THE DATA CENTER LOAD BENEFIT NORTH DAKOTA CUSTOMERS?

A. Because the data center load will be based in Minnesota, North Dakota customers will benefit from the impact that increasing Minnesota load has on the allocation of NSP System costs. The addition of this large load will result in shifts in the percentages of system costs paid for by North Dakota under the 12-month coincident peak (12CP) demand allocator and the energy allocator. Notably, even if the data center does not go into service and the demand and energy allocator benefits do not materialize, the Heartland Divide II PPA is still prudent in light of the low cost energy it is providing to the system, thereby generating savings for all NSP customers.

Q. IF THE COMMISSION DECLINED TO MAKE A DETERMINATION OF PRUDENCE WITH RESPECT TO THE HEARTLAND DIVIDE II PPA, WOULD NORTH DAKOTA CUSTOMERS STILL BENEFIT FROM THE SHIFT IN DEMAND AND ENERGY ALLOCATION?

A. Yes, however, the Company believes it would be inequitable for our North Dakota customers to enjoy the benefits of the increased load associated with the data center through the demand and energy allocators if North Dakota customers are not also paying the resource costs needed to support it.

Q. IF THE DATA CENTER DOES NOT USE THE ENTIRETY OF HEARTLAND DIVIDE II'S WIND GENERATION, WOULD CUSTOMERS STILL BENEFIT FROM THE PPA?

A. Yes. Notwithstanding the need for Heartland Divide II's wind generation to support the data center, the Company's economic analysis of the PPA, discussed in detail in Ms. Mandich's Direct Testimony, shows that the addition of the resource will lower the Company's overall system costs, supporting the cost-effectiveness of the resource addition. The economical pricing of the wind alone supports it as a prudent resource addition.

Q. ASIDE FROM THE COST-EFFECTIVENESS AND NEED FOR THE HEARTLAND DIVIDE II PPA, ARE THERE OTHER INDICATIONS THAT THE COMPANY'S PROPOSED RESOURCE ADDITION IS PRUDENT?

A. Yes. Aside from the cost-effectiveness and need for the transaction, the PPA is structured to protect the interests of customers through several safeguards, including specific milestone dates (and penalties for failing to meet these dates), default provisions, security fund requirements, and insurance requirements.

V. PRESENTATION OF WITNESSES

Q. WHO ARE THE WITNESSES FOR THE COMPANY IN THIS PROCEEDING?

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

- Ms. Farah Mandich details the Company's economic analyses and the expected cost savings the Company expects to achieve by adding the Heartland Divide II PPA.

VI. CONCLUSION

Q. PLEASE SUMMARIZE YOUR CONCLUSIONS.

A. For the reasons stated above, the Company's addition of the Heartland Divide II PPA is prudent and should be approved without conditions.

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

A. Yes, it does.

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF NORTH DAKOTA

NORTHERN STATES POWER COMPANY ADVANCE DETERMINATION OF PRUDENCE – HEARTLAND DIVIDE WIND II	CASE NO. PU-20-__

VERIFICATION

STATE OF MINNESOTA)
)SS.
COUNTY OF HENNEPIN

Christopher J. Shaw, being first duly sworn on oath, deposes and says that he is the Manager of Regulatory Policy for Applicant Northern States Power Company, a Minnesota corporation, in the above-captioned matter, that the testimony submitted in the above-captioned matter under his name was prepared under his direction, that he knows the contents thereof, and that the same is true and correct to the best of his knowledge and belief.

Christopher J. Shaw

Subscribed and sworn to before me on this 20 day of October, 2020

Steven D. Spiess

Notary Public
My Commission expires: January 31, 2025

STEVEN DELMONT SPIESS
NOTARY PUBLIC
MINNESOTA
My Commission Expires Jan. 31, 2025

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EXPERIENCE

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

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

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