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January 11, 2019

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VIA ELECTRONIC FILING

Steve Kahl
Interim Executive Secretary
North Dakota Public Service Commission, Dept. 0408
600 East Boulevard
Bismarck, North Dakota 58505-0480

**Re: NORTHERN STATES POWER COMPANY
ADVANCE PRUDENCE - 151.2 MW DAKOTA RANGE III WIND FACILITY
Case No. PU-18-430**

Dear Mr. Kahl:

Northern States Power Company, doing business as Xcel Energy, submits this courtesy copy of the Company's Petition for Approval of Contracts for Provision of Electric Service to Google's Minnesota Data Center Project, filed on January 10, 2019, with the Minnesota Public Utilities Commission. This courtesy copy is submitted to the North Dakota Public Service Commission consistent with the Company's commitment to supplement this proceeding with the Petition once filed, made in our December 27, 2018, *Application for Advance Determination of Prudence* filed in Case No. PU-18-430.

Please feel free to contact me at (612) 977-8865 or zsimpser@briggs.com or David Sederquist at (701) 241-8632 or dave.sederquist@xcelenergy.com if you have any questions,

Sincerely,

BRIGGS AND MORGAN, P.A.

/s/ Zeviel T. Simpser

Zeviel T. Simpser

Enclosure

cc: Via Email
Illona A. Jeffcoat-Sacco
Victor Schock
Patrick J. Fahn
Jerry Lein
Jack Schuh

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
Katie J. Sieben	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF CONTRACTS FOR
PROVISION OF ELECTRIC SERVICE TO
GOOGLE'S MINNESOTA DATA CENTER
PROJECT

DOCKET No. E002/M-19-___

PETITION

Northern States Power Company, doing business as Xcel Energy (Xcel Energy or the Company), is pleased to announce that it has entered into several agreements that will enable it to provide electric service to a proposed new data center to be owned and operated by a subsidiary of Google LLC (Google) in Becker, Minnesota. If the project moves forward, the project would generate at least \$600 million in capital investment. In addition to the large capital investment, one of the most compelling aspects of this project is that it will be located on property adjacent to the Company's Sherco coal plants. And by locating there, this project will assist the Company's efforts – in partnership with local, regional, and state-wide stakeholders – to mindfully transition a coal-plant environment into a less carbon-intensive, business-oriented area that creates new jobs, results in significant private capital investment in the state, and benefits all of the Company's customers. The Company respectfully requests the Minnesota Public Utilities Commission (Commission) approve the proposed agreements and other rates, terms, and tariff revisions described in this Petition. To enable this project to move forward, time is of the essence, and thus we respectfully ask the Commission to make a decision on this Petition before the end of the second quarter of this year.

INTRODUCTION

In October 2015, the Company announced its intention to close Sherco Units 1 and 2 – two of the Company's remaining four coal plants. The Company was aware of the potential impacts that its decision would have on the City of Becker, Sherburne County, and our employees. As a result, the Company made the following

commitments to our employees and these host communities. For our employees, we committed to an orderly transition that would include job retraining and other assistance to minimize employee impacts. With respect to the Becker community, we committed to exploring ways to use our existing infrastructure to bring new commercial and development opportunities to the area.

Examples of our role in helping with these redevelopment efforts include the following. First, we have been working closely with Liberty Paper, one of our largest customers, on assuring that we continue to provide them with adequate steam resources upon the retirement of Sherco Units 1 and 2. By doing so, we are helping Liberty Paper remain a mainstay in the City of Becker and Sherburne County communities. Secondly, we helped our existing customer Northern Metals Recycling relocate its operations from north Minneapolis to a parcel of land near the Sherco plant. Northern Metals is under construction now and when it opens its facility in 2019, it will bring 85 jobs to the area, with the potential to hire 140 workers.

We also have been working in partnership with the host communities, regional and state business organizations, and state agencies – particularly the Minnesota Department of Employment and Economic Development (DEED) – to certify parcels of land on the Sherco plant site for economic development and have been actively marketing those parcels for economic development opportunities, including to businesses outside of Minnesota. After a year and a half of due diligence and contract negotiations, Google’s data center campus stands to be the Company’s first out-of-state company to the site and the state’s first major data center.

If the project moves forward, it would generate at least \$600 million in capital investment, making it one of the largest private development projects in state history. The local and state-wide benefits are significant. Based on economic studies evaluating the benefits of similar data center campuses, DEED projects that the initial construction will create nearly 2,000 jobs in Sherburne County and 1,300 additional state-wide jobs, and approximately 50 new permanent jobs in the technology industry with an aggregate payroll expected to exceed \$4 million/year.¹ DEED further projects an almost \$150 million increase in state gross domestic product (GDP).²

As explained further below, nationally in 2016, Google data centers generated \$1.3 billion in economic activity, \$750 million in labor income, and approximately 11,000

¹ MINN. DEPARTMENT OF EMPLOYMENT AND ECONOMIC DEVELOPMENT, IMPLAN ECONOMIC IMPACT ANALYSIS 5 (Oct. 2018) (attached to this Petition as Attachment C and referred to hereinafter as such).

² Attachment C at 7.

new jobs.³ Overall, Google has invested approximately \$10.5 billion in its U.S. data centers, creating approximately 1,900 permanent, full-time employees in Google's six data centers currently in operation. Because these centers undergo regular expansion and upgrades, the data centers continually employ a significant number of full-time construction workers across the six current campuses each year.

Google's data centers also stimulate job growth in a number of unrelated industries, including trade, transport, utilities, professional and business services, and leisure and hospitality. Within three years of their Google data centers opening, Douglas County, Georgia gained 5,595 jobs; Berkeley County, South Carolina gained 2,378; and Pottawattamie County, Iowa gained 1,185 jobs.⁴

In addition to these local, regional, and state benefits, the Company is pleased that the contractual arrangements it presents here are consistent with and further our three strategic priorities: Leading the Clean Energy Transition, Keeping Bills Low, and Enhancing the Customer Experience, and, as such, benefit all of our customers.

Leading the Clean Energy Transition

Xcel Energy is a nation-leading renewable energy provider. In fact, the NSP System will have a generation mix comprised of over 46 percent renewables by 2022. Xcel Energy also recently announced a nation-leading goal to deliver 100 percent carbon-free electricity to customers by 2050. As part of this goal, the Company also announced plans to reduce carbon emissions 80 percent by 2030, from 2005 levels in the eight states it serves. At the same time, Xcel Energy has kept and will continue to keep affordability as a guiding principle.

Google is also a pioneer and leader in accelerating the adoption of renewable energy. Since 2007, Google has been carbon neutral; renewable energy has been a significant component of that. Google has procured more than 3 gigawatts of wind and solar power in order to match its total annual electricity consumption, making it the largest corporate purchaser of renewable energy in the world. In 2017, Google reached the important milestone of matching 100 percent of its global electricity consumption with renewable energy. Google is striving to maintain its 100 percent renewable energy match and to go even further, by sourcing carbon-free energy for its operations on a 24/7 basis.

³ OXFORD ECONOMICS, GOOGLE DATA CENTERS ECONOMIC IMPACT AND COMMUNITY BENEFIT 4 (Apr. 2018) (attached to this Petition as Attachment A and referred to hereinafter as such).

⁴ Attachment A at 19.

Under the terms of the contracts that will serve the proposed Becker data center, the Company has agreed to procure new, incremental renewable energy resources that will be used to match the data center's annual energy usage. To incentivize Google to grow the data center campus to as much as **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** megawatts (MW), the Company has agreed to match the data center's peak load with incremental, new, carbon-free capacity upon reaching that milestone.

Through separate petitions, the Company intends to ask the Commission to approve up to 300 MW of power purchase agreements (PPAs) for new wind projects that will be incremental to the NSP System. We are confident we can demonstrate that the PPAs – each of which are eligible for the maximum amount of the production tax credit (PTC) – are in the public interest. For purposes of this Petition, we ask the Commission to approve our sourcing plan as contemplated in the Retail Electric Service Agreement (ESA). Under a likely load growth scenario (i.e., **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** percent load factor) for the initial 10-year term, our analysis demonstrates that our plan provides customer benefits between **[TRADE SECRET BEGINS TRADE SECRET ENDS]** and is therefore reasonable and prudent.

Keeping Bills Low

The Company appreciates the importance of assuring that the essential service we provide remains affordable to all customers. We are pleased that average customer bills have remained essentially flat since 2013. While there are many factors that go into our customers' bills – some in our control and others not – the Company continually looks for opportunities that place downward pressure on them. The Company advanced a significant wind build-out on the NSP System as part of its Steel for Fuel strategy. Additionally, the Company bought out several biomass contracts. Together these efforts will provide over \$1 billion in customer cost savings. We continue to explore new opportunities to lower costs for our customers and look forward to bringing those to the Commission as they arise.

In addition to lowering costs and expenses, increasing revenues can help keep bills low. And by attracting new customer load to our service territory, Xcel Energy's economic development efforts help find new revenue. All of our customers can benefit from stimulating sales and load growth as this creates an opportunity to meet

our revenue requirements without raising rates. This is especially true in an environment like the one in our Minnesota service territory where we continue to see downward energy use by our customers and generally flat sales.

Google's Becker data center presents an opportunity to add new load as a way to help keep bills low. The Company and Google have negotiated a rate for an initial ten-year term which is necessary to attract Google to our service territory and, at the same time, benefit all customers. As we show in this Petition, the contracts presented here satisfy the regulatory incremental cost test, which is the applicable benchmark for a revised rate offering (i.e., non-standard). This is important because it confirms that the incremental costs incurred to serve Google's Becker data center are more than offset by the incremental revenues. This includes, for example, the 300 MW of wind PPAs the Company intends to procure on behalf of the data center. By meeting this incremental cost test, the Company demonstrates that customers will not be harmed.

Further, our analysis indicates that Google will provide revenues exceeding the incremental cost test thereby providing positive benefits to customers. Assuming Google's Becker data center achieves **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW, all customers can expect to benefit by **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]**; or if the data center achieves **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW (an achievable outcome in the first 10-year term), all customers can expect to benefit by **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]**. This is additional revenue that the Company will not need to seek through a rate increase.

At a high level, it is for this reason, as well as the more detailed explanation provided in this Petition, that the Company asks the Commission to approve the negotiated rate and the attendant ratemaking treatment that will keep the Company whole.

Enhancing the Customer Experience

A longstanding Company hallmark is to provide safe, reliable, and affordable service to our customers. Because we have consistently delivered on our service obligations, our customers have come to trust us as a partner for addressing their energy-related needs. A building block of that trust has been our first-in-class storm response which contributed to Xcel Energy customers having power 99 percent of the time in 2017, putting our reliability among the top one-third of U.S. utilities. Another building

block has been the Company's energy efficiency programs. Not only have these programs helped our customers save money but they have also helped avoid 13 power plants since 1992, and saved enough energy to power 84,000 homes in 2017.

And while we are proud of our successes thus far, we are aware that our customers' expectations are changing. Customers continue to expect safety, reliability, and affordability, but they also expect us to provide more choices, solve more energy-related problems, and do so more quickly. Products like our Renewable*Connect and rate offerings such as our residential time-of-use pilot and the suite of EV pilots are meeting, in part, these new customer expectations.

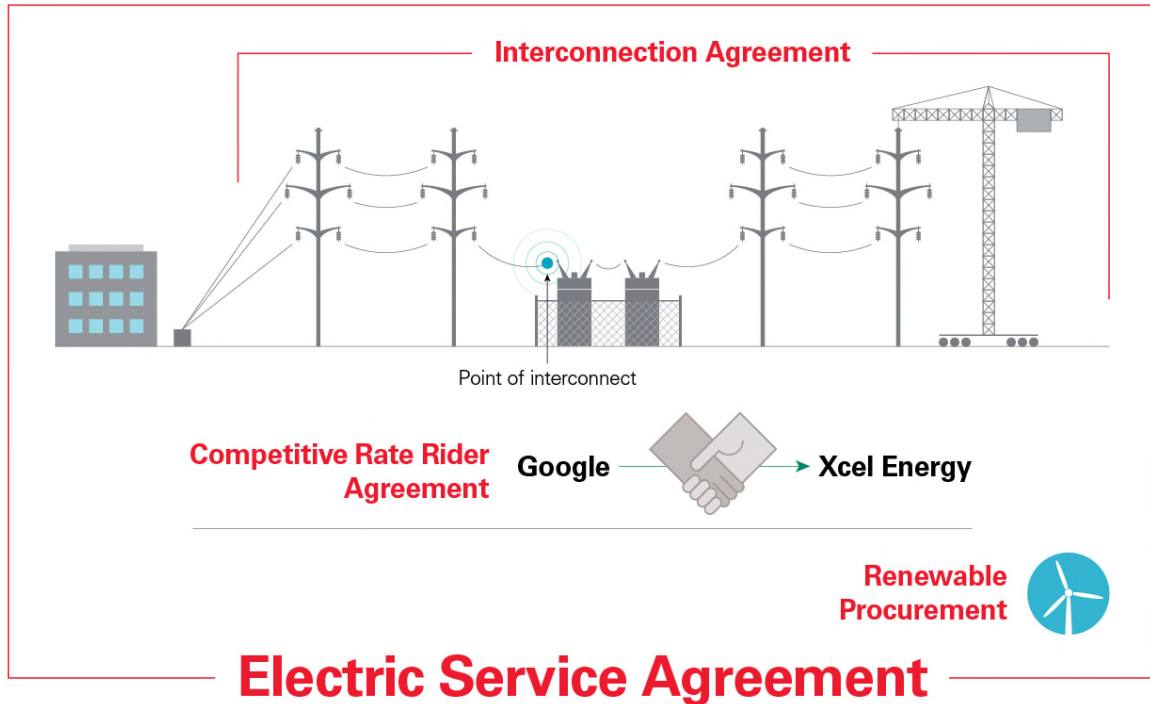
When we began discussions with Google about its Becker data center, its expectations were influenced by the national and international market conditions in which it participates. Given its worldwide reach and the length and scale of investment in a data center campus, the competition in securing new data center load and investment is, as the Commission is aware, substantial. And while reliability and power quality are critical to its choice to locate a new data center, they are, for the most part, considerations that almost any utility in the country can provide. Important considerations to attract data center investments include a utility's ability to be flexible and creative in providing renewable energy options and, of course, a utility's ability to provide reasonable pricing over a defined term. As demonstrated below, we have negotiated a contractual arrangement that provides Google with the necessary incentives to locate its campus in our service territory but at the same time preserves the important traditional regulatory principle that Google pay its fair share of the utility's costs and does not increase costs for other ratepayers.

The Company asks that the Commission approve three separate contracts it has signed with Google affiliates. First is the ESA, which acts as the foundation between the parties and provides the key parameters under which the Company will provide service to the Becker data center. The ESA provides, among other things, when and under what circumstances the facility will reach commercial operation; terms and conditions for sourcing renewable energy and capacity resources; annual minimum payments to protect the Company's investments; termination charges in the event of an early termination by Google; considerations for extending the initial ten-year term; and regulatory approval conditions.

The second agreement is the Competitive Rate Response Rider (CRR) Agreement (CRR Agreement), which outlines the rate which the parties negotiated and its related parts. The final agreement is the Interconnection Agreement for Retail Electric Service at Transmission Voltage (IA), which provides the terms and conditions for Google to safely interconnect its data center to the Company's distribution system,

which for purposes of this service will be operated at transmission level voltages. These three agreements are depicted in Figure 1, below.

Figure 1
Becker Data Center Agreements



We describe each of these contracts, including how they work and their key provisions, in Section II of this Petition. We also demonstrate how each of these contracts satisfies the applicable regulatory test(s). For convenience, we summarize the actions we respectfully request the Commission to take:

- Approve the ESA;
- Approve the renewable sourcing plan;
- Approve cost recovery through the relevant ratemaking mechanism of the costs and expenses associated with obtaining the renewable energy required by the renewable sourcing plan throughout the term of the ESA;
- Approve the CRR Agreement;
- Approve the requested ratemaking treatment for the difference between the negotiated rate under the ESA and CRR Agreement and the standard rate;
- Approve amendments to the CRR Tariff;
- Approve the IA; and

PUBLIC DOCUMENT—NOT PUBLIC DATA HAS BEEN EXCISED

- Approve the requested ratemaking treatment of Xcel Energy’s costs associated with the facilities used to provide electric service to the Becker data center at transmission voltage.

As time is of the essence to move this project forward, the Company respectfully requests these approvals prior to the end of the second quarter of this year. The balance of the petition is organized as follows:

- Section I, *Project Overview and Benefits*, provides an overview of the Company’s economic development efforts, Google and its data centers, the proposed data center, and the benefits of hosting the proposed data center.
- Section II, *Transaction Overview*, provides detailed descriptions of the terms and conditions of the ESA, CRR Agreement, and IA.
- Section III, *Approvals for the Data Center Project*, addresses the applicable statutory criteria necessary for regulatory approval; the Company’s proposed ratemaking treatment for the same; and miscellaneous but necessary tariff changes to accommodate Google’s Becker data center.

Because a determination of Xcel Energy’s general revenue requirement is unnecessary for the approvals requested in this Petition, this Petition is being filed as a “miscellaneous” filing under Minn. R. 7829.1300. The information required under that rule is provided in Attachment B. Other attachments include:

- Attachment A: Oxford Economics, Google Data Centers Economic Impact and Community Benefit (Apr. 2018)
- Attachment B: Miscellaneous Filing Requirements
- Attachment C: Minnesota Department of Employment and Economic Development, IMPLAN Economic Impact Analysis (Oct. 2018)
- Attachment D: Retail Electric Service Agreement and Amendment
- Attachment E: Incremental Cost Analysis
- Attachment F: Renewable Sourcing Plan Modeling
- Attachment G: Competitive Rate Rider Agreement and Amendment
- Attachment H: Proposed CRR Tariff amendments (clean and redlined)
- Attachment I: Google’s Letter regarding being subject to Effective Competition
- Attachment J: Interconnection Agreement for Retail Electric Service at Transmission Voltage

I. PROJECT OVERVIEW AND BENEFITS

A. Development of the Google Data Center Project

After announcing the retirement of Sherco Units 1 and 2 in October 2015, the Company, working with the City of Becker and Sherburne County, set out to help find new area capital investment including, for purposes of this Petition, Google's proposed data center.

A first step in that process was for the Company to identify sites within the Sherco footprint that could be used for new development opportunities. We had identified two properties, a 348-acre site and a 315-acre site, shown in Figure 2 below. As the Sherco plant transitions away from coal, Xcel Energy determined that the land was no longer needed as a buffer and could be used for regional economic development opportunities.

Figure 2
Sherco Economic Development Sites

[TRADE SECRET BEGINS

TRADE SECRET ENDS]

As a next step in the process, Xcel Energy worked to get the sites ready for potential buyers and/or economic development opportunities. The Company's site certification process collects information on more than 120 data points, including information on the site's electrical and communication capabilities, zoning, access to rail, title and survey work, environmental assessment, flooding and wetlands issues, archeological and historic site assessments, soil, and geo-tech analysis, etc.

Following completion of the site certification process, Xcel Energy began marketing the sites to consultants and commercial brokers. As part of this effort, Xcel Energy contacted a representative for Google to discuss Google's data center criteria and its possible interest in the Sherco site (subsequent meetings followed with representatives from Becker and DEED). Xcel Energy then presented Google with a comprehensive proposal on the two sites. After extensive discussion, the parties signed an agreement in April 2017 which provided Google with an exclusive option to purchase the 315-acre site.⁵

⁵ *In the Matter of the Petition of N. States Power Co. for Approval to Sell 365 Acres of Sherco Land*, Docket No. E002/M-17-528, ORDER (Feb. 6, 2018) (approving the sale of 315.2 acres to Google affiliate Jet Stream, LLC and crediting proceeds therefrom to ratepayers).

Figure 3
Map of Becker Data Center Site

[TRADE SECRET BEGINS

TRADE SECRET ENDS]

Since that time, the parties have engaged in due diligence review and negotiations regarding the possibility of Google building a data center on the site. As part of its further evaluation of the site and with the Company's assistance, Google has also interacted with representatives from the City of Becker, Sherburne County, the Department of Natural Resources, the Pollution Control Agency, and DEED.

B. Google, Data Centers, and the Google Data Center Project

1. Google LLC

Google is a technology company providing products and services to organize the world's information and make it universally accessible and useful. Eight of Google's core products (Search, Android, Maps, Chrome, YouTube, Google Play, Gmail, and Drive) have more than 1 billion monthly active users.

The company offers a broad collection of cloud-based products and services, including G Suite business productivity apps like Docs, Drive, and Calendar and satellite mapping and analysis platforms like Google Earth and Google Earth Engine. In recent years, Google has expanded into consumer electronics with products including Google Pixel, Google Pixelbook, Google Home, and Chromecast.

Google's headquarters are in Mountain View, California, in the United States. The company owns and leases office and building space, research and development labs, and sales and support offices across more than 160 cities, primarily in North America, Europe, South America, and Asia, and owns and operates 15 data centers on four continents. Google is a wholly-owned subsidiary of Alphabet Inc., which also includes companies such as Access, Calico, CapitalG, GV, Verily, Waymo, and X. As of December 31, 2017, Google had more than \$110 billion in total revenues. As of June 30, 2018, Google and its affiliates reported approximately 89,000 full-time employees.

2. *Overview of Data Centers*

A data center is a centralized location where computing and networking equipment is concentrated for the purpose of collecting, storing, processing, distributing, or allowing access to large amounts of data. Data centers can store and index web sites, run e-mail and instant messaging services, provide cloud storage and applications, and enable a host of other capabilities.

To provide these services, data centers are equipped with a large number of computer servers that operate 24 hours per day, 7 days per week. Each server is a high-performance computer, with memory, storage space, a processor or processors and input/output capability, and often stacked in racks placed in rows within a large warehouse-sized building. To allow the servers to connect with the outside world and to communicate with each other, data centers are also equipped with networking and communication equipment. Data centers require that employees oversee and monitor servers and networking devices, and manage the facility's large power, cooling, and other needs.

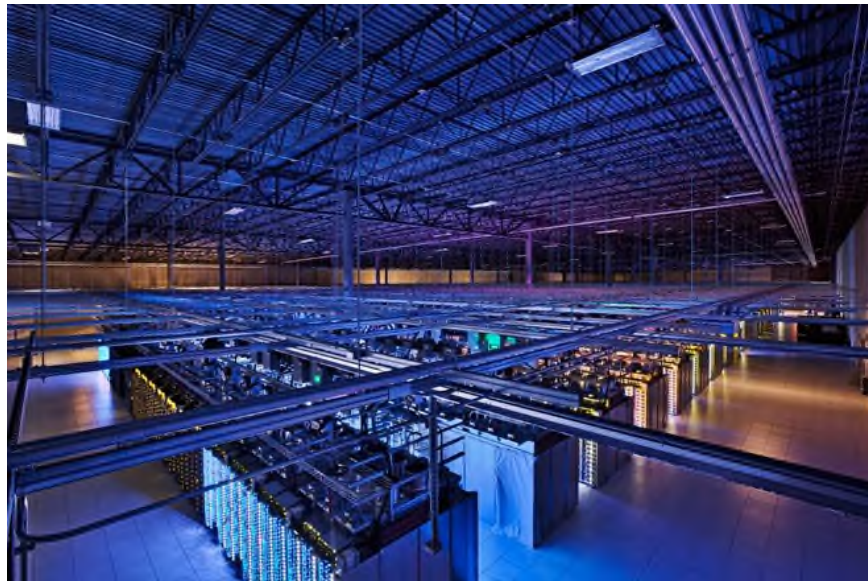
Figures 4 and 5 are photos from Google's Mayes County, Oklahoma and Council Bluffs, Iowa data centers, respectively. Figure 4 shows the rows of computer servers

and Figure 5 shows an overhead view of the server infrastructure and networking facilities that connect these servers to each other and to the outside world.

Figure 4
Photo of Google Data Center in Oklahoma



Figure 5⁶
Photo of Google Data Center in Council Bluffs, Iowa



⁶ Photo credit: Google/Connie Zhou.

Due to the constant demand for their services, Google data centers are required to operate constantly without interruption and require highly reliable electric power service. Google data centers also require cooling facilities to control the centers' temperature. Figure 6 shows the cooling facilities at Google's Douglas County, Georgia data center.

Figure 6⁷
A Central Cooling Plant in
Google's Douglas County, Georgia Data Center Campus



It is not uncommon for a Google data center to grow over time through the later addition of one or more facilities, particularly where the site has competitive electric service. Figure 7, below, is an aerial photo of Google's Council Bluffs, Iowa data center campus.

⁷ Photo credit: Google/Connie Zhou.

Figure 7
Aerial Photo⁸ of Google Data Center Campus in Council Bluffs, Iowa



3. *Google Data Center Project*

Subject to approval of this Petition, Google’s proposed Becker data center will initially involve the construction of a single facility that would generate a minimum investment of \$600 million, making it immediately one of the largest private investments in the state’s history. The site certainly has room for more than one facility, but expansion depends on many factors, including demand for Google’s services, electric service rates compared to other sites, economic development programs here versus other available states, the future cost of additional infrastructure improvements, etc.

C. Benefits of Hosting a Data Center Campus

1. *Economic and Societal Benefits of Data Centers Nationally and Locally*

Since 2006, Google has broken ground on at least nine U.S. data center campuses in nine states. Six data centers – located in South Carolina, Iowa, North Carolina, Oklahoma, Georgia, and Oregon – are fully constructed and operational. Three other data centers – in Tennessee, Virginia, and Alabama – are currently under construction.

Google data centers spur significant economic development within the states and communities where located, including the creation of permanent, professionally-oriented career employment. In April 2018, Oxford Economics prepared a report that analyzed the economic benefits of Google data centers throughout the United States.⁹ The report found that in 2016 alone, Google’s U.S. data centers generated

⁸ Photo credit: Google.

⁹ See Attachment A.

\$1.3 billion in economic activity, including \$750 million in new income from more than 11,000 new jobs. As of April 2018, Google has invested approximately \$10.5 billion in its six U.S. data centers as summarized in Table 1 below.¹⁰

Table 1
Google’s Investment in Existing Data Centers

Data Center	Year Opened	Total Investment
Wasco County, Oregon	2006	\$1.8B
Douglas County, Georgia	2006	\$1.2B
Caldwell County, North Carolina	2008	\$1.2B
Berkeley County, South Carolina	2008	\$1.8B
Pottawattamie County, Iowa	2008	\$2.5B
Mayer County, Oklahoma	2008	\$2.0B

Google’s investment in its data centers has created 1,900 new direct jobs – i.e., new Google data center employees and direct contractors – at its six currently-operational data centers, with an additional 1,100 FTE construction workers, on average, employed annually in expanding and upgrading the six existing campuses.¹¹

Due in part to the relatively high wages paid by Google at its data centers and the high contribution of economic activity associated with the Google supply chain, Google data centers also contribute significantly to the growth of jobs, income, and economic activity in each state where located. For instance, certain Google data centers, such as the one in Georgia, have a jobs multiplier of 4.6, a number that is higher than many other well-paying professional service industries commonly sought by states and cities for economic development efforts.¹² Table 2 summarizes Google’s jobs multiplier in each of its six states with centers in operation.

Table 2
State-Level Economic Impact Results¹³

State	GDP (Millions)	Income (Millions)	Jobs (Direct)	Jobs (Total)	Jobs Multiplier
Georgia	\$121	\$80	250	1,147	4.6
Iowa	\$189	\$111	400	1,743	4.4

¹⁰ Attachment A at 8-9.

¹¹ Attachment A at 8.

¹² Attachment A at 4, 11.

¹³ Attachment A at 15.

North Carolina	\$103	\$61	250	1,024	4.1
Oklahoma	\$203	\$99	400	1,598	4.0
Oregon	\$67	\$46	200	696	3.5
South Carolina	\$112	\$72	400	1,335	3.3

In addition to Google’s investment, another important benefit for many regions that host a data center is the ability for this type of investment to attract other, similar investment opportunities, particularly technology-based investment. History shows that once Google selects a site for a new data center, additional investment follows. For instance, after Google constructed its Caldwell County, North Carolina data center, other technology companies have constructed new facilities in the same area, which has now become known as the “North Carolina Data Center Corridor.” Likewise, Google’s investment in a data center campus in Council Bluffs, Iowa in 2008 acted as a progenitor to investments by Facebook, Microsoft, and Apple for their own data centers in that state. More recently, Google’s announcement to build a data center in north Alabama was followed by a similar announcement by Facebook to build in the same region.

Google data centers are also tied to employment gains and increases in the number of college-educated residents in communities. The Oxford report found that “for most of the counties hosting a Google data center, there was measurable improvement at the county level in overall employment or education.”¹⁴ With respect to the increase in overall employment, within three years of its data center opening, Douglas County, Georgia saw the addition of 5,595 jobs; Berkeley County, South Carolina saw the addition of 2,378 jobs; and Pottawattamie County, Iowa saw the addition of 1,185 jobs.¹⁵ These jobs span a number of industries, including trade, transport, and utilities, professional and business services, and leisure and hospitality.

And once settled, Google’s generous philanthropy works to help local businesses, schools, and nonprofits prosper. For example, since 2008, Google has awarded more than \$1.1 million in grants to Iowa schools and nonprofits for their work in science and technology education, carbon reduction, and in making the Internet more accessible to those less fortunate, to name a few.

2. *Regional and Statewide Benefits*

The data center’s proposed location on a portion of the Sherco site was an important consideration as the Company engaged in contract negotiations for service to

¹⁴ Attachment A at 18.

¹⁵ Attachment A at 19.

Google’s proposed new data center. As it transitions from coal to gas operations at Sherco, fewer employees will be needed to support the Company’s Sherco operations. Google’s initial investment of \$600 million in the area will provide new jobs in the growing technology industry and hopefully provide an anchor around which Xcel Energy, the City of Becker, and Sherburne County can attract additional investment.

To estimate the benefits of the Becker data center, DEED modeled direct and indirect impacts from the project’s construction and on-going operation. The DEED report, included as Attachment C, found the project will create significant benefits: more than 2,600 new jobs, increase income by more than \$140.9 million, and increase Sherburne County GDP by \$186 million.¹⁶ These Sherburne County economic benefits from construction are summarized in Table 3 below.

Table 3¹⁷
Economic Benefits to Sherburne County during Construction Phase
(in nominal 2019 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$140.0	\$115.2	1,931
Indirect Effect	\$16.1	\$10.7	227
Induced Effect	\$30.0	\$15.1	484
Total Effect	\$186.1	\$140.9	2,642

And like other Google data centers, the benefits will not be limited to Sherburne County but instead will create multiplier effects throughout the state, with DEED estimating the project to create a total of more than 3,260 jobs, increase state income by \$196 million, and increase state GDP by \$267.9 million.¹⁸ These state-wide economic benefits from construction are summarized in Table 4 below.

¹⁶ Attachment C at 5.

¹⁷ Attachment C at 5.

¹⁸ Attachment C at 7.

Table 4¹⁹
Economic Benefits to Minnesota during Construction Phase
(in nominal 2019 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$149.8	\$122.8	1,931
Indirect Effect	\$39.1	\$26.3	362
Induced Effect	\$79.1	\$47.2	972
Total Effect	\$267.9	\$196.3	3,265

Once operational, the Becker data center is expected to create job opportunities for a minimum of 50 persons to manage and operate the facility, with an aggregate payroll expected to exceed \$4 million per year, plus benefits.²⁰ These permanent jobs alone create positive ripple effects throughout the county, with DEED estimating the creation of an additional 110 jobs throughout the county with a resulting increase in area labor income of \$6.1 million.²¹ The economic benefits of the Becker data center will likewise flow through to the rest of the state.²²

Further, as has been experienced by other states, we anticipate that there will be a “follow the leader” effect from Google’s decision to construct its next data center in Minnesota. Minnesota, with its highly-educated workforce and favorable business climate, provides a desirable location for other high-tech industries and their vendors that are searching for new locations to expand their own operations. Moreover, the Sherco site, with its robust and reliable electric service, existing fiber optic network, and ample access to water will also serve as a draw for other technology and data center developments for the region.

Finally, as discussed in the Sherco land sale docket, sale of the Sherco property to Google for this construction of the Becker data center campus will result in a net gain of approximately \$6 million, all of which will be credited to our customers through the Company’s fuel clause adjustment (FCA).²³

¹⁹ Attachment C at 7.

²⁰ Attachment C at 12.

²¹ Attachment C at 10.

²² Once operational, DEED estimates the data center will help create more than 160 new jobs, increase wage income by \$10.5 million, and increase state GDP by \$14.4 million. Attachment C at 14, Table 4.

²³ *In the Matter of the Petition of N. States Power Co. for Approval to Sell 365 Acres of Sherco Land*, Docket No. E002/M-17-528, PETITION at 2 (June 30, 2017).

3. *Renewable Energy Sector Benefits*

Google's commitment to sourcing sufficient renewable energy resources for the NSP System to match its capacity and energy use requirements will also provide benefits to the regional renewable energy sector.

In 2017, Google became the first company of its size to purchase enough renewable energy to match the amount of electricity used by its operations around the world, including its existing data centers, which as the Commission knows has both economic and environmental benefits. For example, Google's long-term contract commitments to renewable energy have resulted in \$2.1 billion of investment in eight renewable energy generation projects (wind and solar), as of April 2018.²⁴

II. TRANSACTION OVERVIEW

The data center transaction is composed of several related parts: (1) electric service at a negotiated rate; (2) renewable energy sourcing; and (3) transmission voltage interconnection and construction. Each of these components was negotiated between the Company and Google at arm's length and represent more than a year of economic development work and negotiations.

As part of the transaction, the Company will provide electric service to Google's proposed Becker data center as a Time of Day (TOD) customer, but provide that service at a negotiated rate. This rate reflects Google's numerous competing options to site in other locations outside Xcel Energy's service territory. The Company has committed to provide electric service at a negotiated rate for up to **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW of data center load for an initial term of ten years. The ten-year term may be modified upon agreement of the Company and Google, subject to Commission approval, pursuant to the renegotiation provisions included in the ESA.

A key consideration in Google locating at the Sherco site is the Company's ability to provide the data center with 100 percent renewable energy. To meet both the Company's and Google's renewable energy objectives, the Company has agreed to procure renewable energy resources and retire the associated renewable energy credits (RECs) to match the data center's electric consumption. **[TRADE SECRET BEGINS]**

²⁴ Attachment A at 5.

TRADE SECRET ENDS].

Additionally, as part of the negotiations, Google also requires that its load be served with carbon-free capacity resources. The data center transaction therefore provides terms under which the Company will procure clean capacity for the NSP System to match the data center's load. The parties agreed that the Company would only be required to obtain capacity from carbon-free resources if and when the data center achieves a peak load of **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW. The Company's clean capacity plan is subject to additional Commission approval so that no capacity additions can be made under the ESA without additional regulatory oversight.

Last, the proposed Becker data center will be one of only nine Xcel Energy customers interconnected at transmission voltage. The Company has agreed to construct the additional transmission voltage infrastructure to accommodate service at the data center. This infrastructure will be constructed in stages as load grows.

To accommodate service at the Becker data center site, the Company and Google (by and through its affiliate Honeycrisp Power LLC (Honeycrisp)) have entered into three separate, but interrelated, contracts:

- **Retail Electric Service Agreement (ESA)** – the ESA provides for the provision of electric service, the term of the project, the sourcing requirements, and customer protections;
- **Competitive Rate Rider Agreement (CRR Agreement)** – the CRR Agreement provides for the competitive rate; and
- **The Interconnection Agreement for Retail Electric Service at Transmission Voltage (IA)** – the IA provides for the interconnection of the data center at transmission voltage.

The Company structured the proposed transaction through three separate agreements to best administer the project over its life as well as to best allocate risk amongst the parties. The following provides an overview of the rates, terms, and conditions provided for in each of the agreements.

A. Retail Electric Service Agreement (ESA)

The ESA is the base document for the Becker data center project. Like all electric service agreements, the ESA provides basic terms for Xcel Energy's provision of retail

electric service. In addition to standard terms, the ESA provides for other key terms and conditions, summarized as follows:

Maximum Load: The ESA provides service for up to **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW of peak load at the data center, which is the maximum load that the 315-acre site could physically accommodate.

Rate: Under the ESA, the data center will be a general TOD customer. The ESA is structured for Google to take service under the TOD so that the fundamental structure of the transaction does not deviate from standard service under our Tariff. Because the parties have negotiated a competitive rate, however, the TOD rate will be adjusted consistent with the CRR Agreement.

Annual Minimum Charge: In order to protect the Company's other customers from bearing stranded costs in the event the data center load is less than expected, the ESA requires that the data center pay an annual minimum charge regardless of the electrical energy it consumes in any given year. Initially, the annual minimum charge is structured to guarantee a minimum amount of revenue while the data center is at lower levels while it ramps up. This helps ensure that the data center can meet the incremental cost test upon its initial in-servicing. The annual minimum charge is intended to ensure a minimum level of revenue based on the data center's average annual load in the prior year so that the Company can expect at least a minimum level of revenue should the data center's load fluctuate from year to year due to maintenance, partial outages, etc. The annual minimum charge at different average annual peak load levels is provided for as a schedule to the ESA. The annual minimum charge payments are calculated as a percentage of the prior year's average peak load at a **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** percent load factor. It is structured as a one-way ratchet so that once each threshold load level is met, the annual minimum charge cannot be reduced.

Term: The ESA has an "Initial Term" of ten years, commencing at the earlier of the commercial operation date or **[TRADE SECRET BEGINS TRADE SECRET ENDS]** after receipt of Commission approval. The ESA also provides a mechanism to allow the parties to negotiate a term extension after the data center's first **[TRADE SECRET BEGINS TRADE SECRET ENDS]** of operation. The ESA includes a series of principles under which the negotiations are to be conducted and, importantly, requires Commission approval of any extended term.

Commencement of Service: To allow Google flexibility with respect to its build out, the ESA provides Google with up to **[TRADE SECRET BEGINS TRADE SECRET ENDS]** following regulatory approval to place the data center into commercial operation, though the intent is to bring it into service sooner than that. To help ensure that the Company has sufficient time to complete all of its obligations prior to the data center achieving commercial operation, the ESA requires that Google provide the Company with a Notice to Proceed (NTP), no later than **[TRADE SECRET BEGINS TRADE SECRET ENDS]** after regulatory approval, which gives the Company **[TRADE SECRET BEGINS TRADE SECRET ENDS]** to construct the required infrastructure. The ESA further provides that in the event Google provides its NTP but fails to bring the data center on-line within **[TRADE SECRET BEGINS TRADE SECRET ENDS]** of the regulatory approval, the clock on the competitive rate in the CRR Agreement will nonetheless begin and Xcel Energy will also apply the annual minimum charge. Google may also extend the **[TRADE SECRET BEGINS TRADE SECRET ENDS]** commencement window by up to an additional **[TRADE SECRET BEGINS TRADE SECRET ENDS]** in the event of force majeure.

Termination: The ESA provides that the Company may terminate the ESA upon 30 days' notice if it does not receive an NTP from Google by the **[TRADE SECRET BEGINS TRADE SECRET ENDS]** anniversary of Commission approval. The ESA also provides that Google may terminate the ESA for convenience, subject to a termination payment calculated to protect customers against the Company's costs of generation brought onto the NSP System pursuant to the ESA.

Renewable Energy Obligations: A unique feature of the ESA, and one required by Google as part of its negotiations for the site, is the requirement that the Company match the data center's energy usage with renewable energy resources. Under the ESA, the Company is required to procure "Clean Energy" – defined as "renewable, carbon-free" energy that is new to the NSP System following regulatory approval of the ESA. The ESA allows the Company to retire the RECs associated with the new renewable resources in amounts equal to or greater than the data center's use. This mechanism is intended to assure that the data center's energy use is matched with renewable energy throughout its initial ten-year term.

So that the Company may appropriately plan for and acquire renewable resources to meet its obligations under the ESA, the ESA requires that the data center provide annual load forecasts to the Company. The ESA allows the Company to procure

more “Clean Energy” up front to allow for future load growth as the data center scales. This allows the Company to procure renewable resources early in the ESA term to take advantage of currently-attractive wind prices and PTCs. The ESA also allows the Company to temporarily cover any possible REC shortfall with other RECs so long as it then retires additional RECs from incremental new generation within 36 months.

The Company’s clean energy obligations under the ESA terminate if both the data center reaches peak load of **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW and the Commission (or some other mutually-agreeable third party) certifies the Company’s grid mix as being **[TRADE SECRET BEGINS TRADE SECRET ENDS]** percent renewable.

Clean Capacity Obligations: While the parties do not expect the data center’s load to reach the **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW mark during the initial 10-year term, in the event that it does, the Company has agreed to procure **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW of incremental new, carbon-free capacity for the NSP System within **[TRADE SECRET BEGINS TRADE SECRET ENDS]** of this milestone. The Company’s clean capacity obligations are then ongoing throughout the remaining term of the ESA. As with the clean energy requirements, the Company’s capacity obligation terminates if the Commission, or a mutually-agreeable third party, certifies the Company’s grid mix to be **[TRADE SECRET BEGINS TRADE SECRET ENDS]** percent or higher. In addition, the ESA provides that the Company’s clean capacity obligations are subject to Commission approval at the time of (or prior to) the proposed capacity procurement.

Regulatory Approvals: The ESA is subject to a variety of regulatory approvals, including from the Commission. More specifically, the Company’s obligations under the ESA require that the Commission provide the following approvals: (a) approval of the ESA; (b) approval of rate base treatment of the transmission voltage facilities constructed by the Company to serve the data center; (c) approval of cost recovery for the Company’s renewable energy sourcing plan; (d) approval of the CRR Agreement; (e) approval of the requested ratemaking treatment of the difference between the TOD rate and the competitive rate provided for in the CRR Agreement; (f) approval of the IA; and (g) any other Commission approvals the Company may make in this Petition. In addition to approvals from the Commission, the ESA is also

conditioned on certain approvals from the North Dakota and South Dakota commissions, and the Federal Energy Regulatory Commission (FERC).

Dispute Resolution: The parties have agreed to adjudicate any disputes before the Commission. In the event the Commission declines jurisdiction for any dispute, either party may seek redress in Minnesota state or federal court.

Credit Support: To protect the Company and its customers, the ESA requires that Google – a creditworthy entity – guarantee Honeycrisp’s (the contracting entity) performance under the ESA. The initial guaranty is subject to a cap of **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]**, which may be increased under certain circumstances.

Applicability of the Tariff: The ESA reserves for both the Company and the data center all of their respective rights under the Company’s Tariff for any matter not otherwise addressed by the ESA.

B. Competitive Response Rider Agreement (CRR Agreement)

The CRR Agreement provides the terms for the competitive rate negotiated between the Company and Google under Minn. Stat. § 216B.162.

Competitive Rate: The main term of the CRR Agreement is the competitive rate which the parties have agreed to calculate as follows:

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS

HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

Term: The CRR Agreement is designed to be co-terminus with the ESA. This means that the CRR Agreement will apply as of the commencement of electric service under the ESA and terminate with the ESA.

Conservation Improvement Program (CIP) Exemption: The data center agrees to pay CIP charges (both the Conservation Cost Recovery Adjustment and the Conservation Cost Recovery Charge) in addition to its applicable rate unless and until it can apply for and qualify for a CIP exemption.

Regulatory Approvals: The CRR Agreement is expressly subject to the approval of the Commission, and is subject to the Commission approving the Company's requested treatment of the difference between the TOD rate and the rate paid by the data center under the CRR Agreement in all rate cases during the term of the ESA.

C. Interconnection Agreement for Retail Electric Service at Transmission Voltage (IA)

The IA provides the terms and conditions for the interconnection of the data center to the Company's transmission system for retail electric service at transmission voltage. The IA is modeled off of the Company's FERC-approved Transmission to Load Interconnection Agreement and covers the general terms for the coordination of operations between the data center and the Company for the safe and orderly function of each other's facilities. The IA provides terms and conditions for the Company's build-out of certain transmission voltage facilities to support interconnection of the data center. Because the Company will be providing retail electric service at transmission voltage, no wholesale sales are occurring. Additionally, no transmission of electric energy will occur through the Company facilities. Consequently, the IA is a Commission jurisdictional agreement and does not require FERC approval. Additional key terms include:

Term and Termination: The IA is for a ten-year term that commences when the data center achieves commercial operation. The term is renewable with each party providing 12 months' notice to terminate. In the event that Google terminates the IA, it is required to pay to the Company the net book value, as of the date of

termination, of all of the facilities constructed and placed in-service by the Company to support the data center's interconnection.

Construction of Company Facilities: Appendix A to the IA provides different transmission voltage configurations to support varying amounts of data center load from between [HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS] MW to [HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS] MW. The IA requires the data center to provide the Company with a "Notice to Construct," after which the Company is obligated to construct the necessary facilities at its cost.

Regulatory Approvals: The IA is conditioned on Commission approval and approval of rate recovery for the Company construction, ownership, operation, and maintenance of the interconnection facilities.

Credit Support: The IA includes the same parent guaranty requirements as set forth in the ESA.

Termination: Should the IA be terminated, Google must make a termination payment to the Company equivalent to the net book value of the transmission facilities as of the date of termination.

D. Natural Gas and Water Service

The three agreements described above govern the provision of electric service to the proposed Becker data center. In addition to electric service, the data center will also require natural gas service for heating and access to an ample water supply for cooling purposes.

Natural Gas Service

The Company intends to provide the data center with natural gas service for heating under the Company's existing natural gas retail tariff; thus, no separate Commission approvals are necessary for the provision of this service.

Water Service

Google's Becker data center will require non-contact cooling water to provide reliable equipment temperature control. The Company and Google are in the final stages of developing a water plan that will be filed with the Commission. The water plan will set out the general principles to allow Google's use of the Company's existing non-contact cooling water intake and discharge infrastructure and permits. Details

regarding the use of the Company's existing water intake and discharge infrastructure, use of the Company appropriation and discharge permitting, and the proposed treatment of costs and revenues will be provided at the time the water plan is filed with the Commission.

III. APPROVALS FOR THE DATA CENTER PROJECT

In the following sections, we demonstrate how each agreement meets the applicable test necessary for Commission approval.

A. Approval of ESA

As described above, the ESA outlines terms and conditions of Xcel Energy's provision of electric service to the proposed data center. Xcel Energy seeks Commission approval of the ESA pursuant to Minn. Stat. § 216B.05, subd. 2a, which requires Commission approval of an electric service agreement between a public utility and one of its customers if the agreement contains customer-specific rates, terms, or service conditions not already contained in the approved schedule, tariff, or rules of the utility. A copy of the ESA is provided as Attachment D.

The Commission has clarified the standard of review to be applied to ESAs, explaining that an ESA should be approved only if the terms and conditions are consistent with the public interest and are not discriminatory.²⁵ To determine whether a proposed ESA is in the public interest and non-discriminatory, the ESA must meet the following conditions:

1. No party affected by the proposed ESA should be worse off as a result of the amendment.
2. The rates under the ESA must not be discriminatory, namely the rates would be available to any other large power customer facing similar circumstances.²⁶

As detailed below, the ESA meets these two criteria.

²⁵ *In the Matter of Minn. Power's Petition for Approval of an Elec. Serv. Agreement Between Magnetation and Minn. Power*, Docket No. E015/M-14-130, ORDER APPROVING PROPOSED ELECTRIC SERVICE AGREEMENT (May 6, 2014).

²⁶ *In the Matter of Minn. Power's Petition for Approval of an Elec. Serv. Agreement Between Magnetation and Minn. Power*, Docket No. E015/M-14-130, ORDER APPROVING PROPOSED ELECTRIC SERVICE AGREEMENT (May 6, 2014).

1. *No party negatively affected due to ESA*

The parties that may be affected under the proposed ESA include the Company, Google (and its affiliate Honeycrisp), and Xcel Energy's existing customers. Because the ESA was entered into voluntarily by the parties acting in their own best interest, the two parties have determined they will not be worse off as a result of entering into the agreement.

Additionally, the ESA will not harm Xcel Energy's existing retail customers. The ESA enables a new large load addition to the NSP System for a minimum of ten years. This additional load, at the negotiated rate, provides benefits to Xcel Energy ratepayers by allowing the fixed cost of the system to be spread more widely. At its initial (relatively) low load levels, the data center will provide sales revenues in excess of its incremental costs. And as shown in Attachment E, and discussed in Section III.C below, as the data center's load grows, the increased revenue will provide greater benefits to our existing customers.

The benefit of the additional revenue to cover the fixed system costs would be realized at the time of Xcel Energy's next rate filing. If Xcel Energy files a rate case prior to the termination of this ESA, then all other things remaining the same, the ESA would result in lower overall revenue requirement increases and, therefore, result in effectively lower rates for other Xcel Energy customers than would be the case without the ESA.

The renewable sourcing plan component of the ESA also provides benefits to Xcel Energy customers. The renewable sourcing plan requires Xcel Energy to add clean energy to the NSP System to be able to retire RECs to match the data center's annual energy usage. At the current favorable pricing for renewable energy, these resource additions present the opportunity to lower our other customers' fuel costs. Specifically, the initial 300 MW of wind generation procured by the Company to meet its initial clean energy sourcing obligations has a lower cost than other generation resources currently included in the Company's Fuel Clause Rider. If the Commission approves inclusion of these lower cost resources in the Fuel Clause Rider, these resources will decrease the overall Fuel Clause Rider or fuel cost for our customers.

Moreover, Xcel Energy verified that the renewable sourcing plan contracted for in the ESA will provide benefits in excess of its costs by modeling this plan under eight different future scenarios. In nearly every scenario, with the exception of two solar-only sourcing scenarios, the plan provided benefits in excess of its costs for each year of the initial ten-year term. This modeling is discussed in detail in Section III.B, below.

For these reasons, no party will be negatively affected by the ESA and the first prong of the Commission's two-prong test is satisfied.

2. *Rate is Not Unduly Discriminatory*

With regard to the second criteria for ESA approval, the rates offered to the data center under the ESA are non-discriminatory.

The ESA provides that the data center will take service under General TOD rates subject to the rate revision under the Company's CRR Tariff and the CRR Agreement. This rate is not discriminatory because it is available to any other customer meeting the requirements of this tariff. Under the terms of the CRR Tariff, an existing customer must have a minimum load of 2 MW and must be subject to effective competition in that they are able to locate or expand their facilities out-of-state. For new customers, this means having a minimum initial load of 10 MW with the ability to grow to 75 MW of load within 5 years and be subject to the same effective competition as existing customers.

While the ESA contains a customer-specific renewable energy sourcing plan, Xcel Energy will offer similar sourcing for other large, high load factor customers that commit to bringing new or expanded load to the system of similar size. We further note that all customers have access to renewable energy similar to the way the Google data center will be served. Xcel Energy currently offers the Renewable*Connect²⁷ and WindSource programs to all customers. By doing so, all customers have the ability to be served by renewable energy. The Company is also seeking approval of additional renewable energy options that will be available to all customers, including high load factor customers. As we explain in a petition filed on January 7, 2019 in Docket No. E002/M-19-33, we would like to transition Renewable*Connect to a permanent offering, and expand the brand offering to include an incremental, new renewable energy option that would be available to all customers to meet their corporate, lifestyle, environmental, and/or financial goals. This permanent offering of Renewable*Connect will be geared toward high load factor customers and national accounts.

As a negotiated rate and renewable sourcing plan options would be available to other customers that are facing electric rate competition and would make similar commitments to bring new or additional high load factor load to the NSP System, the

²⁷ Xcel Energy is also piloting a Renewable*Connect Government program. The pilot for this program is essentially a single customer-sourced renewable program in that it powers parts of the Minnesota State Capitol Complex with the output from two new renewable resources that are dedicated to serve the Capitol.

rates and terms offered by this ESA are not discriminatory and are in the public interest.

B. Approval of Renewable Sourcing Plan

In this Petition, we request Commission approval of the renewable sourcing plan component of the ESA. As the clean capacity obligations under the ESA are subject to separate Commission approval during the ESA's initial ten-year term, what the Company seeks today is Commission approval related to the clean energy obligations of the ESA. The Company also seeks approval of cost recovery through the relevant ratemaking mechanism of the costs and expenses associated with obtaining the necessary clean energy required by the sourcing plan.

1. *Description of Renewable Sourcing Plan*

Given the concerns around climate change, Google shares the Company's commitment to leading the way on renewable energy. This is a core principle of Google's business strategy, and they make new facility siting decisions based on the availability of renewable energy supply options. To meet these objectives, the parties negotiated and executed what we believe to be a first-of-its-kind renewable sourcing plan associated with a retail electric service agreement. This plan has two components, one for clean energy related to the data center's energy usage and the second for clean capacity.

a. Clean Energy

Regarding clean energy, the sourcing plan requires Xcel Energy to procure sufficient incremental renewable generation for the NSP System such that RECs can be retired in amounts equal to the Becker data center's expected annual energy use. **[TRADE SECRET BEGINS**

TRADE SECRET ENDS] The Company's clean energy obligations under the ESA terminate if both the data center reaches **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS** **HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW of peak load and the Commission, or some other mutually-agreeable third party, certifies the Company's grid mix as being **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** percent renewable.

Given the current favorable pricing for wind generation, due to the availability of PTCs, Xcel Energy will acquire 300 MW of incremental new wind generation for the NSP System. Xcel Energy filed for Commission approval of a PPA between the Company and Dakota Range III, LLC for new wind generation from a 151.2 MW

facility in South Dakota on December 13, 2018.²⁸ Xcel Energy plans to file for Commission approval of another PPA for approximately 150 MW of wind generation in the coming weeks. Xcel Energy has and will request recovery of these costs for these two PPAs through the Company's Fuel Clause Rider. Since the pricing for these new wind additions is **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS**

HIGHLY CONFIDENTIAL TRADE SECRET ENDS], as compared to the average FCA pricing of \$25.60/MW, inclusion of these costs in the Fuel Clause Rider will lower the overall fuel costs for all customers.

[TRADE SECRET BEGINS

TRADE SECRET ENDS] future procurements could include a blend of wind, solar, and possibly other renewable resources procured through PPAs or as utility-owned assets. As we have done in procuring the initial 300 MW of wind generation, Xcel Energy would determine the type and method for acquiring additional renewable resources to comply with the terms of the ESA while also seeking the lowest cost resources that are available to provide continued lower fuel cost benefits for our other customers.

b. Clean Capacity

Because the parties do not expect that the data center's load will reach the **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW mark during the initial 10-year term, the renewable sourcing plan does not contemplate specific capacity additions. However, in the event this milestone is reached, the Company has the obligation to obtain **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW of renewable capacity for the NSP System.

The ESA explicitly states that such clean capacity additions are subject to Commission approval during the initial ten-year term of the ESA. This approval is in addition to the regulatory approvals for the ESA such that the Company will seek this further approval at the time it makes the clean capacity acquisition. The Company's obligations to procure this clean capacity terminate if the Commission, or a mutually-agreeable third party, certifies the Company's grid mix to be **[TRADE SECRET**

²⁸ *In the Matter of the Petition of N. States Power Co. for Approval of a Power Purchase Agreement with Dakota Range III, LLC*, Docket No. E002/M-18-765, PETITION (Dec. 13, 2018).

BEGINS **TRADE SECRET ENDS]** percent or higher. In addition, if the term of the ESA is extended, the Commission will have the ability to reevaluate this capacity obligation as part of its approval of any such ESA extension.

2. *Benefits of Clean Energy Additions*

While the two wind PPAs will allow the Company to meet its ESA clean energy obligations for some time, additional resources may be needed if the data center's load growth outpaces the RECs banked from these wind resources. These future resources could include wind, solar, and possibly other renewable resources procured through PPAs or as utility-owned assets.

If additional renewable resources are needed to meet our clean energy obligations under the ESA, Xcel Energy must be able to act nimbly to procure any such additional resource. This is because the ESA allows the Company only **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** to procure and place in service any additional clean energy needed to match the data center's usage. It typically takes **[TRADE SECRET BEGINS** **TRADE SECRET ENDS]** to place a renewable energy project in service and another 7 to 8 months to obtain the necessary regulatory approvals. This timing presents significant uncertainty given the Company's clean energy commitments under the ESA. As a result, the Company seeks Commission approval today to allow Xcel Energy to procure the additional renewable resources necessary to comply with its obligations under the ESA. Xcel Energy will determine the type of resources and the method for acquisition but will seek to procure the most cost-effective resources that are available at that time.

Xcel Energy understands that this is a significant request of the Commission. To verify the feasibility of the Company's sourcing obligations and therefore the reasonableness of the renewable sourcing plan, Xcel Energy analyzed eight different feasible scenarios. These scenarios assumed different data center load growth patterns, procurement of different types of renewable generation sources, and a range of prices for those resources. This modeling is different than the incremental cost test discussed below in that it focuses on the benefits and costs associated with adding these renewable resources and the data center itself. The eight different future scenarios and results of this modeling are discussed below.

a. Future Scenarios

Xcel Energy modeled eight different future scenarios:

1. Reference Case: straight line load growth starting at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS** **HIGHLY**

CONFIDENTIAL TRADE SECRET ENDS] MW and growing at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW increments every year and reaching **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW at the end of the 10-year initial term of the ESA.

2. High Load Growth: load growth was assumed to be sporadic but substantial, reaching **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW at the end of the initial 10-year term. Load starts at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW and increases by **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW annually to **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW in year five and then increases by **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW annually to reach **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW in year ten.
3. Low Load Growth: straight line load growth starting at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW and growing at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW increments every year and reaching **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW by year ten.
4. Low Load then High Load Growth: straight line load growth starting at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW and growing at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW increments for the first five years. After year five, load grows at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW increments and reaches **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW in ten years.

5. Optimized REC Procurement: this scenario models the maximum load growth that can be sustained using the RECs from the two initial wind PPAs. The model shows that this load amount is **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW in ten years.
6. Wind at 20 Percent Higher Cost: load growth same as the Reference Case. Pricing for the wind PPAs is assumed to be 20 percent higher than the preliminary wind \$/MWh costs assumed in Xcel Energy's upcoming resource plan filing.
7. Solar Only: Given the higher price associated with solar generation, Xcel Energy also included a scenario that assumed only solar generation is used to meet the renewable generation requirements required by the Reference Case load growth projections. This scenario assumes a 300 MW solar PPA at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** is added in the first year with escalating costs of 2 percent each year and a Net Capacity Factor of 22 percent. A second 300 MW solar PPA is added in the second year with similar pricing and capacity. In year nine, a third PPA of 575.6 MW is added at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** with escalating costs of 2 percent each year and a Net Capacity Factor of 22 percent. Pricing for all three of these PPAs is consistent with preliminary solar price assumptions in Xcel Energy's upcoming resource plan filing.
8. Solar Only at 20 Percent Higher Costs: load growth same as the Reference Case. Pricing for solar PPAs is assumed to be 20 percent higher than the \$/MWh costs assumed in Xcel Energy's upcoming resource plan filing.

In the first six scenarios, only wind PPAs were used to meet the renewable energy requirements. Specifically, a 151 MW PPA is added in year one with pricing the same as the Dakota Range III PPA and a 150 MW PPA is added in year two. If needed depending on the load growth scenario, an additional wind PPA is added in year 8 or year 9 at a price of nearly **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]**.

In all eight scenarios, Google's load factor was assumed to be **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** percent. All eight scenarios also

Table 5
Net (Cost) Benefit Analysis of Sourcing Plan
(\$ millions)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Scenario	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS...]										
Reference Case										
High Load Growth										
Low Load Growth										
Low Load then High Load Growth										
Optimize REC Procurement										
20% Higher Wind										
100% Solar										
100% Solar + 20% Higher										
...HIGHLY CONFIDENTIAL TRADE SECRET ENDS]										

3. *Requested Commission Approval of Plan and Appropriate Ratemaking*

The Company has or will seek separate Commission approval for the two wind generation PPAs that will be procured to meet our initial obligations under the ESA. In these filings with the Commission, we will demonstrate the PPAs are in the public interest. However, for purposes of this Petition, we seek Commission approval for the Company to acquire additional clean energy resources, as needed, to meet our ongoing obligations under the renewable sourcing plan. As demonstrated by Xcel Energy’s modeling results, these clean energy additions are beneficial under a variety of different future scenarios.

As our relationship with Google matures and we have a clearer understanding of the load and usage over time, we will be able to determine how best to meet the renewable sourcing requirements. Approval of our sourcing plan retains flexibility to meet the sourcing needs in the future. In addition, we may also be able to propose a margin-sharing mechanism if the size and situation warrants such treatment as we know more about this customer and the size of the data center over time.

The Company also seeks, as part of this Petition, certainty regarding the cost recovery for future resource additions required by the ESA's renewable sourcing plan. Specifically, the Company seeks a Commission determination that the costs associated with the renewable sourcing plan are recoverable, now and in the future, through either the Fuel Clause Rider or through future rate cases. As demonstrated by the modeling conducted by the Company, these additional renewable resources will provide benefits in excess of their costs for Xcel Energy customers under a variety of future scenarios. As such, cost recovery for these resources is reasonable.

C. Approval of CRR Agreement, Rate, and Tariff

As described in Section II, the CRR Agreement implements the proposed CRR Rate by applying it to Google's purchase of retail electric service under the ESA. In this section, we: (1) discuss the CRR Rate; (2) provide an incremental cost analysis; (3) present proposed modification to the existing CRR Tariff; and (4) present our request for approval of the CRR Agreement, Rate, and Tariff modifications, demonstrating compliance with all statutory requirements.

1. CRR Rate

As provided in the CRR Agreement, the parties have negotiated a rate for the data center's electric service under the Company's existing General TOD rates. The CRR Rate is shown in Section II.B above. A sample calculation of the CRR Rate is provided in Attachment B of Attachment G,²⁹ which is marked as Highly Confidential Trade Secret.

Given the significant economic benefits associated with a data center like the one presented here, there is substantial competition among states and localities to attract these facilities. Because energy costs are the most significant operation and maintenance expenses for a data center, they are a key component of location decisions. Obviously, Google has the opportunity to locate its data center in other states and other countries. To induce Google to build the data center in the Company's service territory and to attract the substantial economic benefits of the project, the Company submits that the proposed rate adjustment is both reasonable and prudent.

Other state regulatory commissions have recognized that negotiated electric rates are an important and necessary tool to help their states attract and retain large business customers and the associated economic activity. For instance, the Florida Public Service Commission approved a commercial/industrial rider that allows Florida

²⁹ See Attachment G at B-2 - B-5.

Power & Light Co. the ability to negotiate rates for industrial and commercial customers with a load of 2 MW or more.³⁰

A review of state commissions throughout the Midwest show consistent use of economic development rates to attract new customers or to allow expansion of existing customers, particularly in energy intensive industries. In Iowa, the Public Utilities Board has approved Alliant Interstate Power and Light's economic development rider to induce increases in new load. Likewise, in South Dakota, Montana-Dakota Utilities offers an economic development rate for new large customers or existing customers that increase their usage by 750,000 kWh per year.

The Minnesota legislature has long recognized the importance of offering negotiated electric rates to attract, retain, and expand load. Under Minnesota Statutes section 216B.162, a public utility may develop a special rate for new or existing large customers that have the ability to locate or expand facilities in other states and service territories. The Company's current CRR Tariff was developed pursuant to this statute.³¹

While it is possible that in the future we may develop a separate data center rate or economic development rate for potential new large customers, the Company was able to make modest amendments to the existing CRR Tariff to accommodate the proposed Becker data center.

In addition to approval of the CRR Rate, we request Commission approval to reflect the difference between Google's default TOD rate and the CRR Rate in the test year in a future rate case, as allowed under the competitive rate statute and as addressed in Section III.E.1, below.

2. *Incremental Cost Analysis*

An incremental cost analysis, provided in Attachment E, shows that, as required by Minn. Stat. § 216B.1612, subd. 4(1), the projected revenues from Google exceed the incremental costs of providing service to the proposed Becker data center, including the cost of additional capacity that is to be added while the rate is in effect and any applicable on-peak or off-peak differential.

³⁰ *Re Tampa Elec. Co.*, Docket No. 980706-EI, ORDER APPROVING COMMERCIAL INDUSTRIAL SERVICE RIDER AND PILOT STUDY IMPLEMENTATION PLAN FOR TAMPA ELECTRIC COMPANY (Aug. 10, 1998); *see also* Florida Power and Light Co. Elec. Tariff, Tariff Sheet 8.910-8.920, *Commercial/Industrial Service Rider* (effective date Feb. 4, 2014), *available at* <https://www.fpl.com/rates/pdf/electric-tariff-section8.pdf>.

³¹ *In the Matter of the Application of N. States Power Co. for Auth. to Increase Elec. Rates for Elec. Serv. in the State of Minn.*, Docket No. E002/GR-12-961, FINDINGS OF FACT, CONCLUSIONS, AND ORDER at 12 (Sept. 3, 2013).

The purpose of this analysis is to demonstrate compliance with the statutory requirement. This is different than the purpose of the renewable sourcing plan cost-benefit analysis provided in Section III.B.2 above. That cost-benefit analysis shows the reasonableness of the renewable sourcing plan and the net economic benefits under various potential future scenarios, considering additional economic benefits that are realized under the structure of the overall transaction. In contrast, the incremental cost analysis below looks strictly at the revenues compared to the incremental costs of providing service. This analysis shows that providing service to the data center at the revised CRR Rate results in revenue in excess of its incremental costs to the system.

The incremental costs to serve the Becker data center include:

- incremental energy costs, based on the Company's projected marginal energy costs and Google's estimated usage;
- incremental capacity costs, based on the future need for a combustion turbine addition and using the Commission-approved incremental capacity pricing methodology;
- jurisdictional cost allocation increase to Minnesota;
- a net increase in MISO costs, which include increased expenses for ancillary services, administrative costs, and transmission due to the increase in load; and
- incremental transmission costs for the construction of new transmission facilities required to serve the Becker data center at transmission voltage.

We note that because adding the Becker data center to the NSP System will result in new incremental renewable energy being added to the NSP System from the renewable sourcing plan, in an amount sufficient to cover all energy usage, no additional environmental costs should be attributed to the provision of service to the data center. As such, the incremental cost calculation does not include the Commission-approved environmental costs associated with emissions from non-renewable generation.³²

Table 6 presents the incremental costs and revenues for the Becker data center. This analysis shows incremental costs and revenues that vary with load. However, recognizing that the CRR Agreement does not specify the trajectory of load growth, this analysis does not assume specific timing for the load additions, and thus reflects energy at current prices.

³² See *In the Matter of the Further Investigation into Environmental and Socioeconomic Costs Under Minn. Stat. Section 216B.2422, Subd. 3*, Docket No. E999/CI-14-643, ORDER UPDATING ENVIRONMENTAL COST VALUES (Jan. 3, 2018).

Table 6
Incremental Cost Calculation – Load Based

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS

HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

Because there is flexibility regarding the timing of the data center's load growth, we have also looked at a scenario of achievable load growth over the ten-year term, assuming specific timing for these load additions. In this case, with load addition timing assumed, we have used projected marginal cost estimates each year to best reflect incremental costs associated with these future load additions.

Table 7
Incremental Cost Calculation – Load Addition Timing Based

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS

HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

As shown, in each of these scenarios the projected revenues from the data center exceed the incremental costs of providing service to the data center, demonstrating that the provision of service at the CRR Rate meets the statutory requirement.

3. *CRR Tariff Modifications*

The Company seeks Commission approval to revise its current CRR Tariff (Minnesota Rate Book – No. 2, Section No. 5, Sheet No. 122) to: (1) modify the minimum load requirement for new customers from 2 MW to 10 MW with the ability to achieve 75 MW of load within 5 years, and (2) to allow for a contract term up to 10 years for new customers rather than the 7 years specified in the existing tariff.

The increase in the minimum load requirements for new customers is beneficial as it limits the CRR Rate to new large load additions but allows the flexibility for that load to grow over time. The second change, extending the term of service to ten years, is beneficial as it allows the Company to retain a new customer on the system for a longer period of time. Redline and clean versions of the proposed modifications to CRR Tariff Sheet No. 122 are provided in Attachment H.

The proposed modifications do not change the terms of the tariff for potential customers with existing load but instead provide necessary modifications to accommodate the terms of service for the proposed data center. The terms of the CRR Tariff do not provide preferential treatment as they will be available to all other similarly-situated customers and these modifications will provide flexibility to accommodate similar customers.

4. *Approval of CRR Agreement, CRR Rate, and Tariff Modifications*

The CRR Agreement is conditioned on the Commission's approval of the CRR Rate, the CRR Agreement, the CRR Tariff modifications, and the appropriate ratemaking treatment of the CRR Rate. In this section, the Company outlines the relevant statutory criteria applicable to the Commission's approval and the factual support for compliance with those criteria.

a. Tariff Modifications – Minn. Stat. § 216B.162, subd. 2

The proposed CRR Rate, CRR Agreement, and modifications to the existing CRR Tariff are consistent with Minn. Stat. § 216B.162. Under Minn. Stat. § 216B.162, subd. 2, the Commission is required to approve a competitive rate schedule when:

1. The provision of service to a customer or class of customers is subject to effective competition; and

2. The schedule applies only to customers requesting electric service with a connected load of at least 2,000 kilowatts.

In prior decisions, the Commission has found that a customer's ability to locate outside of Minnesota means that the customer is subject to effective competition.³³ As documented by Google in Attachment I, Google had the ability to select numerous other sites across the nation for its next data center. As part of its site evaluation, Google compared each of these potential sites on several different metrics, including rates for electric service. As Google had the ability to select other sites outside of Minnesota for its new data center, Google is subject to effective competition.

In addition, the data center's initial load will be at least 10 MW and thus meets the second statutory requirement for a competitive rate schedule.

- b. Approval of Rate and Agreement – Minn. Stat. § 216B.162, subd. 4

Minnesota Statutes section 216B.162, subdivision 4 provides six terms and conditions for service under a competitive rate tariff. As described below, the proposed CRR Rate, the CRR Agreement, and the Company's proposed modifications to the CRR Tariff satisfy the six statutory criteria.

1. *That the minimum rate for the schedule recover at least the incremental cost of providing the service, including the cost of additional capacity that is to be added while the rate is in effect and any applicable on-peak and off-peak differential.*

The proposed CRR Rate will allow the Company to recover the incremental cost of providing electric service to Google as demonstrated in Table 7, above, and in Attachment E.

³³ *In the Matter of the Petition of N. States Power Co. d/b/a Xcel Energy for Approval of a Revised Competitive Response Rider Tariff and a Revised Competitive Response Rider Agreement with Gerdau Ameristeel US Inc.*, Docket No. E002/M-12-163, ORDER (Sept. 20, 2016) (approving negotiated rate under the Competitive Rate Statute when a customer had the ability to invest in alternative locations outside of Minnesota); *In the Matter of a Petition by N. States Power Co. and North Star Steel for Approval of a Contract Amendment to their Elec. Serv. Agreement*, Docket No. E002/M-93-301, ORDER APPROVING CONTRACT AMENDMENT WITH MODIFICATIONS (June 18, 1993) (approving the elimination of a demand charge for a steel processing customer who was considering alternative investments in other states).

2. *That the maximum possible rate reduction under a competitive rate schedule does not exceed the difference between the electric utility's applicable standard tariff and the cost to the customer of the lowest cost competitive energy supply.*

The proposed CRR Rate does not exceed the difference between Xcel Energy's applicable standard rate and the rate that Google could obtain from the lowest cost competitive energy supply. The CRR Rate is structured to provide Google an effective rate of **[HIGHLY CONFIDENTIAL TRADE SECRET DATA BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** by taking the difference between each component of the Company's TOD rate and a fixed amount. This structure ensures that Google receives the agreed-to effective rate regardless of the actual TOD rate over the ten-year initial term of the ESA. As a result, the maximum possible rate reduction analysis is best performed by comparing Google's effective rate to rates available to Google from other utility providers around the country.

This benchmark is met as the publicly-available rates offered by at least two other electric service providers in two different states are lower than the proposed CRR Rate. For instance, a customer with 100 MW load and a 95 percent load factor taking electric service at transmission voltage not higher than 230 kilovolts (kV) would qualify for the following effective rates:

- Public Service Company of Oklahoma (Oklahoma Schedule - Large Power and Light - Transmission): 3.76 cents/kWh.³⁴
- Entergy Louisiana (Louisiana Schedule – Large Power High Load Factor Service): 4.28 cents/kWh.³⁵

These effective rates are based on all applicable base charges, riders, and possible energy efficiency charges. Demand charges and fixed monthly charges to a volumetric rate are based on the load and load factor noted above. The precise rate calculation is sensitive to the assumed load factor, but not greatly so. A significantly reduced load factor of 80 percent produces only a small change in the effective volumetric rate, shifting it upwards by 0.1 – 0.25 cents/kWh, and remains below the proposed CRR Rate benchmark. As the rate available to Google from other utility

³⁴ Public Service Company of Oklahoma Electric Service Tariff, Tariff Sheets 20-1 – 20-2, *Large Power and Light* (effective date Feb. 28, 2018), *available at* <https://www.psoklahoma.com/global/utilities/lib/docs/ratesandtariffs/Oklahoma/PSO%20Large%20Commercial%20&%20Industrial%20March%202018.pdf>.

³⁵ Entergy Louisiana, LLC Electric Service Tariff, Tariff Sheets 25.1-25.2, *Large Power High Load Factor Service* (effective date Oct. 1, 2015), *available at* http://www.entergy-louisiana.com/content/price/tariffs/GS/ell_elec_LPHLF-g.pdf.

providers around the country is lower than the proposed CRR Rate, this criteria is met.

3. *That the electric utility, within a general rate case, be allowed to seek recovery of the difference between the standard tariff and the competitive rate times the usage level during the test year period.*

The CRR Rate is a necessary prerequisite for Google to locate within Xcel Energy's service territory to the benefit of our customers and the state of Minnesota. As a result, it is appropriate that the Commission approve recovery of the cost of providing the CRR Rate in its next general rate case. Our request for ratemaking treatment is provided in Section III.E below.

4. *A determination that a rate within a competitive rate schedule meets the conditions of section 216B.03, for other customers in the same customer class.*

The proposed modifications to the CRR Tariff are just and reasonable and are not unreasonably preferential, unreasonably prejudicial, or discriminatory. These revisions are intended to broaden the availability of the CRR Tariff to additional new, large customers that, like Google, are considering joining the NSP System.

5. *That the rate does not compete with district heating or cooling provided by a district heating utility as defined by section 216B.166, subdivision 2, paragraph (c).*

The proposed CRR Rate does not compete with district heating or cooling.

6. *That the rate may not be offered to a customer in which the utility has a financial interest greater than 50 percent.*

This requirement is not applicable as the Company has no financial interest in either Google or Honeycrisp.

- c. Approval of Rate and Agreement - Minn. Stat. § 216B.162, subd. 7

Minnesota Statutes section 216.162, subdivision 7(b) provides criteria pursuant to which the Commission may determine if the proposed competitive rate and agreement are consistent with the public interest. The Company's proposal meets each of these criteria.

PUBLIC DOCUMENT—NOT PUBLIC DATA HAS BEEN EXCISED

1. *That the rate meets the terms and conditions in subdivision 4, unless the Commission determines that waiver of one or more terms and conditions would be in the public interest.*

As described above, the proposed CRR Rate meets all of the terms and conditions of Minn. Stat. § 216B.162, subd. 4.

2. *That the customer can obtain its energy requirements from an energy supplier not rate regulated by the Commission under section 216B.16.*

As described in Attachment I, Google has the ability to locate its proposed data center at numerous other locations across the country. As a result, Google is able to obtain electric service from an energy supplier that is not regulated by the Commission. The Commission has previously found that a customer's ability to locate its facility outside of Minnesota qualifies as effective competition.³⁶ Attachment I provides further discussion of the competitive market conditions related to Google's site selection decisions.

3. *That the customer is not likely to take service from the electric utility seeking to offer the competitive rate if the customer was charged the electric utility standard tariffed rate.*

Google has made clear that its decision to select the Becker site for its new data center is dependent on the CRR Rate. Without the CRR Rate, the economic feasibility of this new data center would be jeopardized. Attachment I details the competitive market conditions faced by Google, and its position with respect to the need for the CRR Rate.

4. *That after consideration of the environmental and socioeconomic impacts it is in the best interest of all other customers to offer the competitive rate to the customer subject to effective competition.*

An examination of the environmental and socioeconomic benefits demonstrates that offering the CRR Rate as set forth herein is in the best interest of all customers.

³⁶ *In the Matter of the Petition of N. States Power Co. d/b/a Xcel Energy for Approval of a Revised Competitive Response Rider Tariff and a Revised Competitive Response Rider Agreement with Gerdau Ameristeel US Inc.*, Docket No. E002/M-12-163, ORDER (Sept. 20, 2016) (approving negotiated rate under the Competitive Rate Statute when a customer had the ability to invest in alternative locations outside of Minnesota); *In the Matter of a Petition by N. States Power Co. and North Star Steel for Approval of a Contract Amendment to their Elec. Serv. Agreement*, Docket No. E002/M-93-301, ORDER APPROVING CONTRACT AMENDMENT WITH MODIFICATIONS (June 18, 1993) (approving the elimination of a demand charge for a steel processing customer who was considering alternative investments in other states).

Under the renewable sourcing plan associated with this proposal, the data center's additional energy usage will be matched with the procurement of new renewable generation resources for the benefit of the entire NSP System. Due to its favorable pricing, this additional renewable generation on the NSP System will replace other non-renewable generation and lead to reductions in overall carbon emissions for the benefit of all customers.

With regard to socioeconomic benefits as set forth above, this competitive rate will facilitate important economic development in the City of Becker, Sherburne County, and throughout Minnesota. If it moves forward, the project would generate a minimum capital investment \$600 million, making it one of the largest private developments in Minnesota.

If, for whatever reason, the Commission believes that the CRR Agreement does not meet the requirements of the CRR statute, the Commission has authority to approve the proposed agreement pursuant to Minn. Stat. § 216B.05, subd. 2a. This statute allows the Commission the ability to approve contracts that contain customer-specific rates not already included in the approved tariff so long as such rates are not unreasonably prejudicial, unreasonably preferential, or discriminatory.³⁷

The rate offered to Google is not unreasonably preferential or discriminatory because it is available to other customers willing to make similar commitments to expand or add new load to the system. The rate offered to Google is also not unreasonably prejudicial as the additional sales to Google will benefit other customers by assisting in fixed-cost recovery. Specifically, as demonstrated by Attachment E, the sales revenue generated by the data center will be in excess of its incremental costs to the system. As a result, Google's addition to the NSP System will be a net benefit to the Company's other customers.

In addition, there are benefits to the state of Minnesota that arise from the ability to attract a new customer like Google to the state. All of these benefits are dependent on the Company's ability to offer Google the negotiated rate provided under the CRR Agreement. Without the negotiated rate offered here, Google would unfortunately likely have to forego the Becker site and instead focus on a location that meets its investment criteria.

³⁷ Minn. Stat. § 216B.03.

D. Interconnection Agreement

To enable the data center to take retail electric service at transmission voltage (115 kV), the IA identifies the necessary electrical equipment upgrades, the timing for construction of these upgrades, and the party responsible for the costs of the upgrades. The IA is a ten-year agreement that will automatically renew for additional twelve-month periods until Google elects to terminate. A copy of the IA is provided as Attachment J.

The specific electrical upgrades required to provide electric service to the data center are trade secret but are outlined in detail in Appendix A to the IA. The timing for construction of these upgrades is conditioned on the Company receiving Google's "Notice to Construct." Upon receipt of a Notice to Construct, the Company will commence the necessary activities to construct the identified electrical facilities to meet Google's requested in-service date for its data center.

1. *Approval of Interconnection Agreement*

The Company requests approval of the IA pursuant to Minn. Stat. § 216B.05, subd. 2a, which provides:

A contract for electric service entered into between a public utility and one of its customers, in which the public utility and the customer agree to customer-specific rates, terms, or service conditions not already contained in the approved schedule, tariff or rules of the utility must be filed for approval by the Commission. . . .

This statute allows a utility and a customer to negotiate a separate agreement outside of the existing statutory construction and the utility's rate book, if desired. The standard for approval of this type of agreement is whether it is compatible with the public interest.³⁸ The terms of the proposed IA are in the public interest. Google has the potential to be one of the largest retail customers on Xcel Energy's system. As a result, it is in the public interest for the Company to undertake installation of certain electric facility upgrades to accommodate this new, large customer.

In addition, the IA provides that Google will not directly contribute to the costs related to installation of the electrical upgrades necessary for the provision of service to the data center. As such, we request approval of a one-time waiver of tariff

³⁸ *In the Matter of the Petition for Approval of an Interconnection Agreement with Flint Hills Res. Pine Bend, LLC*, Docket No. E002/M-17-773, ORDER (Jan. 11, 2018).

provisions related to customer contributions for the interconnection infrastructure. We discuss our request for waiver of tariff provisions in Section III.D.3 below.

Xcel Energy will seek recovery of the costs for the electric facilities and upgrades made pursuant to the IA in a future electric rate case. See Section III.D.2 below requesting approval of this ratemaking treatment.

We also note that these costs are considered incremental costs of providing service to the data center and are included in the incremental cost analysis discussed above. And in the event of an early termination, Google has agreed to pay the net book value of any facilities installed to serve the data center.

2. *Approval of Appropriate Ratemaking Treatment of the Electric Upgrade Costs*

Xcel Energy will seek recovery of the costs for the electric facilities upgrades made pursuant to the IA in its next electric rate case. While this is typical treatment for general infrastructure investment of this kind, in this case, the Company's investment and inclusion in rate base would require waiver of tariff provisions that would otherwise require Google to bear the costs of the facilities and upgrades. The Company respectfully requests that, should the Commission approve the IA, the Commission allow for recovery of these costs, as discussed below.

3. *Approval of Waiver of Tariff Provisions*

The IA provides that the electric upgrades and facilities necessary for interconnection of the data center will be borne by the Company. This contractual term requires a waiver of three sections of the Company's Tariff that require the customer to bear the costs related to the installation or upgrades to these facilities. As a result, the Company requests a one-time waiver of Sections 5.1B, 5.2, and 5.3 of the Tariff.

Specifically, Section 5.1B governs the provision of electric service at transmission voltage under specified conditions and requires a requesting customer, among other things, to reimburse the Company for all costs associated with required new or relocated transmission lines or extensions and substation modifications. Section 5.2 sets forth general expenditure requirements and customer payment obligations for standard installations and extensions of Company facilities that are required to supply electric service. Lastly, Section 5.3, among other things, establishes additional payment obligations for excess expenditures associated with special facilities and transmission facilities whose design standards exceed certain standard facilities design thresholds. The Company seeks a limited one-time waiver from these provisions such that the Company may develop and construct all Company-owned facilities contemplated under the IA. The proposed data center is a unique customer with a

significant amount of load that operates at a high capacity factor. As a result, the costs and expenses associated with these facilities will be offset by the corresponding revenues as demonstrated by the fact that such costs and expenses were included in the incremental cost test.

To the extent that additional tariff modifications or waivers are necessary, the Company will make any such modifications as part of a later compliance filing.

E. Request for Approval of Ratemaking Treatment

In this section, we request approval of the proposed ratemaking treatment of the difference between the TOD rate and the negotiated rate provided for in the CRR Agreement (CRR value).

1. Approval of Appropriate Ratemaking Treatment of the CRR Value

As noted in Section III.C.4.b above, Minn. Stat. § 216B.162, subd. 4 provides six terms and conditions for service under a competitive rate tariff. Provision 3 provides “[t]hat the electric utility, within a general rate case, be allowed to seek recovery of the difference between the standard tariff and the competitive rate times the usage level during the test year period.” Consistent with this statute, we request Commission approval to reflect the difference between the negotiated rate and standard rate in the test year in a future rate case.

As described in Section III.C above, the CRR Agreement provides the competitive rate for provision of service to the Becker data center and outlines the allocation of this rate to base rates, riders, and fuel. The CRR Agreement allows that the Company, **[TRADE SECRET BEGINS**

TRADE SECRET ENDS] Before addressing proposed ratemaking treatment in a future rate case, we first describe the allocation of the rate as it relates to riders and the fuel clause.

a. Rider Allocation

The amount of the CRR Rate allocated to riders is shown in Section II.B above. This allocation is set to cover the rider charges that Google would pay at today’s rider rates. The amount received from Google under this rate would then be reflected as revenue in the appropriate rider tracker accounts. This would act as a credit to the rider tracker accounts and reduce the costs that would otherwise be collected from all other customers under the riders.

Although we have [TRADE SECRET BEGINS
TRADE SECRET ENDS] is a reasonable initial approach. Adding Google to the system will not result in any incremental costs under any of our riders. While rider rates may fluctuate over time, the rider revenues received from Google, [TRADE SECRET BEGINS
TRADE SECRET ENDS], will reduce rider costs for all customers.

[TRADE SECRET BEGINS

TRADE SECRET ENDS] such that Google will contribute to the rider costs and there would be no harm to other customers.

b. FCA Treatment

As described earlier, we are requesting that costs of the two initial wind PPAs under the renewable sourcing plan be included in the FCA, which will benefit all customers through lower costs than the current FCA costs. As we have also described, Google will pay fuel costs through the FCA. However, as allowed under the CRR Agreement, we have structured the rate such that during the initial ten-year term, [TRADE SECRET BEGINS

TRADE SECRET ENDS]

[TRADE SECRET BEGINS

TRADE SECRET ENDS] Although we do not currently have plans to procure solar resources under the renewable sourcing plan for the data center, solar resources may be procured in the future. As such, we believe this pricing is a good representation for the fuel mix for the data center going forward.

Mechanically, this will not function like the fuel clause accounting for actual [TRADE SECRET BEGINS

TRADE SECRET ENDS] In this case, Google will be treated like all other system customers under the fuel clause, but we would simply be using the [TRADE SECRET BEGINS
TRADE SECRET ENDS] as a proxy representing Google's renewable fuel cost.
[TRADE SECRET BEGINS

TRADE SECRET ENDS] As for any other system customer, the difference in revenue between Google’s fuel price and the FCA price will be deferred on a monthly basis as either a regulatory asset or liability, which would be addressed in the annual review of the Company’s fuel clause.

Under this mechanism, any net benefits will be realized by all other customers through a credit to the fuel clause. **[TRADE SECRET BEGINS**

TRADE SECRET

ENDS] results in lower revenues than the FCA price over the year, that net loss would be reviewed in the annual fuel clause review and a recovery determination would be made at that time.

The Company proposes to set **[TRADE SECRET BEGINS**

TRADE SECRET ENDS]

because we believe it is a good representation of Google’s fuel costs and has the potential to benefit all other customers through a net credit to the fuel clause.

c. Request for Approval of Ratemaking Treatment

Consistent with the competitive rate statute, Minn. Stat. § 216B.162, subd. 4, we request Commission approval to reflect the CRR value in the test year in a future rate case.

This request does not seek to recover lost revenue or to change current rates; rather, we seek to ensure that in a future rate case, the Company is allowed to include the difference between the negotiated rate and standard TOD rate in the test year revenue requirement, and the difference is fully allocated across all customer classes. However, as part of the Company’s rate design proposal in a future rate case, the Company may propose that different customer classes are assigned different percentages of the CRR value.

We request that the Commission explicitly approve this ratemaking treatment in its order in this proceeding. Although we recognize that the statute does not require approval of such treatment at the outset, our agreements with Google are conditioned on this approval. We are making this request now rather than waiting until a future rate case because the Company needs certainty around ratemaking treatment before proceeding with the transaction. This need for certainty is primarily due to the potential size of the data center load. To be able to assess the risk associated with the transaction, the Company needs to know how ratemaking will work going forward, especially considering costs and revenues associated with a customer of this size, which can have a significant financial impact on the Company. While we are excited

to bring this customer to our system and enable the long-term benefits of the project for our customers, waiting for a decision on ratemaking treatment until our next rate case would present an unacceptable risk for the Company and our shareholders. Therefore, we believe it is reasonable that the Company make this request for approval of appropriate ratemaking treatment in this Petition.

Our proposed ratemaking treatment is appropriate because offering the CRR Rate was necessary to compel Google to locate within Xcel Energy's service territory, which will benefit all of our customers, as well as the local community and the state of Minnesota. Absent the ability to attract Google to our system, there is no opportunity to realize these benefits. As such, we consider the negotiated rate a necessary component of providing service to the data center, which will ultimately benefit all customers. Including this amount in revenue requirements does not harm other customers as the incremental revenue from Google covers all the incremental costs of providing this service, and, in fact, provides additional revenue to the benefit of other customers.

We initially engaged in negotiations with Google because, first and foremost, bringing a significant amount of new, high capacity factor load to our system can benefit all of our customers over time. With continuing improvements in energy efficiency technologies that reduce electric use per customer, as well as increased generation on the customer's side of the meter, adding new customers to our system does not necessarily result in increased sales. It is not typical for Xcel Energy to have the opportunity to add one customer of Google's size to our system. Over time, this customer has the opportunity to be one of our largest customers. The size of the load and the length of time the customer is expected to remain on our system will provide substantial benefits. These benefits are two-fold.

First, as additional load comes on the system, an increase in electric sales, and thus increased revenue, has the potential to delay or reduce the frequency of future rate increase requests. For Google in particular, at **[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS]** MW, well below its potential peak load, the data center would be the largest customer on the NSP System. At that size, the increase in revenues due to this additional load is material and could reduce revenue deficiencies such that a future rate case may be delayed.

Second, in a future rate case, the additional large load will spread the fixed system costs over a larger base. As shown in Attachment E, the expected sales revenue provided by Google is sufficient not only to recover the incremental cost of providing service to the data center, but will provide additional revenue to contribute to the

system's fixed costs. This lowers the amount of fixed costs that would be allocated to existing customers absent the addition of the data center.

It is the size of the new load and the associated revenue that enable these benefits for customers, even considering the negotiated rate necessary to induce Google to locate this new data center on our system. Providing a newly-structured rate to attract a new, large customer load to join a utility's system is consistent with good utility ratemaking practice. New investments are critical for Minnesota's economic development and all of Xcel Energy's customers benefit when a new large volume customer joins the NSP System, or an existing customer significantly expands its operations resulting in new load on the system.

We note that the negotiated rate to attract new load to our system presents a different ratemaking situation than providing a negotiated rate for an existing customer with no additional load growth. For example, under Minn. Stat. § 216B.1696, a utility may offer a negotiated rate to an energy-intensive trade-exposed (EITE) customer meeting eligibility requirements in the statute. These rates are intended, among other things, to protect utility customers by retaining existing EITE customers on the utility's system. The statute allows that the utility may recover in a subsequent rate case or through a rider mechanism any costs of providing the rate, including any reduced revenues. Offering an EITE rate presents a situation where current rates have already been established in a previous rate case based on the current load and expected revenue from that EITE customer at full rates. Subsequently providing service under the EITE statute, with no load growth for that customer, results in lost revenue for the utility. These lost revenues may be recovered from other customers after the fact, essentially as a surcharge to current rates. The discussion here is in no way meant to question the benefits of providing service under the EITE statute; we note this example here only to highlight that our proposed ratemaking treatment for new load on the system is different than providing a negotiated rate for current system load.

In contrast, our request for ratemaking treatment of the CRR value associated with the data center does not impact current rates, and we do not request recovery of any additional costs from customers at this time. Rather, we seek to ensure ratemaking in a future rate case appropriately accounts for the CRR value going forward. For all the reasons described in this filing, and the analysis showing benefits for our customers, we believe our requested ratemaking treatment is appropriate and is a primary factor that will enable Google to locate its data center on our system.

CONCLUSION

The Becker data center proposal is reasonable and in the public interest. For these reasons, as well as the reasons discussed above, Xcel Energy respectfully requests that the Commission take the following actions:

- Approve the ESA;
- Approve the renewable sourcing plan;
- Approve cost recovery through the relevant ratemaking mechanism of the costs and expenses associated with obtaining the renewable energy required by the renewable sourcing plan throughout the term of the ESA;
- Approve the CRR Agreement;
- Approve the requested ratemaking treatment for the difference between the negotiated rate under the ESA and CRR Agreement and the standard rate;
- Approve amendments to the CRR Tariff;
- Approve the IA; and
- Approve the requested ratemaking treatment of Xcel Energy's costs associated with the facilities used to provide electric service to the Becker data center at transmission voltage.

Dated: January 10, 2019

Northern States Power Company

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Dan Lipschultz	Commissioner
Matt Schuerger	Commissioner
Katie J. Sieben	Commissioner
John A. Tuma	Commissioner

IN THE MATTER OF THE PETITION OF
NORTHERN STATES POWER COMPANY
FOR APPROVAL OF CONTRACTS FOR
PROVISION OF ELECTRIC SERVICE TO
GOOGLE'S MINNESOTA DATA CENTER
PROJECT

DOCKET No. E002/M-19-____

PETITION

SUMMARY OF FILING

Please take notice that on January 10, 2019, Northern States Power Company, doing business as Xcel Energy (Company), filed with the Minnesota Public Utilities Commission a Petition for approval of contracts that will enable the Company to provide electric service to a new data center to be owned and operated by a subsidiary of Google LLC in Becker, Minnesota.

GOOGLE DATA CENTERS

Economic Impact and
Community Benefit

APRIL 2018



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April 2018

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EXECUTIVE SUMMARY

As of the date of this report, six data center campuses provide the technological infrastructure necessary to power Google's operations in the United States. The data centers allow Google to provide search engine, cloud computing, and other Web-based services on which so much economic activity now depends. In addition to enabling Google to offer these services to people and businesses throughout the United States, the data centers also contribute significantly to job growth and income gains at both the national and state levels. Even more important are the economic contributions that Google data centers make to the communities in which they are located.

GOOGLE DATA CENTERS



\$1.3 billion in
economic activity

\$750 million in
labor income

11,000 jobs

In 2016, Google data centers generated \$1.3 billion in economic activity, \$750 million in labor income, and 11,000 jobs throughout the United States. Included in the 11,000 jobs are an estimated 1,900 people directly employed on the data center campuses. This number is based upon the six data centers only and does not include any corporate jobs that support the data centers remotely (e.g., Bay Area, California). In addition, facilities on the data center campuses are regularly upgraded and expanded to meet growing demand and to incorporate the latest technologies. On average, this effort employs more than 1,100 construction workers across the six campuses each year.

Google data centers create economic opportunity well beyond the campus itself. On-campus activity is further supported by an external supply chain that employs nearly 3,500 additional workers. As those employed directly on campus and in the supply chain spend their wages, a further 4,700 jobs are supported in the wider consumer economy, for example, in retail and leisure establishments. In fact, when these channels are considered, each direct Google data center job is found to support an additional 4.9 jobs throughout the United States (for a national jobs multiplier of 5.9).

The employment impact of Google data centers is widespread at the state level and higher than is often supposed. In each state hosting a Google data center, job creation attributable to the data center is significant. In fact, when economic activity from all channels is considered, the jobs multiplier attributable to Google at the state level ranges from 3.3 in South Carolina to 4.6 in Georgia.

New analysis in this report finds that the opening of a Google data center has a significant benefit on the local economy. Through regression analysis, we found measurable local spillover effects within three years of the data center opening. These



Google's commitment to clean energy has spurred **\$2.1 billion** in new investment in renewable energy projects.

benefits include employment gains that went further than those directly connected to the data center campus as well as an increase in county residents holding a bachelor's degree. These results seem to suggest that the opening of a Google data center signals to out-of-county businesses and residents that new opportunities exist in that county (now that a Google data center has opened there).

Google's long-term commitment to take power from renewable energy sources has economic as well as environmental benefit. For example, Google's long-term contract commitments to renewable energy have resulted in \$2.1 billion of investment in eight renewable energy generation projects (wind and solar), to date. The construction phase of these projects required an estimated 2,800 direct jobs. The maintenance and operation of these eight renewable facilities now supports an estimated 520 ongoing jobs (when all channels are considered).

Beyond these measurable effects, the addition of a Google data center also ripples through local economies in other, less easily quantifiable ways. These are no less substantive in their positive impact on the lives of ordinary citizens living in data center communities. For example, Google partners with communities on workforce development and education initiatives that both prepare the current workforce for positions in the new economy and increase engagement with young women and minority students interested in science and math. Our report includes a series of case studies that explore these softer impacts on the counties and surrounding regions where Google data centers are located.

INTRODUCTION

Since 2006, Google has opened six U.S. data center campuses. Each is a state-of-the-art, world-class facility that enables the company to provide the search engine, cloud computing, and other Web-based services on which so much of the modern economy depends.

To date, the company has invested \$10.5 billion in these facilities.

FIGURE 1: Google Data Centers: \$10.5 Billion Invested to Date

Location	Year Opened	Total Investment (billions)
Wasco County, Oregon	2006	\$1.8
Douglas County, Georgia	2006	\$1.2
Caldwell County, North Carolina	2008	\$1.2
Berkeley County, South Carolina	2008	\$1.8
Pottawattamie County, Iowa	2008	\$2.5
Mayes County, Oklahoma	2008	\$2.0

Source: Google LLC

In this report, we examine the economic impact that has resulted from Google’s investment and operation of its data center campuses. Our findings are discussed at the national, state, and local levels and are organized as follows:

- **National Economic Impact:** Examines Google’s economic impact at the national level. We find, for example, that Google data centers support nearly 11,000 jobs throughout the U.S. economy.
- **State-Level Impact:** Explores Google’s economic impact in the six states where the data center campuses are located. Our findings demonstrate that the state jobs multipliers associated with Google data centers are higher than commonly supposed.
- **Local Spillover Effects:** Discusses the local community spillover effects that result in locations with a Google data center campus, including overall employment gains and an increase in the county-level college-educated workforce.
- **Renewable Energy Investment:** Examines the economic impact that has resulted from Google’s long-term commitment to take power from renewable energy sources.

METHODOLOGICAL INTRODUCTION: ECONOMIC IMPACT ANALYSIS

National, state, and renewable energy economic impact results were calculated using an input-output model. In making our calculations, we examined three categories of activity associated with each data center and then aggregated these categories to produce our total impact results. The three categories examined were operations, construction, and renewable.

Operations: This is the direct activity that occurs within the four walls of each data center, particularly wages, earnings, and activity of the data center employees. However, our calculations exclude all the production activity associated with manufacturing the information technology equipment utilized within each data center. The value of these equipment purchases is measured in the hundreds of millions of dollars at each data center, and so this decision to exclude the impacts associated with the manufacture of this equipment keeps our calculations conservative.

Construction: Each data center undergoes periodic expansion and renovation as Google updates its infrastructure to meet customer demand and integrate the latest technological advances. The construction figures presented reflect the average annual amount of (actual) construction activity that each data center has experienced since it opened. The impacts presented, therefore, are estimates based on the average amount of annual construction activity that occurs at each data center based on past experience. However, the actual construction pattern historically (and likely in the future), is for periodic bursts of very large-scale construction when major renovation or expansion is required. Therefore during peaks of actual construction, our estimates are low for that year, but in years with no construction, our estimates are high. On average, however, they are accurate estimates of the average

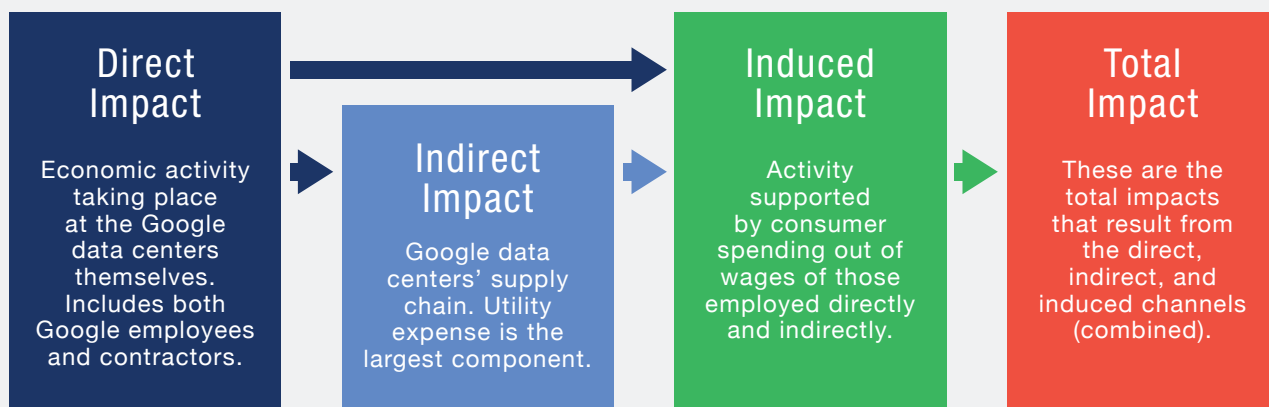
amount of construction activity expected to occur each year.

Renewable: Google’s long-term commitment to buying renewable power has resulted in the construction of seven wind projects and one solar project, each of which requires a limited number of personnel to operate and maintain. This section captures the economic impact of the ongoing operations and maintenance of these renewable generation facilities. (The one-time construction impacts associated with the construction of these facilities is separately reported in a later section.)

In describing our results, we refer to the following three “channels” of economic activity. These channels are intended to distinguish Google’s direct operations, those of its supply chain, and the wider impacts as the employees from the first two channels (Google and its suppliers) spend their wages in the broader economy. The three channels are defined as follows:

- 1. Direct:** These are the jobs and activity attributable directly to Google’s operational and capital expenditures.
- 2. Indirect:** These are the employment and value-added contributions that are supported through Google data centers’ supply chain (and in turn its suppliers).
- 3. Induced:** This is commonly referred to as the “multiplier effect” and is the economic benefit that results as Google employees and vendors (and their employees) spend their incomes in the local community.

The relationship among the direct, indirect and induced channels is depicted in the schematic below:



NATIONAL ECONOMIC IMPACT

GOOGLE DATA CENTERS SUPPORT JOBS, GDP, AND INCOME GROWTH

In this section, we examine how Google data centers contribute to jobs, GDP, and income at the national level. From Figure 2, we see that Google directly employs 1,900 workers in its six data centers.¹ In addition, in an average year, there are more than 1,100 construction workers engaged on site working to expand or upgrade the facilities on the six campuses (combined). Finally, we note the estimated 70 workers engaged in the operation and maintenance of the renewable energy facilities that were built on behalf of Google. Although these workers can all be considered “direct,” unless otherwise noted, in this report, we will consider only the 1,900 operations workers as “direct employees.”

Each of the three channels of activity (operations, construction, and renewable) has its own supply chain (i.e., the indirect column). From Figure 2, we see that the total employment in the supply chain that supports these three channels includes more than 3,400 jobs. Workers employed on campus, or in the supply chain, go on to spend their wages in the broader economy. As they do, we see that nearly 4,700 further jobs are supported (in the induced column).

FIGURE 2: Supporting 11,000 Jobs Nationwide

	Direct	Indirect	Induced	Total
Operations	1,900	2,620	3,510	8,030
Construction	1,140	600	950	2,690
Renewable	70	210	240	520
Total	3,110	3,430	4,700	11,240

Source: Oxford Economics, IMPLAN

¹ Operational information regarding Google data centers is largely confidential. For example, precise employment counts are not routinely disclosed publicly by the company. To complete our analysis, Google provided Oxford Economics with sufficient information to allow us to calculate economic impact results accurately. However, in presenting our findings, we include as direct employment numbers only what the company has previously disclosed publicly about employment at each location. This adjustment in presentation has no effect on any impact calculation herein reported, except of course on the direct employment figures themselves. In our opinion, this presentation accommodation does not result in any overstatement of economic impact, nor to our knowledge does it result in any overstatement of actual employment on any of the data center campuses. For a more complete discussion on personnel calculations, please see Appendix A (Economic Impact Methodology).

Figure 3 provides detail on the \$1.3 billion contribution made by the data centers to national GDP. Seventy percent of this benefit is attributable to the operations of the data centers themselves, with the balance split between the ongoing construction activity and renewable energy program. In the next section, we will examine how this benefit is distributed among the states hosting data center campuses.

FIGURE 3: Contributing \$1.3 Billion to GDP

	GDP (\$millions)			
	Direct	Indirect	Induced	Total
Operations	\$200	\$413	\$317	\$930
Construction	\$83	\$63	\$86	\$232
Renewable	\$119	\$23	\$21	\$163
Total	\$402	\$499	\$424	\$1,325

Source: Oxford Economics, IMPLAN

The \$1.3 billion in added GDP is not just an abstract concept. It results in \$750 million in additional income that brings widespread benefit to workers throughout the economy (see Figure 4).

FIGURE 4: Generating \$750 Million in Income

	Income (\$millions)			
	Direct	Indirect	Induced	Total
Operations	\$179	\$200	\$182	\$561
Construction	\$64	\$39	\$49	\$152
Renewable	\$11	\$15	\$12	\$38
Total	\$254	\$254	\$243	\$750

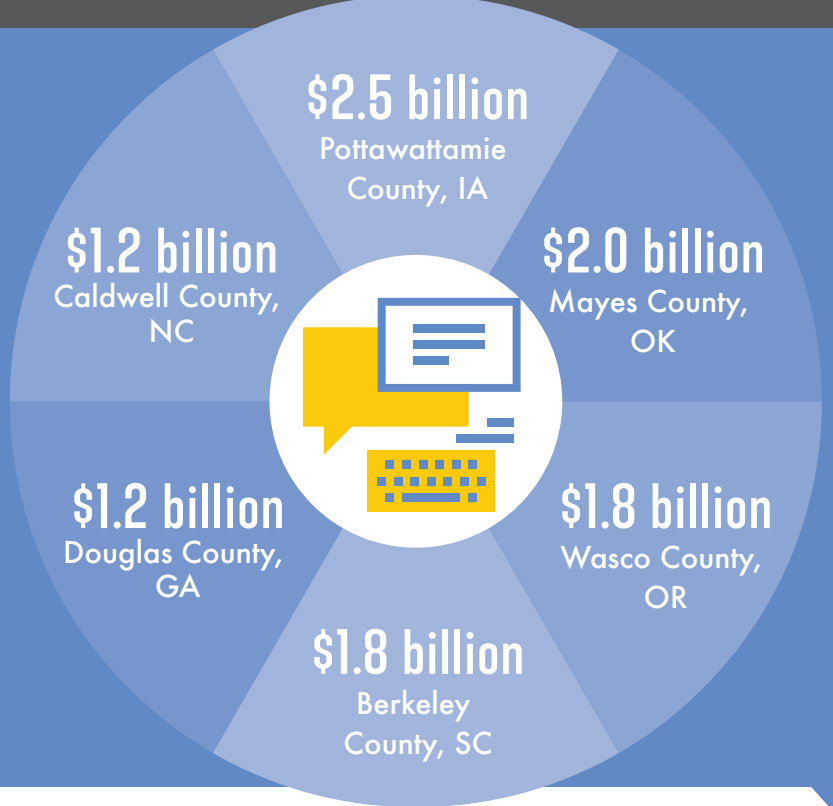
Source: Oxford Economics, IMPLAN
 (some totals do not add due to rounding)

CENTERS OF VALUE

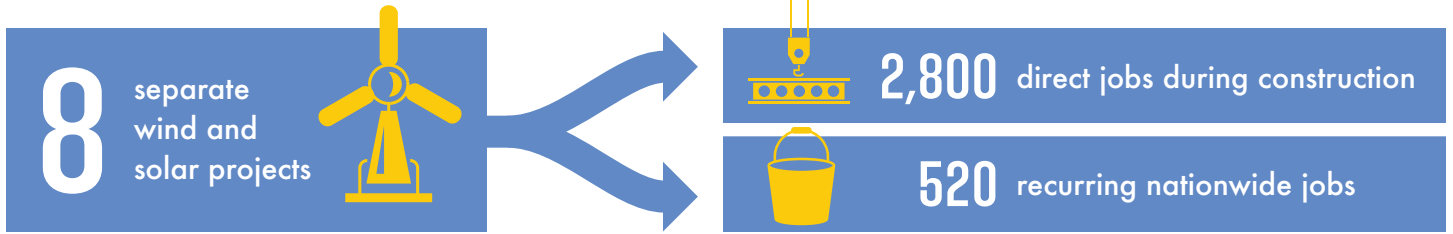
How six Google campuses spur economic growth



Google has invested **\$10.5 billion** equipping data centers to deliver its state-of-the-art search engine, cloud computing, and Web-based services...



...and spurred **\$2.1 billion** in renewable energy generation projects.



These Google data centers generate significant income and economic activity for the communities around them...

\$750 million
in labor income



\$1.3 billion
in economic activity



...and have created **11,000 jobs** throughout the United States.





Google's GDP multiplier is large because wages at the data centers are high and the supply chain is large.

EXAMINING WIDER IMPACTS IN THE ECONOMY

In this section, we examine the national jobs multiplier associated with the data centers and then turn our attention to how the economic impact previously described spreads from the data center campus to the broader economy.

Multipliers: Multipliers are a commonly used measurement for comparing the economic impacts of different industries. Figures 2 and 3 provide us with the information needed to calculate both the jobs and GDP multiplier for the Google data centers, and the precise methodology for making this calculation is included in the footnote below.²

The result of this calculation is that Google data centers (at the national level) have a jobs multiplier of 5.9 and a GDP multiplier of 6.6 when all recurring impacts are considered. In Figure 5 we compare these multipliers to those of other industries.

FIGURE 5: Google's Multipliers Compared to Other Industries

Description	Multipliers	
	Jobs	GDP
Computer storage device mfg	9.8	2.7
Electronic computer mfg	8.9	2.6
Semiconductor machinery mfg	6.8	3.6
Google data centers (operations, recurring construction and renewable)	5.9	6.6
Scientific research and development services	4.0	2.9
Legal services	2.5	2.0
Gambling industries (except casino hotels)	2.3	2.4

Source: Oxford Economics, IMPLAN

Scientific and legal services are included in Figure 5 to allow comparison to typical business service industries. Gambling was included given its high profile in many local economic development efforts. From this comparison, we see that in terms of multipliers, the data centers have a greater economic impact than either relatively well-paying professional service industries or more commonly recruited economic development projects.

Electronic computer and semiconductor manufacturing are each included in our comparison because these are important industries in the Google supply chain. In addition, their inclusion in Figure 5 helps illustrate an important point regarding the conservative nature of our impact

² Jobs multiplier equals total jobs supported by Google data centers from all channels (11,240) divided by the number of Google direct jobs (1,900), which equals 5.9. The GDP multiplier is the total GDP supported by Google data centers from all channels (\$1,325 million) divided by the direct GDP contribution of data center operations (\$200 million), which equals 6.6. The same methodology is used in calculating the state multipliers presented in the next section. It is important to note the inclusion of ongoing construction impacts in our multiplier calculations. In traditional multiplier calculations, construction would not be included. The decision to include recurring construction and renewable impacts in the multiplier calculation is intended to capture the recurring nature of this activity at Google data center campuses. When considering only the operations channel, Google's multipliers are still high (4.2 jobs and 4.6 GDP).

calculations. As previously noted, Google invests billions of dollars-worth of equipment in each data center campus. As seen in Figure 5, the jobs multipliers (and hence economic impacts) associated with the manufacturing of this equipment are quite large. However, none of this extra economic impact is included in our results. Specifically, we excluded all impact associated with the manufacturing of computer, telecom, or other equipment placed into service at the data centers. This was done to keep our results conservative and to make sure that our impact calculations only measure the contribution of the data center campuses themselves.

It is also interesting to note that Google’s GDP multiplier (6.6) is higher than that of any of the other industries presented. This is a function of the relatively high wages associated with many of the data center positions and the high contribution of economic activity associated with the Google supply chain.

How Economic Impact Spreads: As economic activity spreads from the data center campuses through the external supply chain and then to the broader economy, two things happen:

1. The economic impact grows larger as direct, indirect, and induced channels are considered. Each channel feeds on the previous one(s).
2. The industries that benefit from the economic impact become more diverse as the economic impact moves toward the broader economy.

FIGURE 6: Measuring How Google’s Impact Spreads

	GDP (millions)				Labor Income (millions)				Employment			
	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total	Direct	Indirect	Induced	Total
Natural Resources and Mining	\$0	\$33	\$9	\$43	\$0	\$17	\$6	\$24	0	173	111	284
Construction	\$83	\$5	\$4	\$92	\$64	\$4	\$3	\$71	1,143	65	57	1,266
Manufacturing	\$0	\$40	\$36	\$77	\$0	\$22	\$17	\$39	0	303	226	529
Trade, Transport, and Utilities	\$119	\$217	\$79	\$416	\$11	\$81	\$46	\$138	70	864	955	1,890
Information Technology	\$200	\$30	\$21	\$251	\$179	\$15	\$9	\$203	1,900	128	80	2,109
Financial Activities	\$0	\$50	\$120	\$170	\$0	\$17	\$33	\$50	0	304	560	864
Professional and Business Services	\$0	\$78	\$44	\$123	\$0	\$69	\$36	\$105	0	990	589	1,580
Education and Health Services	\$0	\$0	\$59	\$59	\$0	\$0	\$54	\$54	0	4	957	961
Leisure and Hospitality	\$0	\$16	\$28	\$43	\$0	\$11	\$18	\$29	0	399	684	1,083
Other Services	\$0	\$9	\$18	\$27	\$0	\$7	\$17	\$24	0	116	439	555
Government	\$0	\$21	\$4	\$25	\$0	\$10	\$3	\$14	0	90	39	129
Total	\$402	\$500	\$424	\$1,326	\$254	\$254	\$243	\$750	3,113	3,438	4,698	11,249

Source: Oxford Economics, IMPLAN
 (some totals do not add due to rounding)

Figure 6 provides a description of how the economic impact grows and then spreads throughout more industries as we move from direct (on campus), to indirect (supply chain), and then to the broader economy (induced).

Examining the employment columns in Figure 6 helps demonstrate how impact both increases and spreads as different channels are added.

- When just the *direct channel* is considered, we see most of the on-campus (direct) jobs are in either information technology (1,900) or construction (1,143) industries.
- When the *supply chain* (indirect) is considered, we see big jumps in trade and utilities (864) and professional and business services (990).
- By the time *induced channel* (broad economy) is considered, both leisure and hospitality (684) and education (957) show large gains in the employment that is supported by Google.

In fact, when all channels are considered we note that less than 20% of the more than 11,000 jobs supported by Google data centers are even in the information technology industry. The economic impact is both large and widespread.



CREATING THE FUTURE

How Google supports the next-generation economy in data center communities

THE greatest value of landing a Google data center may come from seeding future economic growth and diversification in regions that need a boost. Google's impact on its host communities starts with construction spending and data center jobs, but the ripple effects include broad-based workforce development, new revenue streams, and a reputation as a good place to do

business, says Deborah Murray, executive director at the Caldwell County Economic Development Commission in Lenoir, North Carolina.

When Google arrived a decade ago, the town was struggling with the loss of furniture jobs, which had sustained its economy for generations. Since then, the unemployment rate has plummeted, unused industrial square footage has decreased more than 90%, and median household income growth outpaced the rest of the

state in 2016. The economy has diversified to include a meaningful advanced manufacturing component, and the workforce has reskilled to support what Ms. Murray calls "twenty-first and twenty-second century jobs."

"I'm not going to tell you that Google is responsible for all of this, but they helped us learn about our capabilities," Ms. Murray says. "The world has changed, and Google helped us change with it."

One catalyst has been a program at Caldwell Community College, created after local leaders visited Google's Mountain View, California, headquarters. The initiative began with specialized training for potential data center employees and has expanded to support numerous other industries. "It gives us the ability to respond when we are courting a company with particular needs or when a company needs certain skills to fill a new-economy position," she says. "Google allowed us to demonstrate what we can do with that kind of specialized training." The school also offers popular online courses in cloud software.

Another benefit to the state as a whole is attracting companies looking to locate their own data centers. "Google gave us the credibility to compete," Ms. Murray says. In recent years, the region around Caldwell County—from the Appalachian foothills to the Piedmont—has become known as the North Carolina Data Center Corridor, a hotspot for major facilities operated by some of the biggest names in technology and other industries.

Similar stories are playing out in other Google communities. In Iowa, Google sparked a big-company, data-center boom with its Council Bluffs operation, and the same dynamic is in effect along the Columbia River in Oregon, where Google's first data center opened in The Dalles in 2006. These operations generate franchise fee revenue for host communities and some also share Google's focus on renewable energy, helping to spur growth in that industry state-wide.

Meanwhile, in Pryor Creek, Oklahoma, a rising generation is finding jobs in a rural area that must compete for talent with nearby Tulsa and other cities. Scott Fry is Director of Workforce Development at Pryor Creek's MidAmerica Industrial Park, home to a Google data center and dozens of other companies.

With local school districts bolstered by Google support and the park's visibility enhanced by its high-profile tenant, students are increasingly aware of opportunities in technical fields and the possibility of good work at Google or neighboring businesses. "We are getting great feedback from employers, with more young talent entering the workforce right out of high school," Mr. Fry says. "Having Google in our community is a game changer."

"Google gave us the credibility to compete."

—Deborah Murray
Executive Director,
Caldwell County Economic
Development Commission
Lenoir, NC

"More young talent [is] entering the workforce... Having Google in our community is a game changer."

—Scott Fry
Director, Workforce Development
MidAmerica Industrial Park
Pryor Creek, Oklahoma

STATE-LEVEL IMPACT

Google data centers significantly contribute to the growth of jobs, income, and economic activity in each state where a campus is located, and in this section we examine key state-level economic impacts. (More detail on the economic impact in each of these states is included in Appendix B).

FIGURE 7: Key State-Level Economic Impact Results

State	(millions)		Jobs (Direct)	Jobs (Total)	Jobs Multiplier
	GDP	Income			
Georgia	\$121	\$80	250	1,147	4.6
Iowa	\$189	\$111	400	1,743	4.4
North Carolina	\$103	\$61	250	1,024	4.1
Oklahoma	\$203	\$99	400	1,598	4.0
Oregon	\$67	\$46	200	696	3.5
South Carolina	\$112	\$72	400	1,335	3.3

Source: Oxford Economics, IMPLAN

GDP, INCOME, AND JOBS

In general, the size of state economic impacts varies based on the data center size and the amount of Google’s supply chain that is located in the state:

- *The bigger the data center, the bigger will be the economic impact, other things being equal.* For example, the bigger the data center, the bigger will be the economic impact found in that state’s direct channel.
- *The greater the concentration of the data center’s supply chain that is located in the state, the greater will be the economic impact in that state.* More specifically, the bigger the in-state supply chain, the bigger will be the economic impact found in that state’s indirect channel.

Differences in either of these variables get amplified as we consider the induced effects occurring in the broader economy. That is because as either the amount of in-state direct or indirect economic activity increases, the greater is the amount of induced in-state economic

activity that occurs in the state as well. Stated simply, the more workers that are located in the state (whether direct employees or those in the supply chain), the more likely it is that economic benefit will spill over to the broader (local) economy as these workers spend their wages on home improvement, health care, or entertainment close to where they live.

As was true at the national level, state jobs multipliers are useful as a common denominator with which to compare impacts between states because they show how many additional jobs are supported by each Google worker located in that state, regardless of the size of the data center itself. State jobs multipliers are almost always smaller than national jobs multipliers because, by definition, the state jobs multipliers capture only the economic activity associated with that state, whereas the national jobs multiplier captures all the economic activity occurring within the entire country. Although smaller than Google's national jobs multiplier of 5.9, we see from Figure 7 (see previous page) that Google's state jobs multipliers are all significant and range from 3.3 in South Carolina to 4.6 in Georgia (with the variance again largely attributable to the size of the data center and the amount of supply chain activity located in the state).



LOCAL CONTROL

Google's approach to philanthropy and community involvement

GOOGLE manages its local philanthropic involvement with a light touch, but that does not mean the company shies away from difficult issues. In Berkeley County, South Carolina, for example, the 2015 shooting of Walter Scott by a police officer and the 2015 massacre at Charleston's Emanuel African Methodist Episcopal Church led Google to grant the College of Charleston Foundation \$125,000 to found the Race and Social Justice Initiative (RSJI) at the college's Avery Research Center for African American History and Culture. This organization's goal is to promote public awareness and dialogue about race and socioeconomic issues in Charleston and beyond. In 2016, Google increased its support and donated \$200,000.

Local control matters. "We don't want to run a grassroots initiative like this with corporate oversight. Google trusts us to run with it," says Daron Lee Calhoun II, RSJI coordinator. "It's a blessing for Google to run this the way they do."

Mr. Calhoun has been associated with the college since 2012 and has been heavily involved in social justice activism protests since then.

The results of the center's work have been notable. "We've held international conferences" Mr. Calhoun says. Nationally known speakers at RSJI events have included author Ta-Nehisi Coates and Dr. Lonnie G. Bunch III, director of the Smithsonian's National Museum of African American History and Culture.

The Avery Research Center is just one example of Google's presence in the community. Among various volunteer efforts in the region, the Black Googler Network—one of the many affinity groups within Google—traveled to Charleston to participate in an educational event that included lectures, seminars, and

even mock interviews with black students at the college. Google also has granted funds to nonprofits including MUSC Children's Hospital, SC Together (formerly the South Carolina Association of Nonprofit Organizations), and the Coastal Community Foundation of South Carolina. And Google's employees have become deeply rooted in other community initiatives since the data center opened in 2007.

Much of the work done by Google in its host cities and towns across the country is done through the GoogleServe program, an initiative that encourages Google employees to get involved in community life.

Google workers in Council Bluffs, Iowa, have cleaned and refurbished computer labs and re-imaged, installed, and inventoried computer equipment at local high schools. The work makes a difference, said David Fringer, the Council Bluffs Community School District's chief technology officer, in an article in a local newspaper.

"They will have pushed us weeks ahead of what we could have done without their help. This has become a tradition with this Google team."

The same energy is on display in other Google communities. In The Dalles, Oregon, for example, employees have volunteered with a wide range of organizations including Home at Last Humane Society, Wonderworks Children's Museum of the Gorge, and the Celilo Cancer Center.

Google's presence in communities where it has built data centers has sparked meaningful, ongoing change. "We would not be able to do the work that we do without the monetary and educational support from Google, period," Mr. Calhoun says.

"It's a blessing for Google to run this the way they do."

—Daron Lee Calhoun II,
Avery Research Center for
African American History and Culture

LOCAL SPILLOVER EFFECTS

Google has located each of its six data center campuses in small population counties located some distance away from a major city center. Oxford Economics set out to test the hypothesis that the opening of a Google data center in a small county, some distance from a major city, would improve the economic trajectory of that county relative to a comparable group of counties that did not host a data center campus. What our research uncovered was that, in fact, for most of the counties hosting a Google data center, there was measurable improvement at the county level in overall employment or education, measured by the number of county residents holding a bachelor's degree. These local spillover effects were measured independently of the economic impact calculations previously described.



Most counties quickly experience a jump in employment or an increase in college-educated residents shortly after a Google data center opens.

To calculate these effects, Oxford Economics utilized econometric techniques (regression analysis) that are more fully described in Appendix C. Regression work allows us to compare the economic experience in counties where Google opened a data center to a comparable group of counties that does not host a Google data center during a given time period. The counties share many key characteristics and then are divided between those where Google opened a data center and those where it did not. The experiences of the two groups of counties following the date that the data center opened, are then compared. The group of counties selected for comparison to those hosting a data center is called the “control group.” In selecting our control group, we considered population, state tax policy, electric rates, proximity to a large city, as well as several other variables.³

Our initial goal was to test a range of socioeconomic variables, including home prices, retail activity, and concentrations of technology workers. Data limitations forced us to drop these variables from consideration. However, available data did allow us to examine employment and educational level of county residents, and for each of these variables, positive local spillover effects attributable to the Google data center campus were found. One process by which an anchor institution (like the Google data center) functions as a magnet that attracts even more economic activity is called an agglomeration effect and that might partially explain the source of some of this additional growth.⁴

- ³ The selection of the control group of counties is discussed more thoroughly in Appendix C. Here it is important to note that the control group constitutes a selection of counties that shared key characteristics with the counties that now host a Google data center, except that in fact Google did not open a data center in any of those counties.
- ⁴ The concept of agglomeration economies dates to the 1890s, when Alfred Marshall's agglomeration theory sought to explain the geographic co-location, or “clustering,” of similar industries and often competing businesses. These agglomeration economies generate a local pool of skilled talent, local supplier linkages, and local knowledge spillovers. Quite possibly, some of the employment gains are attributable to these effects, while other gains might be in totally unrelated fields such as restaurants or hotels.

EMPLOYMENT EFFECT

Using our regression framework, counties hosting a Google data center were found to have experienced more job growth than the matched control counties. The impact began approximately one to two years prior to opening of the data center (presumably due to site acquisition, construction, and related activities) and continued throughout the period that we tested (three years beyond the opening date). As a group, the counties where the data center opened before 2008 had greater additional job growth than those that opened in 2008.⁵

- Counties where the data center opened *before 2008* experienced employment gains of 2,405.
- Counties where the data center opened *in 2008* experienced employment gains of 580.

We speculate that the national recession that followed the data center openings in 2008 stunted the additional economic benefit for these locations.

When counties were examined individually, it was discovered that counties located near a large city experienced the greatest local spillover effect in employment. For example, in Figure 8 we see that the largest net employment impacts were in the counties that are a part of a metropolitan statistical area (i.e., the data center counties whose economies are most tightly integrated with that of a major city). Metropolitan statistical areas (MSAs) are regions defined by the US government. They comprise a group of counties with a high population density at its core.

FIGURE 8: Counties with Significant Employment Gains

County	Part of MSA	Employment Gain
Berkeley (SC)	Charleston	2,378
Pottawattamie (IA)	Omaha-Council Bluffs	1,185
Douglas (GA)	Atlanta	5,595

Source: Oxford Economics

The results were less significant (both statistically and in terms of employment gains) for the other three counties not shown in Figure 8, none of which is a part of a MSA. Counties near a major city captured more local spillover effect than did those that are too far removed from a major city to be included in the metropolitan statistical area.

⁵ As previously reported in Figure 1, the counties where Google opened its data center prior to 2008 are Wasco, Oregon, and Douglas, Georgia. The other four counties all opened in 2008 (Berkeley, South Carolina; Pottawattamie, Iowa; Caldwell, North Carolina; Mayes, Oklahoma).



Counties hosting a Google data center quickly become more attractive locations for college-educated workers.

EDUCATION EFFECT

Our analysis found that counties hosting a data center experienced a 1.1 percentage point increase in the number of residents with a four-year college degree (four years after the data center opened), relative to the control group. For technical reasons having to do with the availability of data and appropriate control groups, this impact was only measured in three counties. Based on the average population of these counties over this period (2005-2015), this average 1.1 percentage point increase in bachelor’s degree holders is equivalent to the following numbers of additional residents holding a four-year college degree than would have been experienced had Google not opened a data center in that county.

FIGURE 9: Counties with Extra Degree Holders

County	Extra Degree Holders
Douglas (GA)	895
Berkeley (SC)	1,234
Caldwell (NC)	620

Source: Oxford Economics

It is possible that a similar benefit was experienced in the other three counties, however, we lacked the data to properly test the hypothesis in those counties.

Given that these results are for four years past the opening of the Google data center, it cannot reasonably be inferred that Google has encouraged more residents to pursue a four-year college degree. Rather, this finding suggests that for whatever reason, the counties hosting a Google data center quickly became more attractive locations for college-educated workers to buy homes or take up residence.

Taken together, these results demonstrate that counties hosting a Google data center experience exciting local spillover benefits that are in addition to the employment gains attributable to the data center itself. **Importantly, these measured benefits occurred within a few years of the data center opening. Moreover, it is reasonable to suspect that these benefits persist and grow over time. In fact, some of the anecdotal evidence reported in our case studies seems to support this hypothesis.**

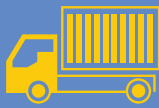
BEYOND THE WALLS

How Google campuses help communities thrive

Google drives job growth across different sectors

INDUSTRIES WITH NEW JOBS SUPPORTED BY GOOGLE DATA CENTERS:

1,890
JOBS



Trade, transport, & utilities

1,580
JOBS



Professional & business services

1,083
JOBS



Leisure and hospitality

After Google arrives, more jobs follow

Within three years of a data center opening, employment increases attributable to the Google arrival by county include:



5,595 Douglas County (GA)

2,378 Berkeley County (SC)

1,185 Pottawattamie County (IA)

Job creation numbers are for first three years only; Oxford Economics expects job growth to persist and grow over time.

“The world has changed, and Google helped us change with it.”

—Deborah Murray,
Executive Director, Caldwell
County Economic Development
Commission (Lenoir, NC)

The data centers also raise education levels in the area

+1.1%

increase in college-educated residents within four years of Google’s arrival.



Top 3 increases in number of college graduates by county, first four years after data center opening:

1,234 Berkeley County (SC)

895 Douglas County (GA)

620 Caldwell County (NC)

RENEWABLE ENERGY INVESTMENT

RENEWABLE CAPITAL INVESTMENT OVERVIEW

To satisfy its commitment to renewable energy, Google has made long-term contractual commitments that have resulted in \$2.1 billion of investment in the construction of eight new renewable energy generation facilities. In addition to the obvious and important environmental benefit, these investments also resulted in one-time construction activity that generated additional economic impacts.

FIGURE 10: One-Time Renewable Construction Impact

	(millions)		
	GDP	Income	Employment
UNITED STATES			
Direct	\$242.5	\$168.8	2,878
Indirect	\$114.6	\$70.0	1,020
Induced	\$198.1	\$113.4	2,195
Total	\$555.2	\$352.2	6,093
IOWA			
Direct	\$36.1	\$27.7	491
Indirect	\$7.2	\$4.5	81
Induced	\$13.3	\$7.1	181
Total	\$56.6	\$39.3	753
NORTH CAROLINA			
Direct	\$14.0	\$10.5	233
Indirect	\$4.4	\$2.7	49
Induced	\$6.8	\$3.6	87
Total	\$25.2	\$16.8	369
OKLAHOMA			
Direct	\$91.9	\$71.3	1,263
Indirect	\$24.9	\$15.3	266
Induced	\$36.1	\$20.4	486
Total	\$152.9	\$107.0	2,015

Source: Oxford Economics, IMPLAN

To calculate the one-time economic impact that resulted from the construction of the eight renewable projects Google invested in, Oxford Economics first estimated the percentage of the \$2.1 billion investment that went toward construction activity including site preparation, on site construction, and other related on site activity. Based on published sources, we estimate that nearly 15% of the investment cost went toward construction activity.⁶ The balance of the investment was assigned to equipment costs, and these were excluded from our impact calculations.

As described in Figure 10, construction of these eight projects created an estimated 2,878 construction jobs (one-time, temporary job creation). Moreover, nearly 70% of those construction jobs were in a state that also hosts a data center (Iowa, North Carolina, Oklahoma). They are not included in the impact calculations presented elsewhere in the report because these jobs are temporary.

RECURRING IMPACTS FROM RENEWABLE OPERATIONS

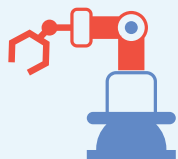
The eight renewable energy projects are sizable operations that require full-time personnel to operate and maintain. According to Google, 70 full-time workers are estimated to be engaged in operation and maintenance, and, as shown in Figure 11, these 70 workers in turn support further (recurring) economic impact.

FIGURE 11: Recurring National Impact (Renewable)

Renewable (Recurring)	(millions)		Employment
	GDP	Income	
Direct	\$119	\$11	70
Indirect	\$23	\$15	214
Induced	\$21	\$12	236
Total	\$163	\$38	520

Source: Oxford Economics, IMPLAN, Google LLC

6 Reategui, Sandra, and Hendrickson, Stephen. "Economic Development Impact of 1,000 MW of Wind Energy in Texas." National Renewable Energy Laboratory. Technical Report: NREL/TP-6A20-50400.



ROBOTS, Wi-Fi, AND MATH

Google's focus on education

AT the first Georgia Gravity Games in 2010, roughly 20 teams of students showed up with cars they had designed and built over the preceding months, ready to try for the fastest run down Church Street in Douglasville, Georgia. By 2017, 60 teams were competing—at least one from every school in the county, including teams with kids from populations

“The Gravity Games have grown so popular that they are approaching the town’s capacity. The street is only so big.”

—Chris Thompson, Associate Director of Technology and Student Activities, Georgia Institute of Technology

that are traditionally underrepresented in engineering and technology. In fact, the program’s growth has been so rapid that Chris Thompson, associate director of technology and student activities for the Center for Education, Integrating Science, Mathematics, and Computing (CEISMC) at the Georgia Institute of Technology and manager of the program, jokes that

it is becoming difficult to accommodate all the participants. “The street is only so big.”

The core goal of the Gravity Games, funded by Google and run by Google, Georgia Tech, and the city of Douglasville, is to spur interest in science, technology, engineering, and math (STEM) among young people in the community. The initiative has accomplished that and more: participating students have not only received hands-on engineering experience through their school clubs, but also have had the opportunity to interact with Georgia Tech students and faculty. One group of participating students even went on to join a robotics team.

The Gravity Games also take place in North Carolina—part of a partnership between Google, Appalachian State University, the University of North Carolina, and the city of Lenoir. And Google funds other types of educational programs around the country, including robotics camps

in Mayes County, Oklahoma; a competition to build the strongest wind turbine in The Dalles, Oregon; and a program, called Rolling Study Halls, that supplies Wi-Fi and educational resources to students in rural communities on their long bus rides to school.

Berkeley County, South Carolina, one area that has implemented these Rolling Study Halls, reports noticeable improvements among students from the program. According to Diane Driggers, chief information and technology officer for the Berkeley County School District, students who participate are more likely to understand and complete their homework, more engaged with the curriculum, and better behaved on the bus.

Perhaps most importantly, the program provides Internet access to students in the rural district, many of whom may not have it at home.

Bringing these types of opportunities to underserved communities is the thread running through all of Google’s education initiatives, including Gravity Games, which promotes STEM engagement among minorities and females.

“We have a diverse group participating, including at least one all-female team” Mr. Thompson says. Last year, Georgia Tech sponsored three teams from low-income areas, and local businesses support underrepresented parts of the region. The Douglas County Chamber of Commerce also works to connect businesses with teams that need sponsorships. The hope is that some of these young students will be interested enough in what they see at the Gravity Games to pursue further education and careers in related disciplines. Some may even end up at Georgia Tech.

Students who participate in a Google-funded mobile study hall are more likely to understand and complete homework, engage with the curriculum, and behave on the school bus.

—Berkeley County, SC, School District

CONCLUSION

Google data centers make significant contributions to jobs, incomes, and economic growth at the national, state, and community levels. Nationwide, the six data center campuses support more than 11,000 jobs and \$1.3 billion in economic activity. These are conservative results because only activity occurring on the data center campuses was considered. Excluded from our calculations, for example, were all of the Google personnel and operations that support the data centers but are not located on a data center campus (e.g., all personnel based in California). Moreover, we did not consider the manufacturing impacts associated with the equipment placed into service at the data centers. We used this conservative methodology to more clearly illustrate how Google data centers directly impact the communities and states where they are located.

Google data centers provide important local spillover effects to their host communities. Within a few years of a data center opening, most communities experienced employment gains (beyond those at the data center itself) or increases in the number of college-educated residents. According to research conducted by Oxford Economics, each of these benefits was spurred by Google's decision to locate a data center in that community. Moreover, it is likely that these benefits persist and continue to grow beyond the first few years of the data center's opening. In fact, the case studies included in this report provide anecdotal evidence from the communities themselves that supports this hypothesis.

Google's commitment to long-term renewable energy has spurred economic gains in addition to the environmental benefits that have resulted from the program. Specifically, because of Google's clean energy commitment, \$2.1 billion was invested in eight new renewable energy projects. The construction of these projects created more than 2,800 (temporary) construction jobs. Moreover, the ongoing operation and maintenance of these projects requires the support of an estimated 70 full-time positions.

Google's \$10.5 billion investment in and the operation of its six data center campuses bring significant direct benefit to the communities in which they operate by increasing jobs, income, and economic activity at the state and local levels. Moreover, most counties experience further increases in employment growth or the number of college-educated residents because of Google's decision to open a data center there. **As reported by the communities themselves, Google's presence helps ensure that the next generation of community residents are prepared to meet tomorrow's challenges and opportunities.**

APPENDIX A: ECONOMIC IMPACT METHODOLOGY

DISCUSSION OF KEY ASSUMPTIONS

Reliance on the IMPLAN⁷ default profile: While a great deal of real-world detail specific to each data center could be incorporated into the model, this was not the approach followed. Instead, in most instances, Google data centers were assumed to resemble the national default profile for data centers that is ultimately derived from U.S. Bureau of Economic Analysis (BEA) data (NAICS code 518210). The Google project team expressed concern that too much specific data regarding data center inputs might reveal too much proprietary information regarding the operation of the data center. Only two pieces of information specific to each data center were used as the basis of our calculations: employment and utility consumption. These two metrics allowed us to make reasonable assumptions regarding the size of the data center. Our assumptions regarding employment at each data center were explicitly reported in the results of our calculations as the direct employment at that data center. Our assumption regarding electricity consumption, although explicit in our calculations, was not explicitly reported out. Instead, the estimated electricity consumption was an important, but not the only, contributor to the indirect impacts that were reported for each data center.

Construction at data centers: We were provided with the cumulative construction hours spent at each data center from inception to the present. These hours were annualized over the life of each data center to give us an average amount of people-years spent on construction throughout the life of the data center. Again, this was used along with sector-specific economic data from BEA to develop a profile of the economic activity (we assumed half the hours were construction of new commercial structures and half repair and maintenance of existing commercial structures). This average annual construction activity was then treated as a recurring input at each data center. This approach was utilized because we know that there are bursts of significant construction activity from time to time at each data center, and we wanted to capture an average, understanding that some amount of this activity will occur annually.

⁷ IMPLAN is an input-output modeling system used to build models at various levels of geography, including national and state. It allows for adjustable assumptions of supply-chain connections and leakages from survey input data and improved accuracy of assumptions. All data are presented in 2016 values. IMPLAN is widely used and recognized by government organizations, nonprofits, economic development organizations, workforce planners, education institutions, and consultants across the U.S. and Canada.

Personnel: We were provided full-time equivalents (FTEs) and payroll information on the direct employees assigned to each data center and the annual amount spent on third-party contractors who are also assigned to each data center. In our model and the results that we report, we treated the contract and the direct Google employees in the same way to reflect that, taken together, we have an accurate estimate of the number of full-time workers employed in each data center.

Renewable: We were provided the one-time overall development cost of each renewable generation facility (seven wind and one solar). We obtained a detailed breakout of a typical wind farm development (see footnote 6). Overall, the breakout was as follows:

- Equipment 78.8%
- Materials (e.g., construction) 13.2%
- Labor 5.5%
- Other (e.g., easements, legal) 2.5%

Labor was embedded in other categories as well, and when all sources were considered, 14.9% of overall project costs were attributed to labor (and this constitutes the most input used in our renewable energy calculations). All equipment was treated as imported.

Equipment: 100% of all business personal property (e.g., computer equipment) placed in service within the four walls of each data center was assumed to be imported. Notably, this is at odds with the IMPLAN default tables, which would suggest that local (U.S.) domestic manufacturing content for many of these components is more than 50%. This assumption likely reduces the national impacts by substantially more than it does most of the states involved. However, in the IMPLAN default tables, most equipment is considered capital rather than operational spending anyway, and so this had a relatively minor effect (given that we did not scale up the model to reflect Google's actual investment in this category). Overall, our key objective in disregarding any domestically produced manufacturing content was to keep results conservative and limited to only activity occurring with the data center facility.

MORE ON THE INPUT-OUTPUT MODEL

Oxford Economics utilized IMPLAN software to calculate the economic impacts presented in these notes. The IMPLAN model was adjusted somewhat to match Google's specific direct and supply chain spend, using what IMPLAN refers to as an analysis by parts. For example, our assumptions regarding 0% domestic content, described above, needed to be reflected in the input model tables used to calculate results.

For each state with a data center, separate models were run for operational impacts and for construction impacts. Where applicable, models were also run for renewable energy operations and construction.

- *The operational model* was based primarily on Google-provided data on employment and compensation of Google employees and additional compensation for contract employees. Contractors were assumed to have the same average salary and were added to the employment totals of direct employees. This employment number was the primary scaler used to estimate data center size. We generally used IMPLAN defaults for data centers (i.e. on a per-worker basis) with the following exceptions:
 - The amount of estimated electricity Google reports using is much greater than the IMPLAN defaults for this industry. We thus scaled up the energy consumption.
 - Because contract workers were treated as direct employees, we also excluded inputs from employment services. Finally, we excluded spending on leasing of intangible assets.
- As discussed above, total construction hours were annualized, converted to FTEs, and ultimately to IMPLAN employment. *Construction impacts* were scaled to construction employment and were split evenly between construction of new commercial structures and maintenance and repair of nonresidential structures.
- *Renewable energy operational impacts* were based on energy employment provided by Google. FTE employment was adjusted to IMPLAN employment and used as a scaling factor for solar (NAICS 221114) or wind (NAICS 221115) power as appropriate.
- *Renewable energy construction impacts* were calculated by assigning a percentage of overall capital spending to construction activities on the renewable plant, as discussed earlier in this report.⁸ This was applied to NAICS 233240, construction of new power and communication structures.

⁸ Per Google's request, the precise percentages applied is withheld from publication to protect confidential data.

APPENDIX B: STATE ECONOMIC IMPACT DETAIL

GEORGIA

The Douglas County data center supports 1,147 jobs throughout Georgia. The state jobs multiplier attributable to the Douglas County data center is 4.6.⁹

FIGURE 12: Georgia Impact Summary

	(millions)		
	GDP	Income	Jobs
GEORGIA RECURRING IMPACTS			
OPERATIONS			
Direct	\$38.7	\$34.0	250
Indirect	\$38.6	\$20.5	338
Induced	\$29.8	\$16.2	372
Operations Total	\$107.1	\$70.7	960
CONSTRUCTION			
Direct	\$6.7	\$5.1	105
Indirect	\$3.1	\$1.9	34
Induced	\$3.8	\$2.1	47
Construction Total	\$13.6	\$9.1	186
ALL CHANNELS			
Direct	\$45.4	\$39.1	355
Indirect	\$41.7	\$22.4	372
Induced	\$33.5	\$18.3	420
All Channels Total	\$120.6	\$79.8	1,147

Source: Oxford Economics, IMPLAN

⁹ The jobs multiplier is calculated by dividing the number of jobs from the “All Channels Total” (1,147) by “Direct” jobs listed in the Operations Channel (250). In this case, that division produces the jobs multiplier of 4.6. In the sections that follow, the jobs multiplier will be stated without repeating this methodology. Recurring construction is included in the state-level impact calculations since we know that the construction activity being captured is specific to each location and represents the average annual amount of construction activity occurring at that location.

IOWA

The Google data center in Pottawattamie County supports 1,743 jobs throughout Iowa. The state jobs multiplier attributable to the Pottawattamie County data center is 4.4. In addition, Google’s long-term commitment to take power from renewable energy projects has resulted in the investment of \$330 million in the construction of a wind farm in Iowa.

FIGURE 13: Iowa Impact Summary

	(millions)		
	GDP	Income	Jobs
IOWA RECURRING IMPACTS			
OPERATIONS			
Direct	\$52.7	\$42.8	400
Indirect	\$51.7	\$22.8	380
Induced	\$27.3	\$14.6	371
Operations Total	\$131.7	\$80.2	1,151
CONSTRUCTION			
Direct	\$22.8	\$18.7	341
Indirect	\$7.0	\$4.5	87
Induced	\$9.6	\$5.1	131
Construction Total	\$39.4	\$28.3	559
ALL CHANNELS			
Direct	\$90.6	\$62.7	741
Indirect	\$60.3	\$28.3	488
Induced	\$37.8	\$20.3	514
All Channels Total	\$188.7	\$111.3	1,743

Source: Oxford Economics, IMPLAN

NORTH CAROLINA

The Google data center in Caldwell County, North Carolina, supports a total of 1,024 jobs throughout the state. When all channels of economic activity are considered, Google’s data center jobs multiplier in North Carolina is 4.1. In addition, Google’s long-term commitment to take power from renewable energy projects has resulted in new investment of \$140 million in the construction of a solar farm in North Carolina.

FIGURE 14: North Carolina Impact Summary

	(millions)		
	GDP	Income	Jobs
NORTH CAROLINA RECURRING IMPACTS			
OPERATIONS			
Direct	\$26.0	\$22.5	250
Indirect	\$39.8	\$16.5	270
Induced	\$20.0	\$10.8	257
Operations Total	\$85.8	\$49.8	777
CONSTRUCTION			
Direct	\$8.0	\$6.5	143
Indirect	\$3.8	\$2.3	44
Induced	\$4.5	\$2.4	57
Construction Total	\$16.3	\$11.2	244
ALL CHANNELS			
Direct	\$34.6	\$29.3	393
Indirect	\$43.6	\$18.7	314
Induced	\$24.6	\$13.3	317
All Channels Total	\$102.8	\$61.3	1,024

Source: Oxford Economics, IMPLAN

OKLAHOMA

In Mayes County, Oklahoma, the Google data center supports 1,598 jobs throughout the state. The jobs multiplier in Oklahoma attributable to the Google data center is 4.0. In addition, Google’s long-term commitment to take power from renewable energy projects has resulted in \$845 million in new investment for the construction of four wind farms in Oklahoma.

FIGURE 15: Oklahoma Impact Summary

	(millions)		
	GDP	Income	Jobs
OKLAHOMA RECURRING IMPACTS			
OPERATIONS			
Direct	\$33.2	\$31.5	400
Indirect	\$48.4	\$22.2	322
Induced	\$22.7	\$12.8	305
Operations Total	\$104.3	\$66.5	1,027
CONSTRUCTION			
Direct	\$16.2	\$13.1	256
Indirect	\$6.8	\$4.2	77
Induced	\$7.2	\$4.1	98
Construction Total	\$30.2	\$21.4	431
ALL CHANNELS			
Direct	\$105.6	\$48.4	656
Indirect	\$63.1	\$31.8	487
Induced	\$33.8	\$19.1	455
All Channels Total	\$202.5	\$99.3	1,598

Source: Oxford Economics, IMPLAN

OREGON

The Google data center in Wasco County, Oregon, supports 696 jobs throughout Oregon. The data center’s job multiplier is 3.5.

FIGURE 16: Oregon Impact Summary

	(millions)		
	GDP	Income	Jobs
OREGON RECURRING IMPACTS			
OPERATIONS			
Direct	\$22.7	\$20.7	200
Indirect	\$20.8	\$10.3	176
Induced	\$14.5	\$8.4	195
Operations Total	\$57.8	\$39.4	571
CONSTRUCTION			
Direct	\$4.7	\$3.8	71
Indirect	\$1.8	\$1.2	23
Induced	\$2.3	\$1.3	31
Construction Total	\$8.8	\$6.3	125
ALL CHANNELS			
Direct	\$27.4	\$24.6	271
Indirect	\$22.5	\$11.5	199
Induced	\$16.8	\$9.8	226
All Channels Total	\$66.7	\$45.9	696

Source: Oxford Economics, IMPLAN

SOUTH CAROLINA

Google's data center in Berkeley County supports 1,335 jobs throughout the state of South Carolina, and the jobs multiplier in South Carolina is 3.3.

FIGURE 17: South Carolina Impact Summary

	(millions)		
	GDP	Income	Jobs
SOUTH CAROLINA RECURRING IMPACTS			
OPERATIONS			
Direct	\$29.3	\$27.3	400
Indirect	\$37.6	\$17.5	293
Induced	\$19.4	\$10.4	268
Operations Total	\$86.3	\$55.2	961
CONSTRUCTION			
Direct	\$14.6	\$10.3	227
Indirect	\$5.2	\$3.2	66
Induced	\$5.8	\$3.1	81
Construction Total	\$25.6	\$16.6	374
ALL CHANNELS			
Direct	\$43.9	\$37.6	627
Indirect	\$42.8	\$20.7	359
Induced	\$25.2	\$13.5	349
All Channels Total	\$111.9	\$71.8	1,335

Source: Oxford Economics, IMPLAN

APPENDIX C: REGRESSION METHODOLOGY

DIFFERENCE-IN-DIFFERENCES MODEL

To estimate the impact of Google data centers on local (county-level) economies, we used a Difference-in-Differences (DiD) econometric approach. We take two regions (A and B) with similar characteristics such that even if their magnitude is different and changes over time, the differences between them are stable over time (parallel trends assumption). At a given time, a Google data center locates in region A (we call that a treated region) and not in region B (control region) and changes the growth of region A. The difference in the post-event differences in growth rates between the two regions reflects the growth impact of the data center.¹⁰ In other words, only counties that were unaffected by a Google data center were eligible for inclusion in the control group.

HOW THE CONTROL GROUP WAS CHOSEN

Finding two identical regions to replicate a perfectly controlled experiment is difficult because regions can vary in dimensions that are not measurable or observable. If these non-measurable or observable features of the control vary systematically to those of the treated, then the impacts found will not be due to the event we are examining but to these unaccounted differences. Below, we describe the elements in our approach that ensure our estimation of the economic impact is as robust as possible.

The regions used in the control group were selected to ensure they are as similar as possible to the treated regions (regions where data centers are located). The control group is designed to approximate counties that Google might select for a data center if the company were to undertake a site selection search today based upon the characteristics of counties previously selected. An examination of the existing county locations revealed several “rules” derived from publicly available data that were then applied to all counties in the lower 48 states. These rules were:

- Always locate in a state that allows sales tax exemptions for data center projects.
- Never locate more than 85 miles from a mid-to-large-sized metropolitan area.
- Never locate in a state with above average commercial electric rates.

¹⁰ Angrist, Joshua, and Pischke, Jörn-Steffen. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, 2009.

- Never locate in a state that is principally desert or abnormally dry (based upon average annual rainfall).
- Never locate in a county with more than 250,000 people.
- Never locate in a state that already hosts a Google data center.

Counties that satisfied these rules were then further screened to make sure that each had growth rates comparable (parallel) to the target counties. For that comparison, a five-year period in growth wages and employment before the data center opening was used.

FIGURE 18: County Selection Process



* G is calculated as the growth rate of treated counties between 2001 and 2005.

One important test to see whether the control group counties and the counties hosting a Google data center allow for a valid comparison is to inspect whether prior to the establishment of the Google data center, the growth patterns between these two groups were similar. This test was satisfactorily completed with growth rates found to be graphically parallel between the target and control groups.

AGGREGATED AND INDIVIDUAL COUNTY ANALYSIS

Our initial analysis grouped the treated counties by the date that the data center opened. One group included the counties where the data center opened prior to 2008; the second group consisted of the counties where the data center opened in 2008.

FIGURE 19: Year Data Center Opened

Data Center County	Year Opened	Intervention Year
Berkeley, SC	2008	2006
Pottawattamie, IA	2008	2006
Douglas, GA	2007	2005
Caldwell, NC	2008	2006
Mayes, OK	2008	2006
Wasco, OR	2006	2004

Source: Oxford Economics, Google LLC

The use of the two groups allowed for a comparison of the average of treated regions with the average of several control regions. The averaging of the growth rates before and after the presence of the data center also reduced the chance that we erroneously attributed the change in the growth rates to Google when it more likely was the consequence of some other event or shock (such as another simultaneous investment). The risk of this type of error is reduced because even if that is the case for one county, the effect should be averaged out when we look at the group's growth.

After completing our analysis of grouped counties, we turned to an examination of the treated counties individually. Individual county tests are trickier because this necessitates the selection of a control group appropriate to each specific target county. In some cases, that was not possible. In those instances, a synthetic control method was used instead of the difference-in-differences method.

The synthetic control method builds an artificial counterfactual using all the counties selected for the control group and assigning weights to each according to how similar it is to the target county before the data center was built. The trajectory of the target county is then compared to that of this synthetic control after the data center is built. To verify that any difference found is significant, we apply this synthetic control method to all the counties (treated and control) and check whether the post-data center trajectory of the treated is significantly different from that of the controls.

OUTCOME VARIABLES AND THE INTERVENTION PERIOD

Using data from the Bureau of Labor Statistics (Quarterly Census of Employment and Wages) for the years 2001-2015, the following outcome variables were examined for each county:

- Total annual wages
- Annual average of quarterly employment
- Annual average weekly wages

Of these, significant results were established for annual wages and annual average of quarterly employment. Arithmetically, it is not surprisingly that having found a positive influence on the level of employment, we also found a positive influence on the level of overall wages. Other things being equal, if more people are working in a county, then one would expect that cumulative county wages would also increase.

Activity surrounding the actual opening of the data center starts well in advance of the opening date. For example, site assemblage, acquisition, infrastructure preparation, and construction activity of the facility itself all obviously occur in advance of opening. In our statistical examination, we found that an intervention period beginning two years prior to the official opening year satisfactorily accounted for this pre-opening activity.

ROBUSTNESS TESTS

The following methods were used to verify robustness of results:

- **Placebo Tests:** Two types of placebo tests were successfully completed, as follows:
 1. We re-estimated the model by falsely modifying the time when the data centers were built. The DiD model based on the made-up events should not find any significant differences between the treatment and control groups unless there are any events not related to the data centers present in the data. The placebo tests are important for giving us confidence that the control and treated groups (counties) were not experiencing differences in growth rates prior to the intervention period.
 2. Prior to estimating the impact of the data centers, we graphically plotted and inspected growth trend lines to visually validate the parallel trends assumption.
- **Dummy Regressions:** We regressed the growth of wage or employment on a dummy equal to one if a county is in the treated group for the period prior to the intervention. This is to check whether the counties in the treatment and control groups are growing at statistically similar rates with respect to the variables of interest prior to Google's decision to operate in the sites. We want the dummy in that regression to be insignificant for the two groups (treated and control) to establish that there are no statistically significant differences.
- **Estimation Procedure:** We estimated the model using fixed effects. Fixed effects estimation controls for the bias that time-invariant characteristics might cause.



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INFORMATION REQUIRED BY MINN. R. 7829.1300

A. Summary of Filing

A one-paragraph summary of the filing accompanies this Petition pursuant to Minn. R. 7829.1300, subp. 1.

B. Service on Other Parties

Pursuant to Minn. Rule 7829.1300, subp. 2, the Company has served a copy of this filing on the Minnesota Department of Commerce, Division of Energy Resources and the Minnesota Office of the Attorney General – Residential Utilities and Antitrust Division. A summary of the filing has been served on all parties on the enclosed miscellaneous electric service list.

C. General Filing Information

Pursuant to Minn. R. 7829.1300, subp. 3, the Company provides the following information.

1. Name, Address, and Telephone Number of Filing Party

Northern States Power Company doing business as:
Xcel Energy
414 Nicollet Mall
Minneapolis, Minnesota 55401
(612) 330-5500

2. Name, Address, Electronic Address, and Telephone Number of Filing Party Attorney

Ryan Long
Lead Assistant General Counsel
Xcel Energy
414 Nicollet Mall, 401 – 8th Floor
Minneapolis, Minnesota 55401
(612) 215-4659
ryan.j.long@xcelenergy.com

3. Date of Filing

The date of this filing is January 10, 2019. The Company requests that the Electric Service Agreement, Competitive Rate Response Rider Agreement (CRRA), and proposed tariff modifications become effective upon Commission approval.

4. Statute Controlling Schedule for Processing Filing

The Company seeks a number of approvals for the Data Center Project in the accompanying Petition; however, only several of these requests are accompanied by statutory timelines for processing the filing. In the Petition, the Company seeks a modification of the rates, terms, and conditions of its existing Competitive Rate Response Rider (CRR) Tariff. Pursuant to Minn. Stat. § 216B.162, subd. 3, the Commission may change a competitive rate schedule through a miscellaneous or general rate filing by the utility. Under the Commission's rules, the proposed tariff change discussed in the Petition falls within the definition of a miscellaneous filing under Minn. R. 7829.0100, subp. 11, since no determination of Xcel Energy's general revenue requirement is necessary. Minnesota Rule 7829.1400, subparts 1 and 4, permit comments in response to a miscellaneous filing within 30 days of filing, with reply comments due 10 days from the expiration of the original comment period.

The Company also seeks Commission approval of the attached CRRA to apply the CRR negotiated rate discussed in the Petition. Review of this agreement is governed by Minn. Stat. § 216B.162, subd. 7, pursuant to which the Commission is to approve, modify, or reject the proposed CRR negotiated rate within 90 days.

5. Utility Employee Responsible for the Filing

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Rates and Regulatory Affairs
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6. Description of the Filing, Impact on Rates and Services, Impact on Any Affected Person, and Reasons for the Filing

The Company's Petition requests that the Commission approve the proposed contracts and other rates, terms, and tariff revisions needed to enable the Company to provide electric service to a proposed new data center to be owned and operated by a subsidiary of Google LLC in Becker, Minnesota. A more comprehensive description of the filing, its impact on rates and services, its impact on any affected person, and the reasons for the filing are included in the Company's Petition.

D. Miscellaneous Information

Pursuant to Minn. Rule 7829.0700, Xcel Energy requests that the following persons be placed on the Commission's official service list for this proceeding:

Ryan Long
Lead Assistant General Counsel
Xcel Energy
414 Nicollet Mall, 401 – 8th Floor
Minneapolis, Minnesota 55401
ryan.j.long@xcelenergy.com

Lynnette Sweet
Regulatory Administrator
Xcel Energy
414 Nicollet Mall, 401 – 7th Floor
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Please submit any information requests in this proceeding to Ms. Sweet.



IMPLAN ECONOMIC IMPACT ANALYSIS

OCTOBER 17TH, 2018

IMPLAN Model/Assumptions

- Economic impact estimates conducted for both construction and operations phases of a potential data center in Sherburne County.
- \$500M project (\$250M construction/\$250M equipment)
- Impacts are estimated for both the county only and for the state.
- Upon construction is completion, the facility will directly employ 50 people.
- This increase in economic activity in the county will lead to an increase in local and statewide spending by both the company and their employees.



CONSTRUCTION PHASE

Construction Phase – Sherburne County

- The proposed data center facility includes construction of \$250 million, completed in 2019.
- This amount was entered into the IMPLAN model, in the new commercial construction industry, which is the best available activity for data center construction.
- NOTE: the project is also expected to purchase \$250 million in equipment. Because this focuses on the economic contribution of the data center itself, these purchases are excluded from the economic impact estimates. **This also ensures a conservative economic impact estimate.**

Construction Phase – Sherburne County

• Outputs—Sherburne County Only

- In total, economic activity associated with these construction expenditures in 2019 includes:
 - **\$186.1 million in gross domestic product (GDP, which corresponds to the size of the county economy)**
 - **\$140.9 million in labor income**
 - **2,642 job-years**
 - All of these impacts are considered in the model as temporary, one-time impacts.

Table 1: Sherburne County Construction Phase Impacts (in nominal 2019 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$140.0	\$115.2	1,931
Indirect Effect	16.1	10.7	227
Induced Effect	30.0	15.1	484
Total Effect	186.1	140.9	2,642

Note: Numbers may not sum due to rounding.

Source: Analysis conducted with IMPLAN Online. For more information, see the “About Economic Impact” section.

Prepared by: Economic Analysis, Minnesota Department of Employment and Economic Development.

Construction Phase – Statewide

- The proposed data center facility includes construction of \$250 million, completed in 2019.
- In this case the model is constrained to a direct jobs impact of 1,931 jobs to match the Sherburne County result. This amount was entered into the IMPLAN model, in the new commercial construction industry, which is the best available activity for data center construction.
- NOTE: the project is also expected to purchase \$250 million in equipment. Because this focuses on the economic contribution of the data center itself, these purchases are excluded from the economic impact estimates. This also ensures a conservative economic impact estimate.

Construction Phase – Statewide

• Outputs—Sherburne County Only

- In total, economic activity associated with these construction expenditures in 2019 includes:
 - **\$267.9 million in gross domestic product (GDP, which corresponds to the size of the county economy)**
 - **\$196.3 million in labor income**
 - **3,265 job-years**
 - All of these impacts are considered in the model as temporary, one-time impacts.

Table 2: Statewide Construction Phase Impacts (in nominal 2019 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$149.8	\$122.8	1,931
Indirect Effect	39.1	26.3	362
Induced Effect	79.1	47.2	972
Total Effect	267.9	196.3	3,265

Note: Numbers may not sum due to rounding.

Source: Analysis conducted with IMPLAN Online. For more information, see the “About Economic Impact” section.

Prepared by: Economic Analysis, Minnesota Department of Employment and Economic Development.



OPERATIONAL PHASE

Operational Phase – Sherburne County

- **Inputs—Sherburne County Only**
- The proposed facility includes 50 new jobs in data processing, hosting and related services.
- These jobs are estimated to pay an average of \$80,000 annually.
- These impacts are for the first year of operations in 2020; but, assuming that the company maintains the level of activity at the data center, these operations phase estimates are expected to be ongoing into future years.

Operational Phase – Sherburne County

- **Outputs—Sherburne County Only**
 - The total economic activity created by these new jobs in 2020 includes:
 - \$7.6 million in GDP (which corresponds to the size of the county economy)
 - \$6.1 million in labor income
 - 110 jobs
 - These impacts are expected to persist as long as the direct jobs persist.

Operational Phase – Sherburne County

- Outputs—Sherburne County Only**

Table 3: Sherburne County Operations Phase Impacts (in nominal 2020 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$4.4	\$4.2	50
Indirect Effect	1.8	1.2	39
Induced Effect	1.3	0.7	21
Total Effect	7.6	6.1	110

Note: Numbers may not sum due to rounding.

Source: Analysis conducted with IMPLAN Online. For more information, see the “About Economic Impact” section.

Prepared by: Economic Analysis, Minnesota Department of Employment and Economic Development.

Operational Phase – Statewide

- **Inputs—Statewide**
- The proposed facility includes 50 new jobs in data processing, hosting and related services.
- These jobs are estimated to pay an average of \$80,000 annually.
- These impacts are for the first year of operations in 2020; but, assuming that the company maintains the level of activity at the data center, these operations phase estimates are expected to be ongoing into future years.

Operational Phase – Statewide

- **Outputs—Statewide**

- The total economic activity created by these new jobs in 2020 includes:
 - \$14.4 million in GDP (which corresponds to the size of the state economy)
 - \$10.5 million in labor income (~\$64K/job)
 - 162.7 jobs
- These impacts are expected to persist as long as the direct jobs persist.

Operational Phase – Statewide

- Outputs—Statewide**

Table 4: Statewide Operations Phase Impacts (in nominal 2020 dollars)

Impact Type	GDP (\$millions)	Income (\$millions)	Jobs
Direct Effect	\$4.6	\$4.3	50
Indirect Effect	5.6	3.7	61.0
Induced Effect	4.2	2.5	51.7
Total Effect	14.4	10.5	162.7

Note: Numbers may not sum due to rounding.

Source: Analysis conducted with IMPLAN Online. For more information, see the “About Economic Impact” section.

Prepared by: Economic Analysis, Minnesota Department of Employment and Economic Development.

Economic Impact Analysis/Methodology

- In what is often called either a ripple effect or multiplier effect, increased economic activity triggers additional spending. The total economic impact of the economic activity is the sum of three effects: the direct effect (the change in activity that stimulates other activity, in this case construction or operations phases of the proposed data center), the indirect effect (resulting from industries purchasing from other industries due to increased demand) and induced effects (resulting from the expenditure of new household income generated by the direct and indirect effects). All of the economic impact estimates included in this memo include both “direct” economic activity and “indirect and induced” economic activity and generated because of construction and operation of the data center in Sherburne County.
- This analysis used the IMPLAN model, a widely used input-output model. Given the proposed level of output or employment for new economic activity in a particular industry, it is possible to measure total impacts on total local output, value added, employment, and compensation paid to employees. IMPLAN is best viewed as a short-term impact estimate. In this case, IMPLAN was used to estimate both county and statewide impacts. The county impacts refer only to the impact on Sherburne County. The statewide impacts refer to impacts throughout the state of Minnesota as a result of the project.

EXECUTION VERSION

RETAIL ELECTRIC SERVICE AGREEMENT

By and Between

NORTHERN STATES POWER COMPANY

and

HONEYCRISP POWER LLC

Dated as of
December 21, 2018



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EXECUTION VERSION

RETAIL ELECTRIC SERVICE AGREEMENT

THIS RETAIL ELECTRIC SERVICE AGREEMENT and all schedules and exhibits hereto (this “**Agreement**”), is made as of this 21st day of December 2018 by and between NORTHERN STATES POWER COMPANY, a Minnesota corporation (“**Company**”), and HONEYCRISP POWER LLC, a Delaware limited liability company (“**Customer**”).

RECITALS

A. Company is a public utility as defined under Minnesota law with an assigned service territory whereby it has the exclusive right to provide electric service at retail to each and every present and future customer in its assigned service area.

B. Customer and/or its Affiliate will construct, own, and operate a Data Center within Company’s assigned service area, with a potential investment of more than five hundred million dollars (\$500,000,000) over the life of the project.

C. Customer and/or its Affiliate would not construct, own, or operate the proposed Data Center within Company’s designated service area but for Company’s commitment to serve the Data Center using renewable energy and capacity resources under the terms of this Agreement and as provided for under the CRRA.

NOW, THEREFORE, for and in consideration of the mutual promises hereinafter contained, Customer and Company hereby agree to and with each other as follows:

ARTICLE I
DEFINITIONS

1.1 **Definitions.** For the purposes of this Agreement, capitalized terms not otherwise defined herein or in the Tariff have the following meaning:

1.1.1 “**Affiliate**” means with respect to a corporation, partnership, or other entity, each such other corporation, partnership, or other entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such corporation, partnership, or other entity.

1.1.2 “**Ancillary Agreements**” means the CRRA and the Interconnection Agreement.

1.1.3 “**Annual Minimum Charge**” means those amounts set forth in Schedule 1.1.3.

1.1.4 “**Annual Period**” means each calendar year beginning on and including January 1st and ending on and including December 31st of any such calendar year during the Initial Term. The first (1st) Annual Period will commence on and include the January 1st immediately following the Electric Service Commencement Date.



EXECUTION VERSION

1.1.5 “Annually” means each of: (a) the Service Commencement Stub Year; (b) each Annual Period during the Initial Term of this Agreement; and (c) the Service Termination Stub Year.

1.1.6 “Applicable Law” means all duly promulgated applicable federal, state, and local laws, statutes, treaties, codes, ordinances, regulations, rules, certificates, decrees, judgments, directives, or judicial or administrative orders, permits, and other duly authorized actions of any Governmental Authority having jurisdiction over a Party or the Parties, as applicable, their respective facilities and/or the respective services they provide.

1.1.7 “Business Day” means any Day that is not a Saturday, a Sunday, or a federal holiday.

1.1.8 “Capacity” means the net electric generation output capability of applicable generation resource(s) or batteries.

1.1.9 “Clean Capacity” means Capacity that is: (i) renewable and carbon-free, and that is Incremental New Generation when required to be added pursuant to Section 5.2 of this Agreement; (ii) existing or new Capacity associated with hydroelectric generation and/or pump storage, provided that such existing Capacity represents no more than thirty percent (30%) of the Clean Capacity; and/or (iii) provided by battery storage that is Incremental New Generation when required to be added pursuant to Section 5.2 of this Agreement. Clean Capacity does not necessarily include, although it may, Capacity associated with Clean Energy.

1.1.10 “Clean Energy” means renewable, carbon-free, electrical energy that is Incremental New Generation and whose RECs are eligible for registration, trading, and/or use under the Renewable Energy Tracking System. Clean Energy does not necessarily include, although it may, the electrical energy associated with Clean Capacity. Clean Energy includes, without limitation, the Initial Clean Energy.

1.1.11 “Clean Energy RECs” means the RECs associated with Clean Energy.

1.1.12 “Clean Generation” means Clean Capacity and/or Clean Energy, as applicable in context, all as identified on Exhibit B.

1.1.13 “Commercial Operation” means the earlier of: (a) Customer declaring that the Data Center has been fully tested and commissioned and is physically capable of receiving Service under this Agreement consistent with Good Utility Practice; or (b) the Data Center has achieved an average measured demand of at least [REDACTED] MW in three consecutive calendar months prior to the Electric Service Commencement Date.

1.1.14 “Commercial Operation Date” means the date upon which the Data Center reaches Commercial Operation.

1.1.15 “Commercially Reasonable” or “Commercially Reasonable Efforts” means, with respect to any action to be taken or attempted by a Party under this Agreement, the level of effort in light of the facts known to such Party at the time a decision is



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made that: (a) can reasonably be expected to accomplish the desired action at a reasonable cost; (b) is consistent with Good Utility Practices; and (c) takes into consideration the amount of advance notice required to take such action, the duration and type of action, and the competitive environment in which such action occurs.

1.1.16 “**Company**” has the meaning set forth in the introductory paragraph of this Agreement.

1.1.17 “**Company Facilities**” has the meaning set forth in Section 4.3.1 of this Agreement.

1.1.18 “**Conditions Precedent**” means receipt of (a) the Contemplated Regulatory Approvals on terms consistent with this Agreement; and (b) the Non-Jurisdictional Regulatory Approvals on terms consistent with this Agreement.

1.1.19 “**Contemplated Regulatory Approvals**” means a final non-appealable order of the MPUC providing any and all approvals deemed necessary under Applicable Law or prudent by Company in its sole discretion to effectuate the terms of this Agreement without modification; including, without limitation: (a) approval of this Agreement; (b) approvals for appropriate rate treatment of Company’s costs of the Company Facilities as may be requested by Company; (c) approvals for the appropriate rate treatment of the Clean Generation as may be requested by Company now and in the future; (d) any approvals as are provided for under the CRRA including, without limitation, of the ratemaking treatment of the CRR Rate Value; (e) approval of the Interconnection Agreement; and (f) any other approvals of the MPUC in relation to this Agreement or any Ancillary Agreement that Company deems necessary or prudent in Company’s sole discretion.

1.1.20 “**CRR Rate Value**” has the meaning set forth in the CRRA.

1.1.21 “**CRRA**” means that certain Competitive Response Rider Agreement entered into by the Parties on a date even to the Effective Date.

1.1.22 “**Customer**” has the meaning set forth in the introductory paragraph of this Agreement.

1.1.23 “**Customer Facilities**” means the Data Center and all appurtenant facilities necessary for Customer to take Service at transmission voltage – including without limitation those facilities necessary for Customer to interconnect with Company’s system at transmission voltage, any backup generation, and any water supply and water treatment facilities, as applicable.

1.1.24 “**Customer’s Load Forecast**” means a forecast of the Data Center’s expected forward looking load for the remainder of the Initial Term in increments of not less than a calendar year, that Customer believes in good faith is a reasonably accurate forecast of the Data Center’s expected load for the period at issue based on information Customer has available at the time the forecast is developed but that is non-binding on Customer. Notwithstanding any other provision of this Agreement, Customer will provide Customer’s Load Forecast to Company no later than January 3rd of any given calendar year.



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1.1.25 “Data Center” means Customer’s facilities used for, *inter alia*, the processing, storage, and distribution of data for which Service is provided by Company to and accepted by Customer under this Agreement located (or to be located) on the real property identified in Exhibit A (as may be amended) to this Agreement.

1.1.26 “Day” means a calendar day.

1.1.27 “Effective Date” means the date first written above.

1.1.28 “Electric Service Commencement Date” means the earlier of the Commercial Operation Date or the Required Commercial Operation Date.

1.1.29 “ERO” means the Electric Reliability Organization certified by FERC pursuant to Section 215 of the Federal Power Act or any successor organization. The certified ERO as of the Effective Date is MISO.

1.1.30 “Extension Negotiations” has the meaning set forth in Section 3.2.

1.1.31 “FERC” means the Federal Energy Regulatory Commission, or any successor entity.

1.1.32 “Force Majeure” means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, order, regulation, or restriction imposed by governmental military or lawfully established civilian authorities, or any other cause beyond a Party’s control. A Force Majeure event does not include an act of negligence or intentional wrongdoing by a Party, but may include such an act of a third person if such act causes or results in a circumstance that otherwise qualifies. Neither Company nor Customer will be considered in default as to any obligation under this Agreement if prevented from fulfilling the obligation due to an event of Force Majeure. However, a Party whose performance under this Agreement is hindered by an event of Force Majeure will make all Commercially Reasonable Efforts to perform its obligations under this Agreement.

1.1.33 “Good Utility Practice” means any of the practices, methods, standards, and acts engaged in or approved by a significant portion of the applicable segment of the electric utility industry during the relevant time period, or any of the practices, methods, standards, and acts which, in the exercise of Commercially Reasonable judgment, in light of the facts known (or reasonably should have been known) at the time the decision was made, would have been expected to accomplish the desired result at a reasonable cost consistent with Applicable Law, standards, equipment manufacturer’s recommendations, good business practices, reliability, safety, environmental protection, economy, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to those practices, methods, standards, and acts generally acceptable or approved in the region, including those practices required by Federal Power Act Section 215(a)(4).

1.1.34 “Governmental Authority” means any federal, state, local, or other governmental regulatory or administrative agency, court, commission, department, board, or



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other governmental subdivision, legislature, rulemaking board, tribunal, or other Governmental Authority having jurisdiction over the Parties, their respective facilities, or the respective services that they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include Customer, Company, or any Affiliate thereof.

1.1.35 **“Guarantee Cap”** means [REDACTED] dollars [REDACTED], subject to any increase pursuant to Section 9.3 of this Agreement.

1.1.36 **“Guarantor”** means (a) where an Affiliate of Customer is providing a guaranty under this Agreement, meets each of the following requirements: (i) organized under the laws of the United States of America or any State thereof; (ii) capital and surplus of at least [REDACTED]; and (iii) a credit rating from one (1) of the following three (3) rating agencies: of at least [REDACTED] by S&P, [REDACTED] by Moody's, or [REDACTED] by Fitch; and (b) where a third party is providing a guaranty under this Agreement, meets each of the following requirements: (i) organized under the laws of the United States of America or any State thereof; (ii) capital and surplus of [REDACTED] and (iii) a credit rating from [REDACTED] of the following three (3) rating agencies: of at least [REDACTED] by S&P, [REDACTED] by Moody's, or [REDACTED] by Fitch.

1.1.37 **“Incremental New Generation”** means an electrical generating facility that is placed in service after the Regulatory Approval Date and is both (a) a new generating facility when placed in service; and (b) new to the generating fleet serving Company's Minnesota retail electric customers when placed in service. In furtherance of the foregoing, and not in limitation thereof, Incremental New Generation may also include, without limitation: (x) battery(ies), (y) Repowered Facilities, and (z) resources under contract for the purchase of power.

1.1.38 **“Initial Clean Energy”** means those renewable energy resources that Company intends to procure to meet its obligations with respect to Clean Energy under this Agreement that will be Incremental New Generation but may be contracted for or placed in-service prior to the Regulatory Approval Date. As of the Effective Date, Company believes that the Initial Clean Energy will be composed of three hundred (300) MW nameplate wind generation facilities under contract with Company. Company will provide a list of the resources (and provide regular updates) on Exhibit B identifying the Initial Clean Energy once it has been procured.

1.1.39 **“Initial Term”** has the meaning set forth in Section 3.1 of this Agreement.

1.1.40 **“Interchange Agreement”** means that certain Restated Agreement to Coordinate Planning and Operations and Interchange Power and Energy between Northern States Power Company (Minnesota) and Northern States Power Company (Wisconsin), as amended from time to time, or any successor agreement.



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1.1.41 “**Interconnection Agreement**” means that certain Interconnection Agreement for Retail Electric Service at Transmission Voltage dated as of the Effective Date by and between the Parties.

1.1.42 “**kV**” means kilovolts.

1.1.43 “**MISO**” means the Midcontinent Independent System Operator, Inc. or any successor entity.

1.1.44 “**MPUC**” means the Minnesota Public Utilities Commission, the regulatory agency having jurisdiction over the retail electric and gas service of Company in the State of Minnesota (including, without limitation, Service contemplated by this Agreement), or any successor entity.

1.1.45 “**M-RETS**” means the Midwest Renewable Energy Tracking System, or any successor entity.

1.1.46 “**MW**” means megawatts.

1.1.47 “**MWh**” means megawatt-hour.

1.1.48 “**NDPSC**” means the North Dakota Public Service Commission, or any successor entity.

1.1.49 “**Non-Jurisdictional Regulatory Approvals**” means final non-appealable order(s) of the NDPSC, SDPUC, and the FERC, as applicable, providing any and all approvals deemed necessary under Applicable Law or prudent by Company in its sole discretion to effectuate the intent of this Agreement without modification. Non-Jurisdictional Regulatory Approvals may include, without limitation, in Company’s sole discretion: (a) a final non-appealable order of the NDPSC approving either: (i) that the Clean Generation will not be utilized to serve Company’s North Dakota retail electric customers and appropriate ratemaking treatment to effectuate the same; or (ii) an Advanced Determination of Prudence pursuant to and as defined in Section 49-05-16 of the North Dakota Century Code for the Initial Clean Energy; (b) either (i) a final non-appealable order of the SDPUC approving that the Clean Generation will not be utilized to serve Company’s South Dakota retail electric customers and appropriate ratemaking treatment to effectuate the same; or (ii) no approvals of the SDPUC; and (c) a final, non-appealable order of FERC approving (or otherwise accepting for filing) either: (i) amendments to the Interchange Agreement to ensure that the Clean Generation and/or Clean Energy RECs will not be utilized to serve the retail electric customers of Company’s Affiliate in Wisconsin and Michigan and appropriate ratemaking treatment to effectuate the same; or (ii) appropriate ratemaking treatment under the Interchange Agreement for the Initial Clean Energy to ensure that the costs of the Initial Clean Energy are appropriately allocated to Company’s Affiliate providing retail electric service in Wisconsin and Michigan.

1.1.50 “**Notice to Construct**” has the meaning set forth in the Interconnection Agreement.



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1.1.51 “**Notice to Proceed**” has the meaning set forth in Section 4.1 of this Agreement.

1.1.52 “**Parties**” means Customer and Company, together.

1.1.53 “**Party**” means each of Customer and Company, separately.

1.1.54 “**Procurement Period**” has the meaning set forth in Section 5.1.2 of this Agreement.

1.1.55 “**Rate Schedule**” has the meaning set forth in Section 2.2.1 of this Agreement.

1.1.56 “**Regulatory Approval Date**” means the date all Conditions Precedent have been met.

1.1.57 “**RECs**” means all rights to non-energy and environmental attributes attributable to capacity available and/or energy generated by an energy generating facility, including without limitation environmental air quality credits, tags, and allowances created by virtue of any generating facilities environmentally favorable or renewable characteristics or attributes that are found to be eligible for registration, trading, and/or use under the regulations and requirements of the Renewable Energy Tracking System. For the avoidance of doubt, RECs need not have, although they may, those characteristics that would allow Company to retire such RECs consistent with Minnesota Statute Section 216B.1691.

1.1.58 “**Renewable Energy Tracking System**” means the entity which is recognized by the MPUC as tracking renewable energy certificates and other renewable energy attributes for compliance with applicable Minnesota law. The current Renewable Energy Tracking System is M-RETS.

1.1.59 “**Repowered Facilities**” means any refurbished, retrofitted, or otherwise modified generating facility previously existing as of the Effective Date, provided such refurbishment, retrofit, or other modification (a) is completed after the Regulatory Approval Date; (b) commenced at least ten (10) years after the facility was originally placed in service; (c) can meet the requirements to qualify for the production tax credit pursuant to 26 U.S.C. § 45 or the investment tax credit pursuant to 26 U.S.C. § 48; and (d) as agreed by the Parties in a Commercially Reasonable manner, such generating facility will consist of refurbished, retrofitted, replaced, or otherwise modified components such that the value of such new components will be not less than [redacted] percent [redacted]%) of the original value of the components.

1.1.60 “**Required Commercial Operation Date**” means the [redacted] anniversary of the Regulatory Approval Date.

1.1.61 “**Retiring Amount**” has the meaning set forth in Section 5.5.2.

1.1.62 “**Scheduled Commercial Operation Date**” means the date Customer expects the Data Center to reach Commercial Operation as set forth in the Notice to Proceed.



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1.1.63 “SDPUC” means the South Dakota Public Utilities Commission, or any successor entity.

1.1.64 “Service” means retail electric service provided to Customer under Minnesota law, the Tariff, and this Agreement all under the jurisdiction of the MPUC.

1.1.65 “Service Commencement Stub Year” means the period of time between the Electric Service Commencement Date and the first (1st) Annual Period, including the Electric Service Commencement Date.

1.1.66 “Service Termination Stub Year” means the period of time between the final Annual Period and the termination of Service pursuant to this Agreement.

1.1.67 “Tariff” means Company’s Minnesota Electric Rate Book, on file with the MPUC, as amended from time to time.

1.1.68 “Termination Payment” has the value set forth in Schedule 1.1.67.

ARTICLE II
TERMS OF SERVICE

2.1 Provision of Service. Company agrees to supply and Customer agrees to accept its total requirements for Service at a nominal voltage of one hundred fifteen (115) kV for Customer’s use at the Data Center. Customer agrees that the Data Center’s total peak load will not exceed [REDACTED] MW.

2.2 Rate.

2.2.1 Initial Rate Election. Customer will qualify for Service pursuant to the then currently effective General Time of Day Service Rate Schedule and all applicable riders or any successor rate for which the Data Center may qualify pursuant to the then currently effective Tariff, as the same may be amended from time to time (the “Rate Schedule”). Attached hereto as Exhibit C is the currently effective Rate Schedule and all applicable riders. Customer will pay in accordance with the terms of the Rate Schedule, consistent with this Agreement and any applicable Ancillary Agreement. In addition to the rates specified, Company will collect from Customer any sales, use, excise, or other such taxes and fees that are legally effective and applicable to Service provided. In the event that the Rate Schedule is terminated or is otherwise no longer available to Customer, then Customer may elect a different rate schedule for which it qualifies without impact to this Agreement.

2.2.2 Election of Different Rate. During the Initial Term, Customer may select to take Service pursuant to a rate schedule for which it qualifies other than as provided for in Section 2.2.1 of this Agreement; provided, however, that in the event that Customer makes such election, this Agreement will terminate; provided further, however, that Customer will not be required to make the Termination Payment in the event that this Agreement terminates pursuant to this Section 2.2.2.



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2.3 Competitive Response Rider Agreement. The Parties acknowledge their intent that Service provided under this Agreement is subject to the terms and conditions of the CRRA.

2.4 Provision for Service at Transmission Voltage and Back-Up.

2.4.1 Interconnection. Customer will take Service at transmission voltage and will enter into all necessary and appropriate agreements, consistent with Good Utility Practice and in a form reasonably acceptable to Parties, to govern the terms of the interconnection of Customer Facilities to Company Facilities, including, without limitation, the Interconnection Agreement.

2.4.2 Back-Up Generation. Customer contemplates installing back-up generation at the Data Center. Customer will enter into the necessary agreements with Company to operate such back-up generation as may be required by the Tariff, consistent with Good Utility Practice, and on terms reasonably acceptable to Company. Customer also agrees that its back-up generation will not back feed onto Company's transmission system, nor run in parallel with Company's transmission system, except as may be provided for in the Interconnection Agreement.

2.5 Service Installation. Customer acknowledges that it may be responsible at its cost to provide certain capabilities or conditions prior to Company's provision of Service, as may be provided for in: (a) this Agreement; (b) the Interconnection Agreement; and (c) the General Rules and Regulations of Company in the Tariff. Failure to comply with this provision will not be considered an event of Force Majeure.

2.6 Annual Minimum Charge. In consideration of the capacity and energy commitment and its investment in facilities to serve Customer, Customer agrees that if the total payments for Service during any Annual Period by Customer to Company is less than the Annual Minimum Charge, Customer agrees to pay the difference between the actual amount paid by Customer in that Annual Period and the Annual Minimum Charge, and Company will include such amount in its bill for the last month of said Annual Period.

2.7 Payment of Bills. All bills for Service supplied by Company in the preceding billing period are due and payable by Customer within [REDACTED] of receipt by Customer. All bills will be issued electronically to Customer at the electronic address provided by Customer to Company. With respect to billing and payment, Company and Customer each reserves for itself all rights provided for under the Tariff and Applicable Law.

**ARTICLE III
TERM AND TERMINATION**

3.1 Initial Term. This Agreement will be effective as of the Effective Date. Upon satisfaction of the Conditions Precedent, Service provided for under this Agreement will commence at 12:01 a.m. Central Prevailing Time ("C.P.T.") on the Electric Service Commencement Date, and will continue for a period ending at 11:59 p.m. C.P.T. on the tenth (10th) anniversary of the Electric Service Commencement Date ("**Initial Term**").



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3.2 Good Faith Negotiations for Extension. Notwithstanding the provisions of Section 3.1 of this Agreement, at a time mutually agreeable to the Parties but no sooner than the fifth (5th) anniversary of the Electric Service Commencement Date, the Parties will meet and confer and work in good faith to negotiate potential rates, terms, and conditions for continued Service to the Data Center beyond the Initial Term, which includes, but is not limited to, potential amendments and/or extensions to this Agreement, the CRRA, and other Ancillary Agreements ("**Extension Negotiations**"). In furtherance of the foregoing, but not in limitation thereof, the Extension Negotiations are to be based on the following principles:

- (a) Recognition of Customer’s investment in the Data Center and Company’s investment in facilities to serve the Data Center;
- (b) Recognition of Company’s obligation to serve;
- (c) A presumption that the Data Center load will not exceed [REDACTED] MW;
- (d) The interest of both Parties to provide continuing rate reduction to Customer under the CRRA – to the extent Commercially Reasonable and consistent with Good Utility Practice – in an amount of not less than (i) [REDACTED] from the then currently effective applicable rate, and (ii) [REDACTED] from the then currently effective applicable rate in the event Company attains the grid renewables percentage set forth in Section 5.4.2;
- (e) Recognition of the potential changes in the marketplace with respect to Clean Generation;
- (f) Recognition of [REDACTED]
- (g) Recognition of Company’s then currently effective rates and Company’s forecasted rates;
- (h) Recognition of Company’s system-wide capacity position;
- (i) Recognition of then currently existing market prices for electrical energy, capacity, and natural gas; and
- (j) That any agreement that results from the Extension Negotiations is subject to approval of the MPUC, including without limitation, the appropriate ratemaking treatment as may be requested by Company with respect to any rate agreed to by the Parties.

3.3 Early Termination by Company. The obligations of the Parties to each other with respect to construction of Company Facilities or Customer Facilities, Service, and Clean



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Generation are expressly conditioned on Company receiving Customer’s Notice to Proceed as set forth in Article IV. In the event that Company does not receive Customer’s Notice to Proceed by the [redacted] anniversary of the Regulatory Approval Date, Company may terminate this Agreement upon thirty (30) Days’ notice to Customer. Upon termination by Company under this Section 3.3, neither Party will have any further obligation or liability under this Agreement or the CRRA. For the avoidance of doubt, Company may not terminate this Agreement during the period between the Regulatory Approval Date and the Electric Service Commencement Date for any reason but for: (a) Customer’s failure to provide Company with a Notice to Proceed by the third (3rd) anniversary of the Regulatory Approval Date; or (b) as may be ordered by the MPUC.

3.4 Termination For Convenience of Customer. Customer may terminate this Agreement for its convenience prior to the expiration of the Initial Term upon three hundred sixty five (365) Days’ notice to Company. In the event that Customer terminates this Agreement prior to the expiration of the Initial Term, Customer will make the Termination Payment in immediately available funds within ninety (90) Days of the effective date of termination; provided, however, that Customer will not be required to make the Termination Payment in the event this Agreement terminates pursuant to Section 2.2.2.

**ARTICLE IV
COMMENCEMENT OF SERVICE**

4.1 Notice To Proceed. The Parties acknowledge that both Customer and Company must construct certain interconnection and other facilities and perform other tasks (such as sourcing Clean Energy) prior to commencement of Service under this Agreement. Subject to the provisions of any Ancillary Agreement, no Party is required to commence undertaking any of its obligations under this Agreement (although a Party may do so) until such time as Customer provides Company a “Notice to Proceed”. Such Notice to Proceed will:

- (a) Be provided by Customer to Company no sooner than [redacted] prior to the Scheduled Commercial Operation Date; provided, however, that the Notice to Proceed is issued no later than the [redacted] anniversary of the Regulatory Approval Date;
- (b) Identify the Scheduled Commercial Operation Date;
- (c) Provide Customer’s Load Forecast for the Service Commencement Stub Year and the first Annual Period;
- (d) Provide the Notice to Construct as provided for in the Interconnection Agreement; and
- (e) Provide any other information that the Parties reasonably deem appropriate to include in the Notice to Proceed, including without limitation any information that may be reasonably requested by Company from Customer.



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4.2 Commercial Operation of the Data Center.

4.2.1 Commercial Operation Date. Customer and Company will communicate regularly as the Data Center nears Commercial Operation to help ensure that Service under this Agreement can commence as of the Commercial Operation Date. Customer will notify Company when Data Center has achieved Commercial Operation.

4.2.2 Commercial Operation Following Electric Service Commencement Date. In the event Commercial Operation occurs after the Required Commercial Operation Date for any reason other than Force Majeure: (a) the Initial Term will commence on the Electric Service Commencement Date notwithstanding that Customer is then not capable of taking Service; and (b) the Term (as defined in the CRRA) of the CRRA will commence on the Electric Service Commencement Date such that Customer waives its right to receive the CRR Rate (as defined in the CRRA) on a day-for-day basis until the Data Center achieves Commercial Operation.

4.2.3 Extension of Electric Service Commencement Date. The Electric Service Commencement Date will extend on a day-for-day basis, [REDACTED] for the period of any delay by Customer in achieving Commercial Operation of the Data Center caused by Force Majeure. In the event that the [REDACTED] period identified in the foregoing sentence elapses, the provisions of Section 4.2.2 of this Agreement will apply.

4.3 Construction of Company Facilities.

4.3.1 Construction of Facilities. The Parties specifically recognize that Company will be required to design, engineer, procure, permit, construct, and/or relocate (as appropriate) facilities and improvements for purposes of providing Service to the Data Center at transmission voltage ("Company Facilities"). Notwithstanding the provisions of Section 5.1(B), Section 5.2, and Section 5.3 of the Tariff, and subject to the provisions of any applicable Ancillary Agreement, Company will construct the Company Facilities at its cost and expense; provided, however, that Company must receive the Contemplated Regulatory Approvals. The specific terms and conditions associated with construction of the Company Facilities are addressed in the Interconnection Agreement.

4.3.2 Expansion of Facilities. Where Customer desires to increase the capacity of the Data Center and such expansion requires additional Company Facilities to serve such expanded load of the Data Center, Customer will provide Company with notice under the terms set forth in the Interconnection Agreement.

4.4 Construction of Customer Facilities. Customer will design, engineer, procure, permit, and construct the Customer Facilities all at Customer's cost and expense. Customer's design, engineering, procurement, and construction of Customer Facilities will be, as applicable, in accordance with Company's applicable guidelines and requirements, the National Electric Safety Code, and Good Utility Practice, and will be subject to the Interconnection Agreement and other applicable Ancillary Agreements.

4.5 Load Forecasts. Customer will Annually provide Company with Customer's Load Forecast. In addition, Customer will use Commercially Reasonable Efforts to keep



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Company appropriately informed in light of Company's obligations to Customer pursuant to Article V of this Agreement as to the Data Center's expected actual load including, without limitation, providing Company reasonably prompt notice of any expected material deviations from Customer's Load Forecast.

ARTICLE V CLEAN GENERATION

Company makes the following commitments with respect to Clean Generation to induce Customer to procure Service and Customer agrees to take Service under this Agreement in reliance on Company's commitments with respect to Clean Generation, *inter alia*, on terms and conditions, as set forth in this Article V.

5.1 Procurement of Clean Energy. Company agrees to procure sufficient Clean Energy so that such Clean Energy produces Clean Energy RECs that, in aggregate, can be retired in amounts that are equal to or greater than the Data Center's expected annual energy use for each Annual Period, the Service Commencement Stub Year, and the Service Termination Stub Year. The Clean Energy resources are set forth in Exhibit B, which includes the Initial Clean Energy, and which exhibit Company and Customer will update based on Clean Generation procured pursuant to Company's obligations under this Agreement.

5.1.1 Company will use Commercially Reasonable Efforts to meet its obligations with respect to Clean Energy based on Customer's Load Forecast as provided for in Section 4.5 of this Agreement. Because the Customer's Load Forecast is non-binding on Customer, however, the Parties recognize that Company's ability to retire Clean Generation RECs (as discussed in Section 5.5 of this Agreement) may not always match the Data Center's annual energy consumption.

5.1.2 Where Company is required to procure Clean Energy in addition to the Initial Clean Energy pursuant to this Agreement, Company will have up to [REDACTED] to procure and place in service such additional Clean Energy ("**Procurement Period**"). During the Procurement Period, Company will not be found in breach of this Agreement with respect to its Clean Energy obligations so long as Company continues to comply with its obligations under Section 5.5.3 of this Agreement.

5.1.3 Company's obligations with respect to procuring Clean Energy will be suspended on a day-for-day basis in the event of Force Majeure up to three hundred sixty five (365) Days.

5.2 Clean Capacity. No later than [REDACTED] following either:
(a) Customer provides notice to Company that the Data Center has reached a peak load of [REDACTED] MW; or (b) the Data Center's fifteen (15)-minute measured demand reaches [REDACTED] MW, Company agrees to procure Clean Capacity in an amount not less than [REDACTED] MW of duly accredited Capacity, as follows:

5.2.1 Company will ensure that the ERO accredits the Clean Capacity, in aggregate, as a Capacity Resource pursuant to the ERO's resource adequacy requirements in its then current effective tariff(s) on file with FERC.



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5.2.2 Company will identify the Clean Capacity on Exhibit B to this Agreement, and which exhibit Company will update as necessary.

5.2.3 Once Company procures Clean Capacity, its obligation to continue providing Clean Capacity for the Data Center is ongoing through the Initial Term of this Agreement.

Company's obligations with respect to Clean Capacity are expressly subject to the approval of the MPUC for rate recovery of the resources procured by Company to meet its Clean Capacity obligations, and also subject to approvals of the SDPUC, NDPSC, and FERC as Company deems necessary and/or prudent in its sole discretion; such approvals to be sought at an appropriate time in Company's sole discretion and are in addition to the Contemplated Regulatory Approvals and Non-Jurisdictional Regulatory Approvals provided for in this Agreement.

5.3 Types of Clean Generation. Company has discretion to procure Clean Energy and/or Clean Capacity as it deems fit, in its sole discretion, consistent with the provisions of this Agreement. Company's obligations to procure Clean Energy is subject to obtaining regulatory approval consistent with Article VI.

5.4 Company's Continuing Obligation to Ensure Clean Generation.

5.4.1 Third Party Contracts. In the event that: (i) any counterparties to any contract for Clean Generation defaults on its obligations to Company for Clean Generation, or (ii) any such contract terminates by its terms, Company agrees to procure replacement Clean Generation within [REDACTED] months from the date of such event of default or termination, as applicable.

5.4.2 Obligation Upon Attainment of Grid Renewables Percentage. In the event that either: (a) the term of the Agreement is extended pursuant to Section 3.2; or (b) Data Center's fifteen (15)-minute measured demand in any given month during the Initial Term has reached an amount greater than or equal to [REDACTED] MW, and notwithstanding any other terms of this Agreement, where a mutually agreeable organization or the MPUC certifies that [REDACTED] of the energy Company provides to its Minnesota retail customers originates from renewable and/or carbon-free generation resources, Company's obligation to procure Clean Energy and/or Clean Capacity under this Agreement will terminate.

5.5 Treatment of RECs.

5.5.1 Company will ensure that all Clean Energy RECs are registered with the Renewable Energy Tracking System, and reasonably accounted for in conformance with the requirements and standards set forth by the Renewable Energy Tracking System. Company will provide a summary of Clean Energy RECs registered with the Renewable Energy Tracking System to Customer upon reasonable request of Customer and at least Annually. The right, title, and interest in the Clean Energy RECs will be with Company.

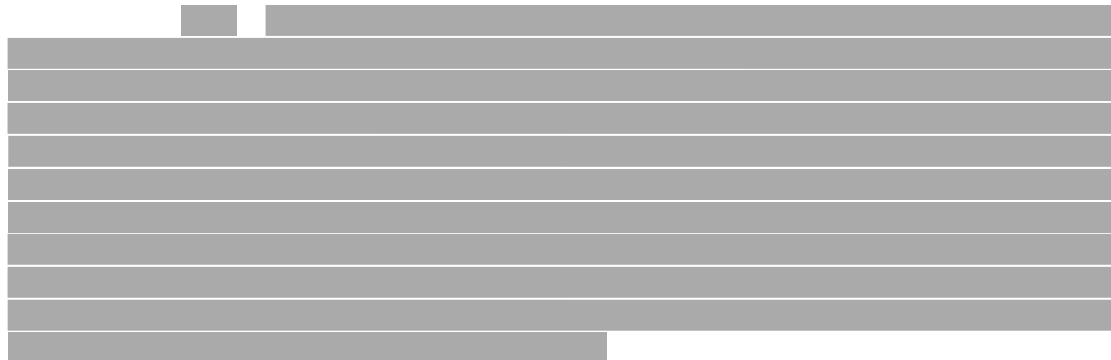
5.5.2 Company will annually retire Clean Energy RECs in an amount equal to the total annual megawatt-hours of Service provided by Company to the Data Center in any



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given Annual Period (including, without limitation, the Service Commencement Stub Year and the Termination Stub Year) under this Agreement (“Retiring Amount”) no later than June 1st of the following year.

5.5.3 In the event there are fewer Clean Energy RECs than the Data Center’s consumption of energy (on a MWh basis) for any given Annual Period, Company will procure additional RECs at its cost and expense and in an amount equal to the difference between available Clean Energy RECs and the Data Center’s total annual energy consumption for such Annual Period and Company will retire such RECs (for the avoidance of doubt, Company may use already existing RECs owned by Company to meet such obligations under this Section 5.5.3 of this Agreement); provided, however, that in the event that Company retires already existing RECs that are not associated with Incremental New Generation, Company will have thirty-six (36) months to retire the same amount of RECs from Incremental New Generation; and provided further, however, that such RECs will not be counted towards Company’s obligations under section 5.5.2 of this Agreement. Company may procure RECs to meet the provisions of this Section 5.5.3 in any manner it deems fit, in its sole discretion.



ARTICLE VI
REGULATORY APPROVALS.

6.1 **Regulatory Approvals Required.** This Agreement, Company’s obligation to incur costs under this Agreement, and Company’s obligation to procure Clean Generation is subject to Company’s receipt of the Contemplated Regulatory Approvals and the Non-Jurisdictional Regulatory Approvals.

6.2 **Requesting Regulatory Approvals.** Company will seek approval of the MPUC of the Contemplated Regulatory Approvals and of the SDPUC, NDPSC, and FERC of the Non-Jurisdictional Regulatory Approvals within a reasonable time after the Effective Date. Customer and Company will actively support and defend any such filing before the MPUC, SDPUC, NDPSC, and FERC, and cooperate to expeditiously seek the Contemplated Regulatory Approvals and Non-Jurisdictional Regulatory Approvals, including, without limitation, preparing responses to any information requests, providing any testimony or witnesses, and filing any supporting briefs or affidavits as may be useful and helpful to obtain the Contemplated Regulatory Approvals and Non-Jurisdictional Regulatory Approvals.



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6.3 Termination for Failure of Regulatory Approvals. Notwithstanding anything in this Agreement to the contrary, this Agreement will be null and void and of no effect at no cost to either Party in the event that any one, some, or all of the Contemplated Regulatory Approvals or the Non-Jurisdictional Regulatory Approvals are not received on the terms and conditions requested by Company. In the event any of the preceding events occur, the Parties will negotiate in good faith to modify this Agreement in compliance with any final order of the MPUC, the NDPSC, the SDPUC, or FERC, provided, however, that such modifications provide the Parties with economic terms that are substantially equivalent to those provided under this Agreement. In the event mutual agreement cannot be reached within thirty (30) Business Days, then this Agreement will terminate unless Company and Customer mutually agree in writing to accept any modifications to this Agreement, and/or any modifications to any of the Ancillary Agreements, and/or to the ratemaking treatment of the Company Facilities, and/or to ratemaking treatment of the Clean Generation and/or ratemaking treatment of the CRRA.

**ARTICLE VII
DISPUTE RESOLUTION PROCEDURES.**

7.1 If a dispute arises between the Parties regarding the terms of this Agreement or the application of the Tariff to this Agreement, either Party will give written notice to the other Party. If the Parties are unable to resolve the dispute between themselves within ten (10) Days from receipt of such notice, the Parties will present their dispute to the MPUC for resolution, which the Parties agree the MPUC has the authority to make.

7.2 In the event that the MPUC does not accept jurisdiction over such dispute under this Agreement, then the Parties will meet within ten (10) Days of any Commission order declining jurisdiction, and confer in good faith to attempt to reach a settlement within ten (10) Days of the date of the MPUC order.

7.3 In the event the Parties are unable to settle their dispute after the MPUC has declined jurisdiction, either Party, consistent with Section 9.1 of this Agreement, may submit the dispute to a Minnesota state district court, or to the United States District Court having jurisdiction in Minnesota, and each Party agrees that each such court will have personal jurisdiction over it with respect to such proceeding, and waives any objections it may have, and expressly consents, to such personal jurisdiction.

**ARTICLE VIII
FORCE MAJEURE**

8.1 Effect of Declaring Force Majeure. Neither Party will be considered to be in default or breach of this Agreement or liable in damages or otherwise responsible to the other Party for any delay in or failure to carry out any of its obligations under this Agreement if, and only to the extent that, the Party is unable to perform or is prevented from performing by an event of Force Majeure. Notwithstanding the foregoing sentence, neither Party may claim Force Majeure for any delay or failure to perform or carry out any provision of this Agreement to the extent that such Party has been negligent or engaged in intentional misconduct and such negligence or intentional misconduct substantially and directly caused that Party's delay or failure to perform or carry out its duties and obligations under this Agreement.



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8.2 **Procedures for Declaring Force Majeure.** A Party claiming Force Majeure must:

- (a) Give written notice to the other Party of the occurrence of a Force Majeure as soon as practicable following such occurrence;
- (b) Use Commercially Reasonable Efforts to resume performance or the provision of Service as soon as practicable;
- (c) Take all Commercially Reasonable actions to correct or cure the Force Majeure;
- (d) Exercise all Commercially Reasonable Efforts to mitigate or limit damages to the other Party; except that neither Party will be required to settle any strike, walkout, lockout, or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, is contrary to its interest; and
- (e) Provide written notice to the non-declaring Party, as soon as practicable, of the cessation of the adverse effect of the Force Majeure on its ability to perform its obligations under this Agreement.

ARTICLE IX
MISCELLANEOUS

9.1 **Governing Law.** This Agreement will be governed and construed in accordance with the internal laws (as opposed to the conflicts of law provisions) of the State of Minnesota.

9.2 **Assignment.** Customer may not assign this Agreement without prior written consent of Company, such consent not to be unreasonably withheld; provided, however, that Customer may assign this Agreement without Company consent to an Affiliate of Customer and provided that such Affiliate of Customer will maintain the credit support provided for in Section 9.3 of this Agreement. Where Customer assigns the Agreement to an Affiliate, Customer will provide notice of such assignee but failure by Customer to provide such notice will not constitute a Customer event of default.

9.3 **Credit Support.** To secure Customer's obligations under this Agreement, within thirty (30) Days of the Notice to Proceed, Customer will post a guarantee from a Guarantor in a form substantially similar to Exhibit D, which guarantee will not exceed the Guarantee Cap. Where Company

Company will provide written notice to Customer and Customer will have sixty (60) Days from written notice

9.4 **Tariff Matters.** Service provided hereunder is subject to the General Rules and Regulations of Company in the Tariff on file with the MPUC. A copy of such rules and regulations is available from Company. Customer agrees to take Service only as herein stated. Where there is a conflict between any term or condition in this Agreement and the Tariff or Rate



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Schedule, the terms of this Agreement will control and the Parties will work in good faith to carry out the intent of this Agreement. Nothing in this Agreement will abrogate any of the rights or entitlements of Company or Customer pursuant to the Tariff other than as explicitly set forth in this Agreement and by the express terms of any Ancillary Agreement (including, without limitation, the CRRA).

9.5 Notices. Any notice, demand, request, or communication required or authorized by this Agreement will be hand delivered or mailed by certified mail, return receipt requested, with postage prepaid, to Parties as set forth below. In addition to the obligations set forth in the preceding sentence, a Party providing notice, demand, request, or communication pursuant to this Section may also provide a courtesy copy of such notice, demand, request, or communication via electronic mail, or email. Any Party may update that portion of this Section that pertains to such Party's address by giving written notice to the other Parties of such change at any time. If to Company:

Xcel Energy Inc.
Northern States Power Company
Managed Accounts
401 Nicollet Mall – 7th floor
Minneapolis, MN 55401
Attn: Christopher Conrad

With copy to:

Xcel Energy Services Inc.
Legal Department
401 Nicollet Mall – 8th Floor
Minneapolis, MN 55401
Attn: General Counsel

If to Customer:

Honeycrisp Power LLC
c/o Kutak Rock LLP
Todd J. Guerrero
60 South Sixth Street
Suite 3400
Minneapolis, MN 55402
Email: todd.guerrero@kutakrock.com
Phone: 612-334-5000



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With copy to:

Kutak Rock LLP
Todd J. Guerrero
60 South Sixth Street
Suite 3400
Minneapolis, MN 55402
Email: todd.guerrero@kutakrock.com
Phone: 612-334-5000

9.6 Headings. The headings of Articles and Sections of this Agreement are for guidance and convenience of reference only and will not limit or otherwise affect any of the terms or provisions of this Agreement.

9.7 Entire Agreement; Amendments. This Agreement, the Ancillary Agreements, and all Exhibits and Schedules appended hereto constitute the entire agreement and understanding between the Parties with respect to Service for the Data Center, and supersede all prior agreements, representations, statements, documents, understandings, or correspondence between the Parties hereto relating to the subject matter herein. This Agreement will not be amended, modified, or supplemented except by a written instrument signed by an authorized representative of each of the Parties hereto; any such amendment being expressly subject to and conditioned on the approval of the MPUC.

9.8 Counterparts. This Agreement may be executed in counterparts by the Parties hereto, each of which will be considered an original instrument, but all of which will be considered one and the same agreement.

9.9 No Waiver. No term or provision of this Agreement will be deemed to have been waived by either Party unless the waiver is in writing and signed by the Party against whom enforcement is attempted. No custom or practice that may develop between the Parties in the administration of the terms of this Agreement is to be construed to waive or lessen any Party's right to insist upon strict performance of the terms of this Agreement.

9.10 Duty to Mitigate. Notwithstanding any other provision of this Agreement, each Party has a duty to mitigate damages and covenants that it will use Commercially Reasonable Efforts to mitigate any damages it may incur because of the other Party's performance or non-performance.

9.11 Waiver of Consequential Damages. In no event will one Party, its governing board members, officers, employees or agents be liable to the other Party under this Agreement from any cause howsoever arising in contract, tort or otherwise for any indirect, incidental, special, punitive, exemplary, or consequential damages, including but not limited to, loss of use, loss of revenue, loss of profit, interest charges, cost of capital, or cost of cover; provided, however, that damages for which a Party may be liable to the other Party under another



PUBLIC DOCUMENT—NOT PUBLIC DATA HAS BEEN EXCISED

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agreement will not be considered to be special, indirect, incidental, punitive, exemplary or consequential damages hereunder.

[SIGNATURE PAGE FOLLOWS]



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EXECUTION VERSION

IN WITNESS WHEREOF, authorized representatives of the Parties have hereby executed this Retail Electric Service Agreement as of the date first written above.

**NORTHERN STATES POWER
COMPANY**, a Minnesota corporation

HONEYCRISP POWER LLC,
a Delaware limited liability company

DocuSigned by:
Christopher Clark
By: _____
Its: President

DocuSigned by:
Todd Guerrero
By: _____
Its: Authorized Signatory

[SIGNATURE PAGE TO RETAIL ELECTRIC SERVICE AGREEMENT]



EXECUTION VERSION

EXHIBIT A
DATA CENTER LOCATION



EXECUTION VERSION

EXHIBIT B

CLEAN GENERATION

Clean Capacity:

[To be provided.]

Clean Energy (including Initial Clean Energy):

[To be provided.]



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EXHIBIT C

RATE SCHEDULE, TAXES, AND FEES

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EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE
RATE CODE A15, A17, A19

Section No. 5
26th Revised Sheet No. 29

AVAILABILITY-MANDATORY:

Effective November 1, 2007, this rate schedule is mandatory for any non-residential customer for general service having a 15-minute measured demand equal to or greater than 1,000 kW for at least 4 of the past 12 consecutive months. Customer will remain on this rate schedule on a mandatory basis unless their demand remains below 1,000 kW for 12 consecutive months.

AVAILABILITY-OPTIONAL

This rate schedule is optional for any non-residential customer for general service where customer is not required to be on a time-of-day rate.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage; plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

Customer Charge per Month -- Time Of Day Metered (A15)		\$29.64	
-- kWh Metered (A17)		\$25.64	
-- Unmetered (A19)		\$21.64	
Service at Secondary Voltage	<u>Oct-May</u>	<u>Jun-Sep</u>	
Demand Charge per Month per kW			
On Peak Period Demand	\$11.00	\$15.54	R
Off Peak Period Demand in Excess of On Peak Period Demand	\$2.35	\$2.35	
Energy Charge per kWh:			
On Peak Period Energy	\$0.05098		R
Off Peak Period Energy	\$0.02458		R
Energy Charge Credit per Month per kWh			
All kWh in Excess of 400 Hours Times the On Peak Period Billing Demand, Not to Exceed 50% of Total kWh	\$0.01593		R
	<u>January - December</u>		
Voltage Discounts per Month	<u>Per kW</u>	<u>Per kWh</u>	
Primary Voltage	\$0.60	\$0.00108	R
Transmission Transformed Voltage	\$1.55	\$0.00274	R
Transmission Voltage	\$2.35	\$0.00285	R

(Continued on Sheet No. 5-30)

Date Filed: 10-01-18 By: Christopher B. Clark Effective Date: 01-01-19
President, Northern States Power Company, a Minnesota corporation
Docket No. E002/GR-15-826 Order Date: 06-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
15th Revised Sheet No. 30

In addition, customer bills under this rate are subject to the following adjustments and/or charges:

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

ENVIRONMENTAL IMPROVEMENT RIDER

Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

LOW INCOME ENERGY DISCOUNT RIDER

Bills are subject to the adjustment provided for in the Low Income Energy Discount Rider.

The following are terms and conditions for service under this tariff.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

DEFINITION OF PEAK PERIODS

The on peak period is defined as those hours between 9:00 a.m. and 9:00 p.m. Monday through Friday, except the following holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. When a designated holiday occurs on Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday. The off peak period is defined as all other hours. Definition of on peak and off peak period is subject to change with change in Company's system operating characteristics.

(Continued on Sheet No. 5-31)

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Docket No.	E002/GR-15-826			Order Date:	06-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
8th Revised Sheet No. 31

DETERMINATION OF ON PEAK PERIOD DEMAND

The actual on peak period demand in kW shall be the greatest 15-minute load for the on peak period during the month for which the bill is rendered. The adjusted demand in kW for billing purposes shall be determined by dividing the actual on peak demand by the power factor expressed in percent but not more than 90%, multiplying the quotient so obtained by 90%, and rounding to the nearest whole kW. In no month shall the on peak period demand to be billed be considered as less than the current month's adjusted on peak period demand in kW, or 50% of the greatest monthly adjusted on peak period demand in kW during the preceding 11 months. In no month shall the on peak billing demand be greater than the value in kW determined by dividing the kWh sales for the billing month by 100 hours per month.

The greatest monthly adjusted on peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

DETERMINATION OF OFF PEAK PERIOD DEMAND IN EXCESS OF ON PEAK PERIOD DEMAND

The actual off peak period demand in kilowatts shall be the greatest 15-minute load for the off peak period during the month for which the bill is rendered rounded to the nearest whole kW. In no month shall the off peak period demand for billing purposes be considered as less than the current month's actual off peak period demand in kW, or 50% of the greatest monthly actual off peak period demand in kW during the preceding 11 months.

The greatest monthly adjusted off peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

The off peak period demand in excess of on peak period demand in kW to be billed shall be determined by subtracting the billing on peak period demand from the actual off peak period demand as defined above only the off peak period demand is greater.

POWER FACTOR

For three phase customers with services above 200 amperes, or above 480 volts, the power factor for the month shall be determined by permanently installed metering equipment. For all single phase customers and three phase customers with services 200 amperes or less, a power factor of 90% will be assumed.

(Continued on Sheet No. 5-32)

Date Filed:	11-02-15	By: Christopher B. Clark	Effective Date:	10-01-17
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Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
6th Revised Sheet No. 32

COMPETITIVE SERVICE

Competitive Service is available under this schedule subject to the provisions contained in the Competitive Response Rider.

STANDBY SERVICE

Standby Service is available under this schedule subject to the provisions contained in the Standby Service Rider.

MINIMUM DEMAND TO BE BILLED

The monthly minimum on peak period billing demand shall not be less than provided above.

SPLIT SERVICE

When approved by Company, customer's service may be split between General Service and General Time of Day Service rates. Only Company approved storage space cooling and storage space heating equipment qualifies for the General Time of Day Service portion of a split service installation. The thermal storage equipment shall be permanently wired, separately served and metered, and at no time connected to the general service portion of the split service installation. Each portion of customer's split service installation will be considered separately for all other rate application purposes.

OPTIONAL TRIAL SERVICE

Customers may elect time of day service for a trial period of three months. If a customer chooses to return to non-time of day service after the trial period, the customer will pay a charge of \$35.00 for removal of time of day metering equipment.

TERMS AND CONDITIONS OF SERVICE

1. Alternating current service is provided at the following nominal voltages:
 - a. Secondary Voltage: Single or three phase from 208 volts up to but not including 2,400 volts,
 - b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts,
 - c. Transmission Transformed Voltage: Three phase from 2,400 volts up to but not including 69,000 volts, where service is provided at the Company's disconnecting means of a distribution substation transformer, or
 - d. Transmission Voltage: Three phase at 69,000 volts or higher.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer's premises.

(Continued on Sheet No. 5-32.1)

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Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
5th Revised Sheet No. 32.1

TERMS AND CONDITIONS OF SERVICE (Continued)

2. Transmission Transformed Service is available only to customers served by an exclusively dedicated distribution feeder. Customer will be responsible for the cost of all facilities necessary to interconnect at the Company's disconnecting means of a distribution substation transformer.
3. Transmission Service is available at transmission voltage, subject to the terms and conditions contained in the Company's General Rules and Regulations, Section 5.1(B).
4. Customer selecting the above time of day rate schedule will remain on this rate for a period of not less than 12 months.
5. If a customer has a billing demand of less than 25 kW for 12 consecutive months, the customer will be given the option of returning to the Small General Time of Day Service schedule.
6. Optional Metering Service: Optional metering is available subject to the provisions in the General Rules and Regulations, Section 1.5, for the following applications:
 - a. Kilowatt-hour Metered Service: For applications where a non-time of day meter is used, the time of day metering charge will be waived and the applicable lower monthly Customer Charge shall apply.
 - b. Unmetered Service: This rate is for applications where no metering is installed and the applicable lower monthly Customer Charge shall apply. If requested by Company, the customer agrees to receive one or more combined bills for all their unmetered service locations. For purposes of applying the appropriate customer service charge, one customer service charge shall be applied for every point of delivery. A point of delivery shall be any location where a meter would otherwise be required under this schedule.

Date Filed:	11-02-15	By:	Christopher B. Clark	Effective Date:	10-01-17
			President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826			Order Date:	06-12-17



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Taxes and Fees: All state, county, city, and local taxes; franchises fees and other levies that are required to be applied to Customer's bill under Applicable Law.

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EXHIBIT D

FORM OF GUARANTY

GUARANTY

THIS GUARANTY, dated as of last date this Guaranty is signed by either party as set forth below, is executed by the company identified below as the guarantor, a _____ corporation ("Guarantor") in favor of Northern States Power Company, a Minnesota corporation, d/b/a Xcel Energy, with its principal place of business at 401 Nicollet Mall, Minneapolis, Minnesota 55401 ("Creditor").

Whereas, Creditor is a public utility as defined under Minnesota law which proposes to provide electric service to one or more affiliates of Guarantor for a Data Center proposed to be constructed within Creditor's assigned service area (the "Data Center"), with a potential investment of more than _____ over the life of the project.

Whereas, in furtherance of the proposal to have Creditor provide electric service to the Data Center: (a) one or more affiliate(s) of Guarantor including [Honeycrisp Power LLC, a _____ corporation] and _____, a _____ corporation] and other such affiliates as may enter into agreements with Creditor in connection with provision of electric service to the Data Center ("Obligor") has entered or seeks to enter into certain contracts, agreements, and arrangements with Creditor, including: (i) Retail Electric Services Agreement of even date herewith (the "Retail Electric Service Agreement", (ii) Competitive Response Rider Agreement of even date herewith (the "CRRR"), and (iii) Interconnection Agreement for Retail Electric Service at Transmission Voltage of even date herewith (the "Interconnection Agreement") (such agreements collectively referred to herein as the "Contract"); and (b) Guarantor is the parent corporation or an affiliate of Obligor, will receive substantial benefit from the Contract, and accordingly has agreed to guarantee Obligor's obligations under the Contract to induce Creditor to enter into the Contract.

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, Guarantor and Creditor hereby agree as follows:

1. Guaranty.

(a) Guarantor hereby absolutely, irrevocably, unconditionally and fully guarantees, and promises to perform, each Obligation (as defined below) of Obligor under the Contract on demand by Creditor, provided, however, that nothing herein shall require Guarantor to make any payment to Creditor in excess of that which Obligor was liable for under the Contract. For purposes of this Guaranty, "Obligation" shall include all payments, liabilities, and obligations owed by Obligor to Creditor for the payment of money now existing or hereafter arising pursuant to the terms of the Contract up to a maximum of _____

_____. This is a guaranty of payment, not of collection, and as such, Creditor shall not be required to institute, pursue, or exhaust any remedies against Obligor before instituting suit, obtaining judgment, and executing thereon against Guarantor under this Guaranty. This Guaranty

shall survive termination of any part of the Contract to the extent necessary to enforce and complete the rights, duties, and obligations of Creditor and Obligor thereunder. Except as otherwise provided in Section 1(g) hereof, in no event shall Guarantor's liability under this Guaranty for defaulted Obligations at any time exceed _____.

(b) Guarantor's obligations under this Guaranty are continuing obligations and are not satisfied or discharged in full by an intermediate payment or settlement of account by Obligor. This Guaranty constitutes an independent guaranty of payment, and is not conditioned on or contingent upon any attempt to enforce in whole or in part any Obligations of Obligor to Creditor or the existence or continuance of Obligor as a legal entity, nor will this Guaranty be released, impaired, or affected by the consolidation or merger of Obligor with or into any other entity, the sale, lease, or disposition by Obligor of all or substantially all of its assets to any other entity, or the bankruptcy or insolvency of Obligor, the admission by Obligor of its inability to perform any obligation, or the making by Obligor of a general assignment for the benefit of creditors.

(c) Guarantor's obligations hereunder are primary obligations and not those of mere sureties. The obligations of Guarantor may be enforced by Creditor against Guarantor without first having recourse to any of its rights against Obligor or any other person and whether or not Creditor shall have proceeded against any other obligor principally or secondarily obligated with respect to any of the Obligations. If any Obligation is not performed according to its terms, Guarantor shall immediately upon receipt of written demand by Creditor (i) perform or cause Obligor to perform the Obligation, and (ii) pay, reimburse, and indemnify Creditor against any liabilities, damages, and related costs (including attorneys' fees) incurred by Creditor as a result thereof, all in such manner and at such times as Creditor may direct.

(d) Guarantor may replace this Guaranty, and terminate its obligations hereunder, at any time upon at least ten (10) days written notice to Creditor but only if

(i) Obligor replaces this Guaranty at the time of notice with either a bank guaranty or standby letter of credit, in either case issued by a United States chartered bank with assets totaling a minimum of _____ and a minimum credit rating from _____ of the following three (3) rating agencies: of at least _____ by S&P, _____ by Moody's, or _____ by Fitch; and not on credit watch or negative outlook by any rating agency (a "Qualified Bank") in the amount set forth in Section 1(a) hereof and in form acceptable to Creditor in its reasonable discretion, or

(ii) Obligor replaces this Guaranty at the time of notice with one by Alphabet Inc. in substantially the same form as this Guaranty, provided, however, that at the time Alphabet Inc. maintains a corporate credit rating from _____ of the following three rating agencies: of at least _____ by S&P, _____ by Moody's, or _____



by Fitch and not on credit watch or negative outlook by any rating agency (either (i) or (ii) referred to herein as a "**Replacement Guarantor**").

In the event that a Replacement Guarantor ceases to maintain the specified asset level and/or credit rating, Guarantor shall cause a Qualified Bank to issue a bank guaranty or standby letter of credit in the amount set forth in Section 1(a) hereof and in form acceptable to Creditor in its reasonable discretion.

(e) Satisfaction by Guarantor of any duty hereunder incident to a particular default or liability under the Contract or the occurrence of any other default shall not discharge Guarantor except with respect to the default satisfied, it being the intent of Guarantor that this Guaranty be continuing until such time as all of the Obligations have irrevocably been discharged and indefeasibly paid in full, at which time this Guaranty shall automatically terminate. If at any time the performance of any Obligation by Obligor or Guarantor is rescinded or voided under the federal Bankruptcy Code or otherwise, then Guarantor's duties hereunder shall continue and be deemed to have been automatically reinstated, restored, and continued with respect to that Obligation, as though the performance of that Obligation had never occurred, regardless of whether this Guaranty otherwise had terminated or would have been terminated following or as a result of that performance. This Guaranty shall terminate on the date Obligor has fully paid its Obligations under the Contract.

(f) The rights and remedies of Creditor hereunder shall be cumulative and not alternative to any other rights, powers, and remedies that Creditor may have at law, in equity, or under the Contract. The obligations of Guarantor hereunder are independent of those of Obligor and shall survive unaffected by the bankruptcy of Obligor. Creditor need not join Obligor in any action against Guarantor to preserve its rights set forth herein.

(g) Guarantor shall pay to Creditor, upon demand, and in addition to the maximum liability set forth in Section 1(a) hereof, all reasonable attorneys' fees and other expenses that Creditor may expend or incur in enforcing this Guaranty against Guarantor, whether or not suit is filed.

(h) Guarantor hereby waives and agrees not to assert or take advantage of:

(i) any right to require Creditor to proceed against Obligor or any other person, or to require Creditor first to exhaust any remedies against Obligor or any other person, before proceeding against Guarantor hereunder;

(ii) any defense based upon an election of remedies by Creditor;

(iii) any benefit of any laws limiting the liability of a surety;

(iv) any duty of Creditor to disclose to Guarantor any facts concerning Obligor, the Contract, or any other circumstances, that would, or allegedly would, increase the risk to Guarantor under this Guaranty, whether now known or hereafter learned by Creditor, it being understood that Guarantor is capable of and assumes the responsibility for being and remaining informed as to all such facts and circumstances;

(v) until all Obligations in Default have been indefeasibly paid in full, any rights of subrogation, contribution, reimbursement, indemnification, or other rights of payment or recovery for any payment by it hereunder. For the avoidance of doubt, if any amount is paid to Guarantor in violation of this provision, such amount shall be held by Guarantor for the benefit of, and promptly paid to, Creditor;

(vi) any claim that Creditor has waived any right to enforce the Guaranty, or any claim that Guarantor be released from Guarantor's duties hereunder, except by a writing duly executed by Creditor expressly for such purpose; and

(vii) any set-offs, counterclaims, presentments, demands for performance, notices of non-performance, protests and notices of every kind that may be required by applicable law.

(i) This Guaranty is a continuing guaranty by the Guarantor of the Obligations. The Guarantor hereby consents and agrees that the following actions may be undertaken from time to time without notice to Guarantor:

(i) Creditor and Obligor may compromise or settle any unpaid or unperformed Obligation or any other obligation or amount due or owing, or claimed to be due or owing, under the Contract; and

(ii) Creditor may take or fail to take any action of any kind in respect of any security for the Obligations, or impair, exhaust, exchange, enforce, waive, or release any such security; and

(iii) Creditor may exercise or refrain from exercising any rights against Obligor or others in respect of the Obligations.

2. Representations and Warranties. Guarantor represents and warrants to Creditor that: (a) the execution, delivery, and performance of this Guaranty by the Guarantor is within the corporate powers of the Guarantor, has been duly authorized by all necessary corporate action, and does not and will not: (i) require any consent or approval of the stockholders of the Guarantor which has not been obtained, (ii) violate any provision of (a) the articles of incorporation or by-laws of the Guarantor or (b) any law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect having applicability to the Guarantor, except where the failure to comply, individually or in the aggregate, could not reasonably be expected to result in a material adverse effect; (iii) require the consent or approval of, or filing or registration with, any governmental body, agency or authority, or (iv) result in a breach of or constitute a default under, or result in the imposition of any lien, charge, or encumbrance upon any property of the Guarantor; and (b) this Guaranty constitutes the legal, valid, and binding obligation of the Guarantor enforceable in accordance with its terms, except as such enforceability may be limited by bankruptcy or similar laws affecting the enforceability of creditors' rights generally; and (c) Guarantor is a corporation duly organized, validly existing, authorized to do business and in good standing under the laws of the state of its incorporation; and (d) Obligor is a direct or indirect subsidiary of Guarantor, and Guarantor shall benefit from execution of the Agreement.



3. Miscellaneous.

(a) All notices or other communications to Creditor or Guarantor under this Guaranty shall be in writing and delivered by courier, signature on receipt required, or via mail with a copy via confirmed facsimile, to the addresses stated in this Guaranty (or such other address as is provided for notice purposes in writing) and shall be effective upon delivery.

(b) This Guaranty may not be amended or modified, nor may any provision be waived, except by written instruments signed by Guarantor and Creditor expressly for such purpose.

(c) This Guaranty shall be binding upon and inure to the benefit of Creditor and Guarantor and their respective successors and permitted assigns, provided, however, that neither Guarantor nor Creditor shall assign its rights and obligations hereunder without the prior written consent of the other party, and any assignment without the prior written consent of the other party shall be null and void.

(d) If at any time any provision of this Guaranty is deemed to be illegal, invalid, or unenforceable, the legality, validity, or enforceability of the remaining provisions of this Guaranty shall not in any way be affected or impaired thereby.

(e) This Guaranty shall be governed by and construed in accordance with the laws of the State of [REDACTED] without reference to conflicts of law rules.

(f) Any action or proceeding arising out of this Guaranty shall be brought and enforced in the courts of [REDACTED] and the Guarantor and Creditor each hereby irrevocably submits to the jurisdiction of such courts and waives any objection based on *forum non conveniens* or to venue of any action instituted hereunder.

(g) Each party hereby irrevocably waives any and all rights to a trial by jury with respect to any legal proceeding arising out of or related to this Guaranty or any Obligations arising under the Contract.

(h) This Guaranty will terminate on the earliest to occur of the following: (i) Obligor or Guarantor has irrevocably and indefeasibly made all payments to Creditor that comprise the Obligation, and (ii) Guarantor has been expressly released from this Guaranty in writing by Creditor. Upon the first to occur of such events, Creditor agrees to confirm the termination of this Guaranty in writing.



Highly Confidential Trade Secret Data is marked in black
Trade Secret Data is marked in gray

Docket No. E002/M-19-____
Petition - Attachment D
Page 37 of 43

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IN WITNESS WHEREOF, the parties have caused this Guaranty to be executed as of the date stated below.

GUARANTOR: **Google Inc.**

By: _____ Address: 1600 Amphitheatre Parkway, Mountain View, CA 94043
Name: Karin Kimbrough Telephone: _____
Title: Assistant Treasurer
Date: / /

OBLIGOR: [Honeycrisp Power LLC] Address: _____

CREDITOR: **NORTHERN STATES POWER
COMPANY, A MINNESOTA
CORPORATION**
By: _____ Address: _____
Name: _____ Telephone: _____
Title: _____ Facsimile: _____
Date: / /



**Schedule 1.1.3
Annual Minimum Charge**

The Annual Minimum Charge is:

- 1) Service Commencement Stub Year: [REDACTED]
- 2) First Annual Period: [REDACTED];
- 3) For each subsequent Annual Period: the greater of: (a) the highest Annual Minimum Charge applicable to Customer in any previous Annual Period; or (b) as provided in Table 1 of this Schedule 1.1.3, based on Data Center's load:

Table 1

Range of Previous Annual Period's Twelve Month Average Monthly 15 Minute Measured Demand in a Given Annual Period Measured in MW	Annual Minimum Charge in US\$
[REDACTED]	

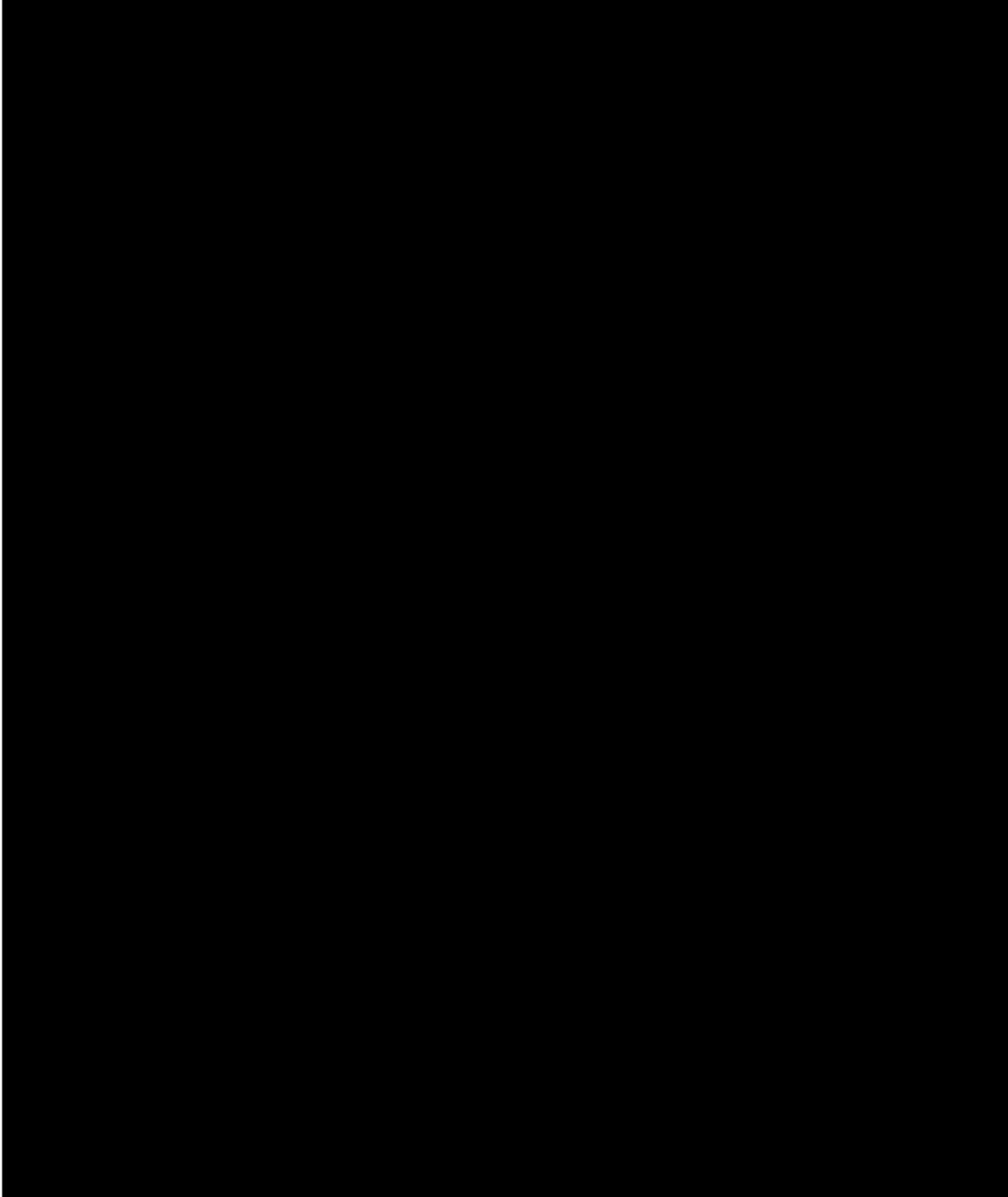


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Range of Previous Annual Period's Twelve Month Average Monthly 15 Minute Measured Demand in a Given Annual Period Measured in MW	Annual Minimum Charge in US\$
---	--



Sch 1.1.3

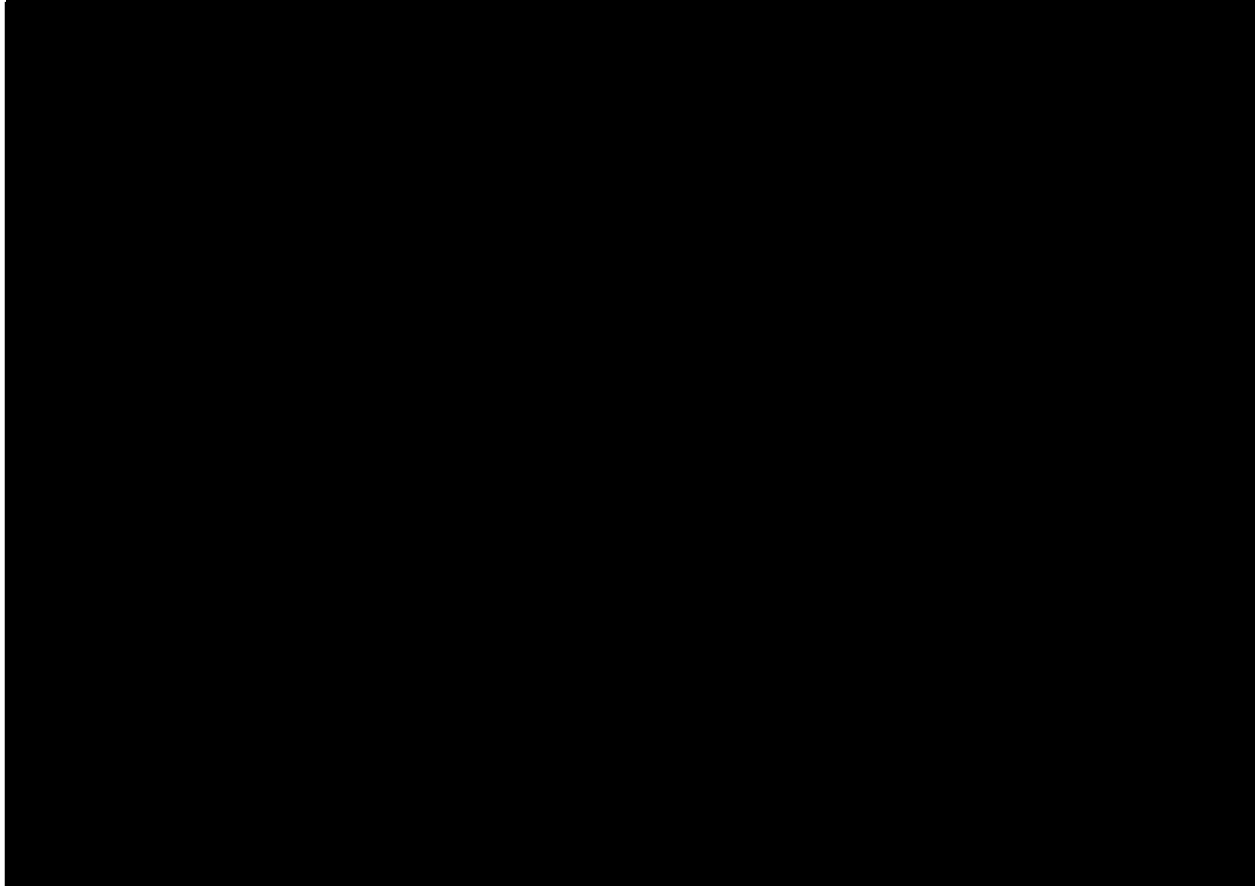


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Page 40 of 43

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Range of Previous Annual Period's Twelve Month Average Monthly 15 Minute Measured Demand in a Given Annual Period Measured in MW	Annual Minimum Charge in US\$
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Sch 1.1.3

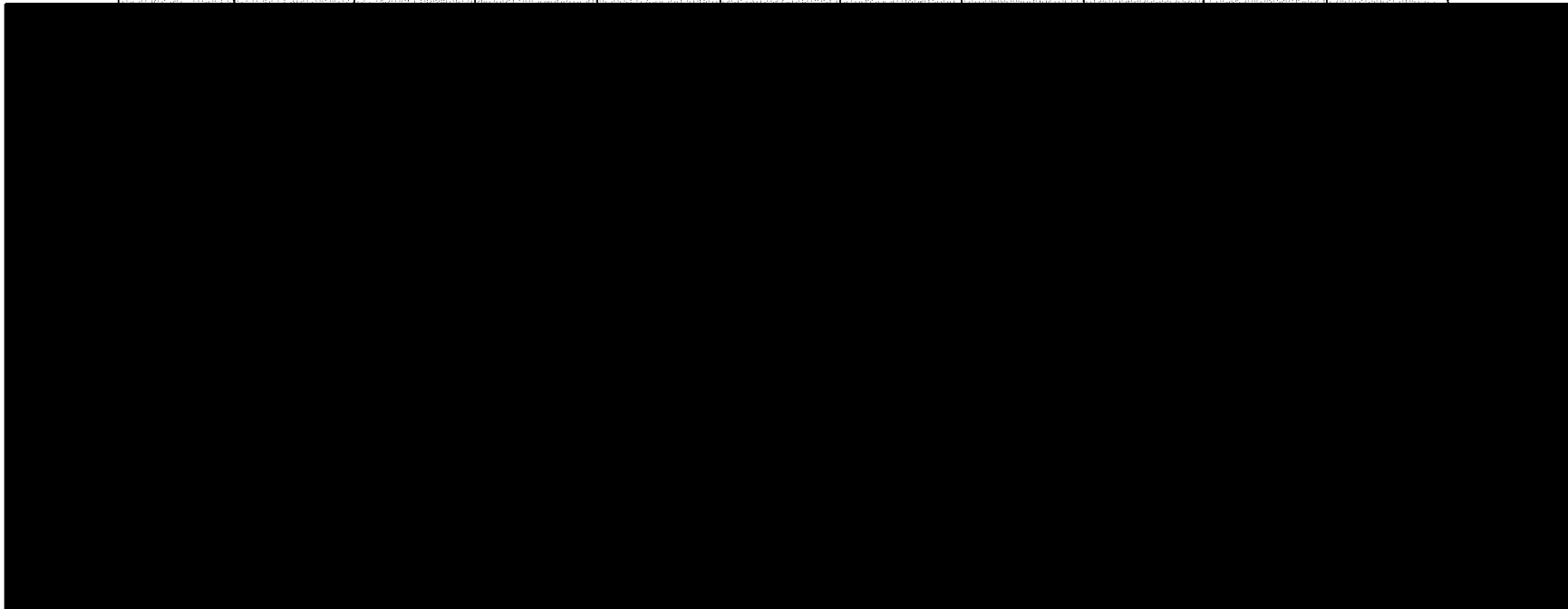


**Schedule 1.1.67
Termination Payment**

The Termination Payment will be the amount identified in Table 1, based on the Data Center’s peak fifteen (15)-minute measured demand during the Initial Term of this Agreement and the Annual Period (applicable Stub Year) in which this Agreement terminates.

Table 1

Peak 15 Minute Measured Demand Measured in MW Between:	Year of Termination									
	Service Commencement Stub Year	First Annual Period	Second Annual Period	Third Annual Period	Fourth Annual Period	Fifth Annual Period	Sixth Annual Period	Seventh Annual Period	Eighth Annual Period	Ninth Annual Period and Service Termination Stub Year*



Sch. 1.1.67

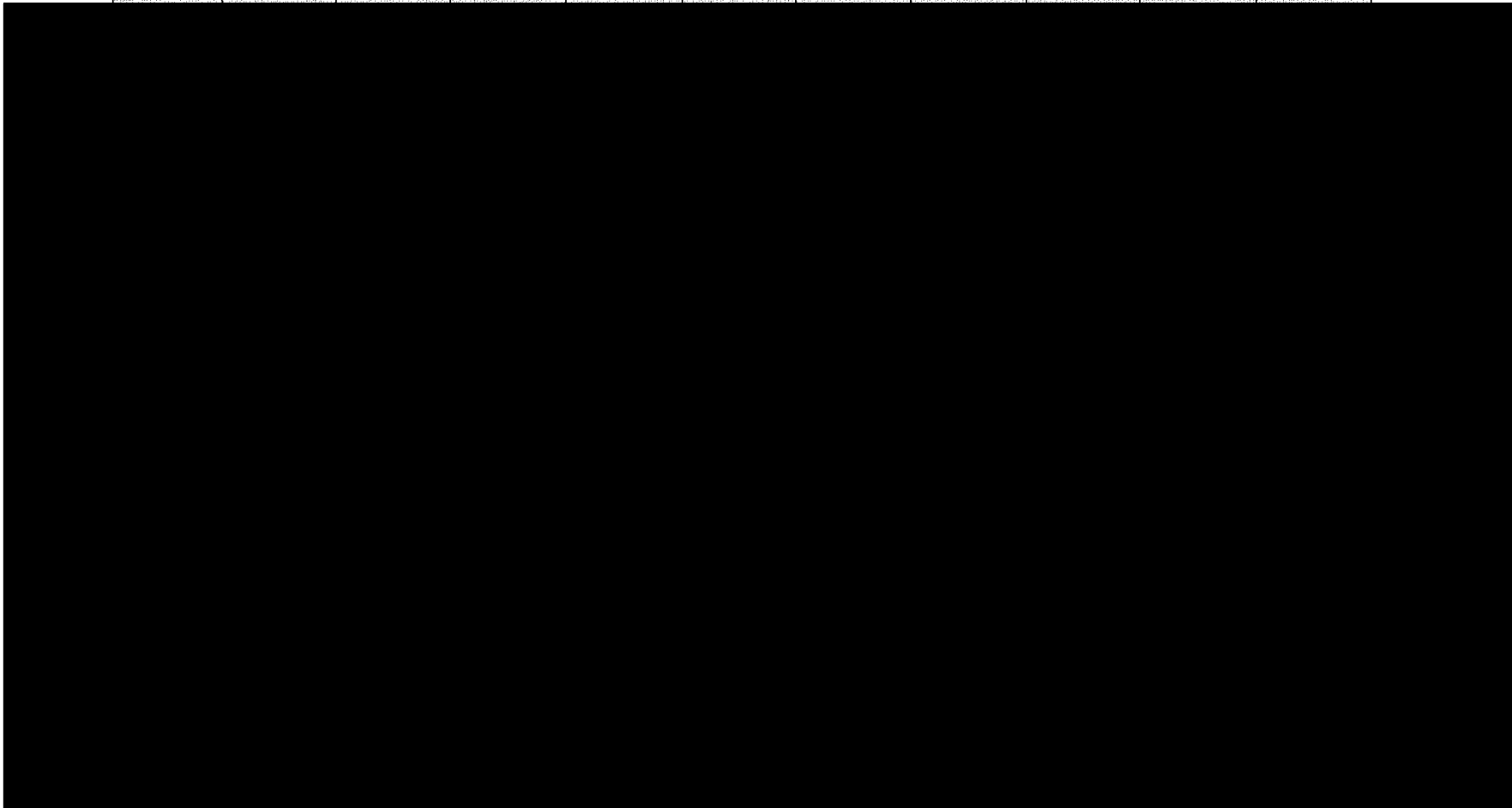


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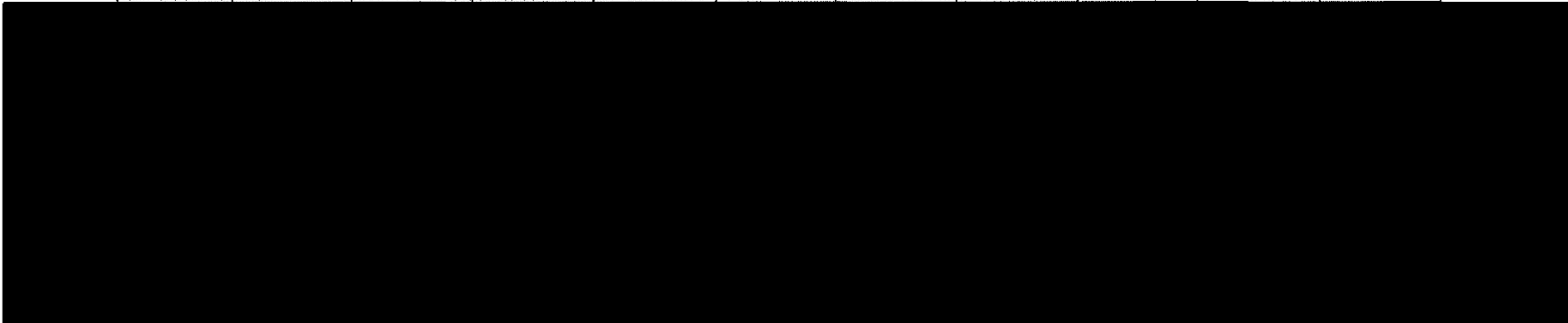
Peak 15 Minute Measured Demand Measured in MW Between:	Year of Termination									
	Service Commencement Stub Year	First Annual Period	Second Annual Period	Third Annual Period	Fourth Annual Period	Fifth Annual Period	Sixth Annual Period	Seventh Annual Period	Eighth Annual Period	Ninth Annual Period and Service Termination Stub Year*



Sch. 1.1.67



Peak 15 Minute Measured Demand Measured in MW Between:	Year of Termination									
	Service Commencement Stub Year	First Annual Period	Second Annual Period	Third Annual Period	Fourth Annual Period	Fifth Annual Period	Sixth Annual Period	Seventh Annual Period	Eighth Annual Period	Ninth Annual Period and Service Termination Stub Year*



*Termination Payment for the Service Termination Stub Year will be prorated over the number of months in the Service Termination Stub Year.

In furtherance of the foregoing, and not in limitation thereof, the Parties acknowledge that the Termination Payment is intended to help ensure that Company's customers are made whole for the loss of the Data Center load due to the termination of this Agreement for Customer's convenience in light of the incremental costs of the Clean Generation (and Company Facilities) to the Company's retail electric customers in Minnesota, North Dakota, and South Dakota and to Company's Affiliate's retail electric customers in Wisconsin and Michigan. In recognition that Company will utilize the Clean Energy to serve Company's customers throughout the NSP System, Company will use Commercially Reasonable Efforts to market and sell the Clean Energy in the MISO Real-Time and Day-Ahead Energy Markets in a manner consistent with its then current bidding strategy for NSP System resources and thereby reduce the Termination Payment by a reasonable amount in light of any revenues the Company reasonably anticipates by such sale that are in excess of the Company's costs for the Clean Energy; provided, however, that any reduction in the Termination Payment must: (1) account for the need for the Company (and to the extent applicable, Company's Affiliate) to be made whole for the incremental costs of the Clean Generation (and Company Facilities) incurred pursuant to this Agreement for the Initial Term of this Agreement; and (2) not unduly shift additional cost burdens on to Company's (or its Affiliate's) retail electric customers in Minnesota, North Dakota, South Dakota, Wisconsin, or Michigan. For the avoidance of doubt, the Parties recognize that the amounts identified in Table 1 are the maximum amounts for the Termination Payment and any marketing or sale of the Clean Energy will not increase the Termination Payment.



EXECUTION VERSION

**AMENDMENT NO. 1
TO THE
RETAIL ELECTRIC SERVICE AGREEMENT
By and Between
NORTHERN STATES POWER COMPANY
And
HONEYCRISP POWER LLC**

THIS AMENDMENT NO. 1, dated as of the 9th day of January, 2019 (“Amendment”), amends the Retail Electric Service Agreement by and between the NORTHERN STATES POWER COMPANY (“Company”) and HONEYCRISP POWER LLC (“Customer”) dated as of December 21, 2018 (“Agreement”).

WITNESSETH:

WHEREAS, Company and Customer agree to amend the Agreement, consistent with Section 9.7 of the Agreement, to the limited extent as set forth in this Amendment to correct a scrivener error.

NOW, THEREFORE, in consideration of the premises, the mutual promises and Agreements contained herein and in the Agreement and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the Parties each intending to be legally bound hereby agree as follows:

A. Amendment to Agreement.

The Parties hereby agree to amend the Agreement as follows:

1. Section B of the Recitals of the Agreement is hereby deleted in its entirety and replaced with the following:

B. Customer and/or its Affiliate will construct, own, and operate a Data Center within Company’s assigned service area, with a potential investment of more than six hundred million dollars (\$600,000,000) over the life of the project.

B. Other Provisions.

1. Unless otherwise specifically provided in this Amendment, capitalized terms in this Amendment shall have the meaning assigned to such terms in the Agreement.

2. This Amendment has been duly authorized, executed and delivered by each Party.



EXECUTION VERSION

3. Except as amended hereby, the terms and conditions of the Agreement shall remain in full force and effect. Each reference in the Agreement to the Agreement shall be a referenced to the Agreement as amended hereby.

4. This Amendment may be executed by facsimile or PDF (electronic copy) and in multiple counterparts, all of which taken together shall have the same force and effect as one and the same original instrument.

5. This Amendment shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a result of the preparation or other event of negotiation, drafting or execution hereof.

IN WITNESS WHEREOF, the Parties have duly executed this Amendment as of the date first written above.

**NORTHERN STATES POWER
COMPANY, a Minnesota Corporation**

**HONEYCRISP POWER LLC,
a Delaware limited liability company**

DocuSigned by:
Rakashi Chandarana
By: _____
52890f445897488...
Its: VP of Rates and Regulatory Affairs

DocuSigned by:
Todd Guerrero
By: _____
AFCFFE448AD1423...
Its: Authorized Signatory



Google Data Center Incremental Cost Analysis

Docket No. E002/M-19-____
 Petition - Attachment E
 Page 1 of 2

Year	Peak Load (kW)	kWh Sales					Incremental Energy Costs (\$ per kWh)					Total Incremental Energy Costs
		Summer		Winter		5 = 1 + 2 + 3 + 4	Summer		Winter		10	
		1	2	3	4		6	7	8	9		
On Peak	Off Peak	On Peak	Off Peak	Total kWh Usage	On Peak	Off Peak	On Peak	Off Peak				

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS

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HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

Year	11	12	13	14	15	16 = 10 + 12 + 13 + 14 + 15		17	18	19	20	21	22 = 21 - 16
Peak Load (kW)	Total Incremental Capacity Costs	Juris. Cost Allocation Increase to MN	MISO Costs	Total Incremental Transmission Costs	Total Incremental Costs		Rate Forecast (\$ per kWh)	Revenues Before Discount	Rate Forecast under Discount (\$ per kWh)	Total Discount	Revenues Remaining After Discount	Contribution to Margin	

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS

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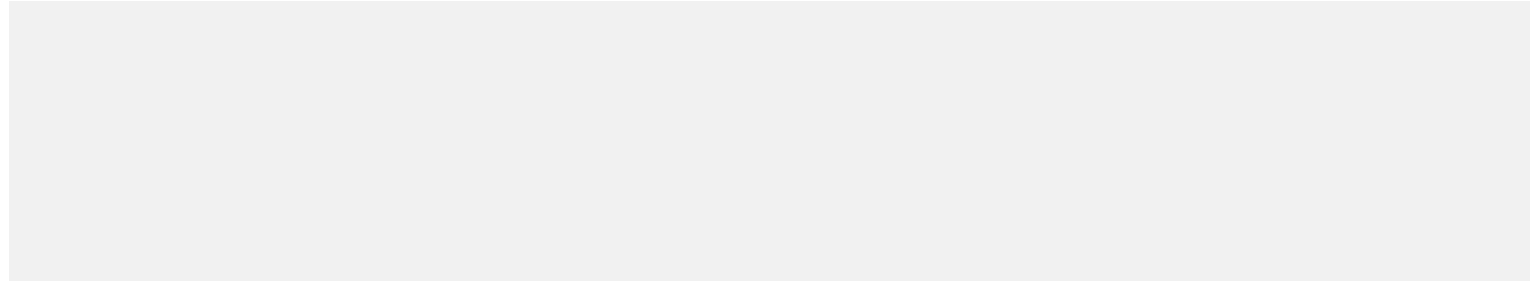
HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

Google Data Center Incremental Cost Analysis

Docket No. E002/M-19-____
 Petition - Attachment E
 Page 2 of 2

	kWh Sales					Incremental Energy Costs (\$ per kWh)				Total Incremental Energy Costs
	Summer		Winter		5 = 1 + 2 + 3 + 4	Summer		Winter		
	1	2	3	4		6	7	8	9	
Peak Load (kW)	On Peak	Off Peak	On Peak	Off Peak	Total kWh Usage	On Peak	Off Peak	On Peak	Off Peak	

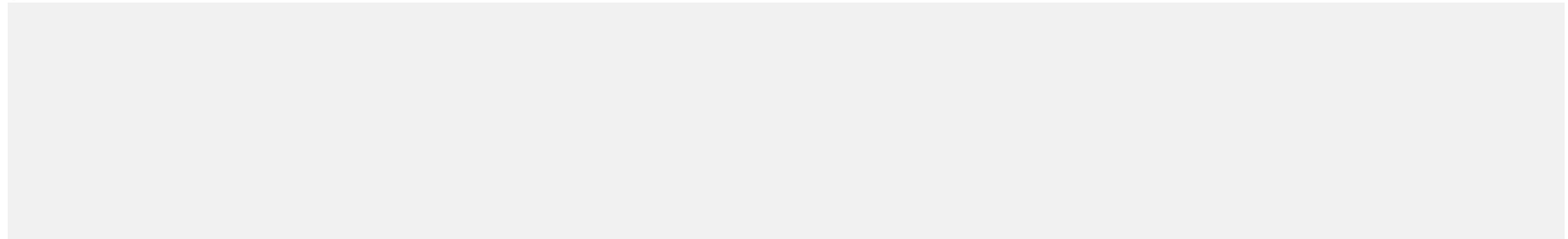
[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS



HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

11	12	13	14	15	16 = 10 + 12 + 13 + 14 + 15		17	18	19	20	21 = 18 - 20	22 = 21 - 16
Peak Load (kW)	Total Incremental Capacity Costs	Juris. Cost Allocation Increase to MN	MISO Costs	Total Incremental Transmission Costs	Total Incremental Costs		Rate Forecast (\$ per kWh)	Revenues Before Discount	Rate Forecast under Discount (\$ per kWh)	Total Discount	Revenues Remaining After Discount	Contribution to Margin

[HIGHLY CONFIDENTIAL TRADE SECRET BEGINS



HIGHLY COINFIDENTIAL TRADE SECRET ENDS]

**Becker Data Center
Renewable Sourcing Plan Net (Cost) Benefit Analysis**

Docket No. E002/M-19-____
Petition - Attachment F
Page 1 of 1

\$ in Millions

Highly Confidential Trade Secret Data is marked in Red Text.

Net (Cost) Benefit									
<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>

[HIGHLY CONFIDENTIAL TRADE SECRET DATA BEGINS

Reference Case

- High Load Growth
- Low Load Growth
- Low Load then High Load Growth
- Optimize REC Procurement
- 20% Higher Wind PPA \$/MWh
- 100% Solar
- 100% Solar + 20% Higher PPA \$/MWh

HIGHLY CONFIDENTIAL TRADE SECRET DATA ENDS]

Notes:

Reference Case

[TRADE SECRET DATA BEGINS

TRADE SECRET DATA ENDS]

High Load Growth

[TRADE SECRET DATA BEGINS

TRADE SECRET DATA ENDS]

Low Load Growth

[TRADE SECRET DATA BEGINS

TRADE SECRET DATA ENDS]

Low Load then High Load Growth

[TRADE SECRET DATA BEGINS

TRADE SECRET DATA ENDS]

Optimize REC Procurement

CONFIDENTIAL TRADE SECRET BEGINS HIGHLY CONFIDENTIAL TRADE SECRET ENDS] MW in year 10.

100% Solar

* Year 1 PPA of 300.0 MW starting [HIGHLY CONFIDENTIAL TRADE SECRET BEGINS
HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

* Year 2 PPA of 300.0 MW starting [HIGHLY CONFIDENTIAL TRADE SECRET BEGINS
HIGHLY CONFIDENTIAL TRADE SECRET ENDS]

* Year 9 PPA of 575.6 MW starting [HIGHLY CONFIDENTIAL TRADE SECRET BEGINS
HIGHLY CONFIDENTIAL

TRADE SECRET ENDS]

EXECUTION VERSION

COMPETITIVE RESPONSE RIDER AGREEMENT
between
NORTHERN STATES POWER COMPANY
and
HONEYCRISP POWER LLC
for the application of the
COMPETITIVE RESPONSE RIDER
to
RETAIL ELECTRIC SERVICE AGREEMENT

THIS COMPETITIVE RESPONSE RIDER AGREEMENT (this "Agreement"), is entered into as of the 21st day of December 2018 ("Effective Date"), by and between Northern States Power Company, a Minnesota corporation ("Company"), and Honeycrisp Power LLC, a Delaware limited liability company ("Customer"). Company and Customer may each be referred to as a "Party" and together, the "Parties".

WITNESSETH:

WHEREAS, Customer will own and operate an up to [REDACTED]-megawatt peak load data center facility ("Data Center") in Becker, MN 55308 ("Premises"); and

WHEREAS, Company will provide electric service to Customer for the Data Center at the Premises pursuant to that certain Retail Electric Service Agreement dated on a date even herewith by and between the Parties ("ESA"); and

WHEREAS, in 2018, Customer made the decision depending on the electric supply conditions described herein to invest at least five hundred million dollars (\$500,000,000) in the Data Center; and

WHEREAS, the Data Center investment would not be made but for the electric supply conditions described herein and in the ESA; and

WHEREAS, Customer has alternative locations outside of Minnesota at which to construct the Data Center and locations which compete against building, owning, and operating the Data Center at the Premises; and

WHEREAS, at this time, Customer requires adjustments to certain rates it would pay for electric service for the Data Center to induce it to locate the Data Center in Company's service territory, to ensure the long term economic viability of the Data Center, and to justify investment in the Data Center as well as potential future expansions; and

WHEREAS, at this time, Company has determined that provision of electric service to meet the current and potential future energy requirements of the Data Center pursuant to the terms and conditions of this Agreement will not adversely affect the adequacy, reliability, or costs of service to Company's other customers; and



EXECUTION VERSION

WHEREAS, at this time, Company has determined that providing electric service to the Data Center will not harm Company’s other customers as a result of the incremental contributions to certain Company’s costs over the term of this Agreement and beyond;

NOW, THEREFORE, for and in consideration of the mutual promises hereinafter contained, Customer and Company hereby agree to and with each other as follows:

1. DEFINITIONS

In addition to those terms otherwise defined herein, whenever used herein, the following terms will have the respective meanings set forth below, unless a different meaning is plainly required by the context, and when the defined meaning is intended, the term is capitalized:

- A. “Agreement” has the meaning set forth in the introductory paragraph.
- B. “Ancillary Agreements” means the ESA and the Interconnection Agreement, as those terms are defined in the ESA.
- C. “Base Energy” means the MWh per month of energy use of the Data Center.
- D. “CCRC” means the Conservation Cost Recovery Charge included in base energy rates in all Company tariffs, as such tariffs as may be revised from time to time or any successor rate.
- E. “Clean Generation” has the same meaning as in the ESA.
- F. “Commercial Operation Date” has the same meaning as in the ESA.
- G. “Commercially Reasonable” or “Commercially Reasonable Efforts” has the same meaning as in the ESA.
- H. “Commission” means the Minnesota Public Utilities Commission, the regulatory agency having jurisdiction over the retail electric service of Company in the state of Minnesota (including the electric service covered by this Agreement and the ESA), and includes any successor regulatory agency.
- I. “Company” has the meaning set forth in the introductory paragraph of this Agreement.
- J. “Competitive Response Rider Tariff” means that certain Competitive Response Rider, Minnesota Rate Book – No. 2, Section No. 5, Sheet No. 122, which shall be amended to accommodate the provisions of this Agreement, and whereas such amendment is a necessary condition to the effectiveness of this Agreement, as may be revised from time to time, or any successor rate.
- K. “CRR Rate” means the energy charge and demand charge adjustments described in Section 2 below, titled “Competitive Response Rider Rate,” which has been



EXECUTION VERSION

agreed to by Company and Customer under the terms and conditions of the Competitive Response Rider Tariff.

- L. "CRR Rate Value" means the difference between the standard tariff and the CRR Rate times the energy usage of the Data Center in a defined period.
- M. "Customer" has the meaning set forth in the introductory paragraph of this Agreement.
- N. "Data Center" has the meaning set forth in the recitals of this Agreement.
- O. "Effective Date" has the meaning set forth in introductory paragraph of this Agreement.
- P. "Electric Service Commencement Date" has the same meaning as in the ESA.
- Q. "ESA" has the meaning set forth in the recitals.
- R. "Extension Negotiations" has the meaning set forth in Section 3 of this Agreement.
- S. "Fuel Clause" means the rates resulting from the Fuel Clause Rider, Minnesota Rate Book – No. 2, Section No. 5, Sheet No. 91, as may be revised from time to time or any successor rate.
- T. "General TOD Tariff" means the retail customer rate tariff that is applicable to the Customer and selected by Customer in the ESA, including without limitation all applicable riders and as may be revised from time to time or any successor rate. The currently effective General TOD Tariff is provided in Attachment A to this Agreement, for reference.
- U. "Good Utility Practice" has the same meaning as in the ESA.
- V. "kW" means kilowatt.
- W. "kWh" means kilowatt-hour.
- X. "MISO" means the Midcontinent Independent System Operator, Inc. or any successor organization.
- Y. "MW" means megawatt.
- Z. "MWh" means megawatt-hour.
- AA. "Parties" has the meaning set forth in the introductory paragraph of this Agreement.
- BB. "Party" has the meaning set forth in the introductory paragraph of this Agreement.



EXECUTION VERSION

- CC. “Premises” has the meaning set forth in the recitals of this Agreement.
- DD. “Tariff” means Company’s Minnesota Electric Rate Book, as may be revised from time to time.
- EE. “Term” has the meaning set forth in Section 3 of this Agreement.

2. COMPETITIVE RESPONSE RIDER DISCOUNT

Subject to approval by the Commission of (a) this Agreement and (b) amendments to the Competitive Response Rider Tariff, as of the Electric Service Commencement Date and until the end of the Term of this Agreement, the CRR Rate will be applied to Customer’s purchase of retail electric service under the ESA, as follows:

[TRADE SECRET BEGINS



TRADE SECRET ENDS]

A sample calculation of the CRR Rate is included in Attachment B, and is also marked as TRADE SECRET.

3. TERM AND EFFECT ON AGREEMENT

This Agreement will become effective as of the Effective Date. The application of the CRR Rate will begin on the Electric Service Commencement Date, or such other date as may be ordered by the Commission, and be coterminous with the Initial Term of the ESA (“Term”). In the event that the ESA is terminated prior to the expiration of the Initial Term of the ESA, this Agreement



EXECUTION VERSION

will terminate at the same time as the ESA. This Agreement also may be terminated by mutual agreement of the Parties, evidenced in writing, prior to the expiration of the Term.

This Agreement will not be renewed and will be of no further force and effect upon the expiration of the Term; provided, however, that the provisions of this Agreement necessary for either Company or Customer, as the case may be, to enforce any of its rights and obligations as against Customer or Company, as the case may be, shall survive the termination of this Agreement for as long a period as is necessary for Company or Customer, as the case may be, to enforce its rights.

Notwithstanding any provision of this Agreement to the contrary, at a time mutually agreeable to the Parties but no sooner than the fifth (5th) anniversary of the Electric Service Commencement Date, the Parties will meet and confer and work in good faith to negotiate potential rates, terms, and conditions for a continued CRR Rate applicable to retail electric service to the Data Center beyond the Term, which includes, but is not limited to, potential amendments and/or extensions to this Agreement, the ESA, and other Ancillary Agreements (“Extension Negotiations”). In furtherance of the foregoing, but not in limitation thereof, the Extension Negotiations are to be based on the following principles: (a) recognition of Customer’s investment in the Data Center and Company’s investment in facilities to serve the Data Center; (b) recognition of Company’s obligation to serve; (c) a presumption that the Data Center load will not exceed [REDACTED] MW; (d) the interest of both Parties to provide continuing rate reduction to Customer under this Agreement – to the extent Commercially Reasonable and consistent with Good Utility Practice – in an amount of not less than (i) [REDACTED] percent ([REDACTED]%) from the then currently effective applicable rate, and (ii) [REDACTED] percent ([REDACTED]%) from the then currently effective applicable rate in the event Company attains the grid renewables percentage set forth in Section 5.4.2 of the ESA; (e) recognition of the potential changes in the marketplace with respect to Clean Generation as defined in the ESA; (f) [REDACTED]

[REDACTED] (g) recognition of Company’s then currently effective rates and Company’s forecasted rates; (h) recognition of Company’s system-wide capacity position; (i) recognition of then currently existing market prices for electrical energy, capacity, and natural gas; and; (j) that any agreement that results from the Extension Negotiations is subject to approval of the Commission, including without limitation, the appropriate ratemaking treatment as may be requested by Company with respect to any discount agreed to by the Parties.

4. TERMS AND CONDITIONS

The CRR Rate will be applied to Customer’s electric service at the Data Center, and be subject to the terms and conditions of the then currently applicable General TOD Tariff, the Competitive Response Rider Tariff and the General Rules and Regulations of Company in the Tariff on file with the Commission as they now exist or may hereafter be changed. Customer has reviewed the currently effective rules and regulations.



EXECUTION VERSION

5. COMPETITIVE MARKET CONDITIONS

Customer represents and warrants that to its knowledge it has submitted truthful information to Company, which information Company may rely on in its application to the Commission for approval of this Agreement, the CRR Rate, the ESA and the other Ancillary Agreements, and that such application is subject to approval by the Commission. Company is entering into this Agreement in reliance on such representations made by the Customer.

6. CONSERVATION PLAN

Customer and Company agree to develop and implement a comprehensive energy conservation program which ensures that the Data Center operations achieve a maximum economically appropriate efficiency level.

Notwithstanding any terms of this Agreement to the contrary, the then applicable and effective Conservation Improvement Program Rider – including, without limitation, the then currently effective charges for the Conservation Improvement Plan Adjustment Factor and Conservation Cost Recovery Charge (currently at \$0.001813/kWh and \$0.003133/kWh, respectively) – and the CCRC of \$0.003133/kWh will be applied to Customer’s electric usage under the ESA unless and until Customer applies for and receives from the Commission a permanent exemption from the Conservation Improvement Program as a result of Customer’s energy conservation program. In the event such exemption is in effect, Customer will consequently qualify for an exemption from the obligations under this Section 6.

7. REGULATORY APPROVAL AND AUTHORITY

This Agreement is expressly conditioned upon the subsequent approval by the Commission of this Agreement and any revisions to Company’s Tariff necessary to implement this Agreement, which approval will be on terms and conditions the same as those requested in the application(s) filed for such approval. For the avoidance of doubt, Company intends to seek approval of the Commission for both this Agreement and appropriate ratemaking treatment of the CRR Rate Value, in Company’s sole discretion. Customer and Company will use Commercially Reasonable Efforts to secure such approval from the Commission at the earliest reasonably practicable time. In the event that the Commission does not approve this Agreement in its entirety, approve Company’s requested ratemaking treatment of the CRR Rate Value, or otherwise conditions such approval in a way that is not acceptable to either Party or both Parties, in their sole discretion, then either or both Customer or Company may withdraw from this Agreement by giving to the other Party not less than three (3) days written notice stating the Party’s intention to terminate this Agreement at the expiration of such three (3)-day period. In the event that a Party so terminates this Agreement, then this Agreement will be null and void as of the date of such termination and neither Party will have any further liability or obligation to the other Party under this Agreement.

This Agreement has been entered into by the Parties with the mutual intent that this Agreement will continue in full force and effect in accordance with its terms throughout the Term, subject, however, to the Commission’s regulation of Company. Both Parties agree that during the Term,



EXECUTION VERSION

they will not petition the Commission for or otherwise seek or support provisions in any order of the Commission which would cancel, terminate, or modify the provisions of this Agreement in any way without the express written consent of the other Party, such consent to be withheld in either Party's sole discretion.

Customer agrees that it will reasonably participate in any Minnesota retail rate proceeding as necessary or as requested by Company to present evidence with regard to this Agreement, including various provisions and the rationale thereof. Participation in such rate proceedings will be at Customer's own cost and expense.

It is understood by the Parties that the approval of this Agreement by the Commission will constitute a determination that this Agreement and Company's provision of service hereunder is in the public interest, and the payments Customer will make to Company exceed the incremental cost of providing service to Customer.

Company's obligations under this Agreement are expressly subject to and conditioned on Company obtaining the explicit, non-contingent, authority from the Commission to allow the CRR Rate to be recovered through Company's rates from customers other than Customer.

[SIGNATURE PAGE FOLLOWS]



EXECUTION VERSION

IN WITNESS WHEREOF, the Parties have executed this Competitive Response Rider Agreement as of the date first hereinabove written.

NORTHERN STATES POWER COMPANY

By: Christopher Clark

Name: Christopher B. Clark

Title: President

HONEYCRISP POWER LLC

By: Todd Guerrero

Name: Todd Guerrero

Title: Authorized Signatory

[SIGNATURE PAGE TO COMPETITIVE RESPONSE RIDER AGREEMENT]



EXECUTION VERSION

**Attachment A
General TOD Tariff**

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EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE
RATE CODE A15, A17, A19

Section No. 5
26th Revised Sheet No. 29

AVAILABILITY-MANDATORY

Effective November 1, 2007, this rate schedule is mandatory for any non-residential customer for general service having a 15-minute measured demand equal to or greater than 1,000 kW for at least 4 of the past 12 consecutive months. Customer will remain on this rate schedule on a mandatory basis unless their demand remains below 1,000 kW for 12 consecutive months.

AVAILABILITY-OPTIONAL

This rate schedule is optional for any non-residential customer for general service where customer is not required to be on a time-of-day rate.

DETERMINATION OF CUSTOMER BILLS

Customer bills shall reflect energy charges (if applicable) based on customer's kWh usage; plus a customer charge (if applicable), plus demand charges (if applicable) based on customer's kW billing demand as defined below. Bills may be subject to a minimum charge based on the monthly customer charge and / or certain monthly or annual demand charges. Bills also include applicable riders, adjustments, surcharges, voltage discounts, and energy credits. Details regarding the specific charges applicable to this service are listed below.

RATE

Customer Charge per Month – Time Of Day Metered (A15)		\$29.64	
-- kWh Metered (A17)		\$25.64	
-- Unmetered (A19)		\$21.64	
Service at Secondary Voltage	<u>Oct-May</u>		<u>Jun-Sep</u>
Demand Charge per Month per kW			
On Peak Period Demand	\$11.00		\$15.54
Off Peak Period Demand in Excess of On Peak Period Demand	\$2.35		\$2.35
Energy Charge per kWh			
On Peak Period Energy		\$0.05098	
Off Peak Period Energy		\$0.02458	
Energy Charge Credit per Month per kWh			
All kWh in Excess of 400 Hours Times the On Peak Period Billing Demand, Not to Exceed 50% of Total kWh		\$0.01693	
		<u>January - December</u>	
Voltage Discounts per Month	<u>Per kW</u>		<u>Per kW</u>
Primary Voltage	\$0.80		\$0.00108
Transmission Transformed Voltage	\$1.55		\$0.00274
Transmission Voltage	\$2.36		\$0.00285

(Continued on Sheet No. 5-30)

Date Filed:	10-01-18	By:	Christopher B. Clark	Effective Date:	01-01-19
			President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826			Order Date:	06-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
15th Revised Sheet No. 30

In addition, customer bills under this rate are subject to the following adjustments and/or charges.

FUEL CLAUSE

Bills are subject to the adjustments provided for in the Fuel Clause Rider.

RESOURCE ADJUSTMENT

Bills are subject to the adjustments provided for in the Conservation Improvement Program Adjustment Rider, the State Energy Policy Rate Rider, the Renewable Development Fund Rider, the Transmission Cost Recovery Rider, the Renewable Energy Standard Rider and the Mercury Cost Recovery Rider.

ENVIRONMENTAL IMPROVEMENT RIDER

Bills are subject to the adjustments provided for in the Environmental Improvement Rider.

SURCHARGE

In certain communities, bills are subject to surcharges provided for in a Surcharge Rider.

LOW INCOME ENERGY DISCOUNT RIDER

Bills are subject to the adjustment provided for in the Low Income Energy Discount Rider.

The following are terms and conditions for service under this tariff.

LATE PAYMENT CHARGE

Any unpaid balance over \$10.00 is subject to a 1.5% late payment charge or \$1.00, whichever is greater, after the date due. The charge may be assessed as provided for in the General Rules and Regulations, Section 3.5.

DEFINITION OF PEAK PERIODS

The on peak period is defined as those hours between 9:00 a.m. and 9:00 p.m. Monday through Friday, except the following holidays: New Year's Day, Good Friday, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day. When a designated holiday occurs on Saturday, the preceding Friday will be designated a holiday. When a designated holiday occurs on Sunday, the following Monday will be designated a holiday. The off peak period is defined as all other hours. Definition of on peak and off peak period is subject to change with change in Company's system operating characteristics.

(Continued on Sheet No. 6-31)

Date Filed:	11-02-15	By:	Christopher B. Clark	Effective Date:	10-01-17
			President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826			Order Date:	06-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
8th Revised Sheet No. 31

DETERMINATION OF ON PEAK PERIOD DEMAND

The actual on peak period demand in kW shall be the greatest 15-minute load for the on peak period during the month for which the bill is rendered. The adjusted demand in kW for billing purposes shall be determined by dividing the actual on peak demand by the power factor expressed in percent but not more than 90%, multiplying the quotient so obtained by 90%, and rounding to the nearest whole kW. In no month shall the on peak period demand to be billed be considered as less than the current month's adjusted on peak period demand in kW, or 50% of the greatest monthly adjusted on peak period demand in kW during the preceding 11 months. In no month shall the on peak billing demand be greater than the value in kW determined by dividing the kWh sales for the billing month by 100 hours per month.

The greatest monthly adjusted on peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

DETERMINATION OF OFF PEAK PERIOD DEMAND IN EXCESS OF ON PEAK PERIOD DEMAND

The actual off peak period demand in kilowatts shall be the greatest 15-minute load for the off peak period during the month for which the bill is rendered rounded to the nearest whole kW. In no month shall the off peak period demand for billing purposes be considered as less than the current month's actual off peak period demand in kW, or 50% of the greatest monthly actual off peak period demand in kW during the preceding 11 months.

The greatest monthly adjusted off peak period demand in kW during the preceding 11 months shall not include the additional demand which may result from customer's use of standby capacity contracted for under the Standby Service Rider.

The off peak period demand in excess of on peak period demand in kW to be billed shall be determined by subtracting the billing on peak period demand from the actual off peak period demand as defined above only the off peak period demand is greater.

POWER FACTOR

For three phase customers with services above 200 amperes, or above 480 volts, the power factor for the month shall be determined by permanently installed metering equipment. For all single phase customers and three phase customers with services 200 amperes or less, a power factor of 90% will be assumed.

(Continued on Sheet No. 5-32)

Date Filed:	11-02-15	By:	Christopher B. Clark	Effective Date:	10-01-17
			President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826			Order Date:	08-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401

MINNESOTA ELECTRIC RATE BOOK - MPUC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. 5
6th Revised Sheet No. 32

COMPETITIVE SERVICE

Competitive Service is available under this schedule subject to the provisions contained in the Competitive Response Rider.

STANDBY SERVICE

Standby Service is available under this schedule subject to the provisions contained in the Standby Service Rider.

MINIMUM DEMAND TO BE BILLED

The monthly minimum on peak period billing demand shall not be less than provided above.

SPLIT SERVICE

When approved by Company, customer's service may be split between General Service and General Time of Day Service rates. Only Company approved storage space cooling and storage space heating equipment qualifies for the General Time of Day Service portion of a split service installation. The thermal storage equipment shall be permanently wired, separately served and metered, and at no time connected to the general service portion of the split service installation. Each portion of customer's split service installation will be considered separately for all other rate application purposes.

OPTIONAL TRIAL SERVICE

Customers may elect time of day service for a trial period of three months. If a customer chooses to return to non-time of day service after the trial period, the customer will pay a charge of \$35.00 for removal of time of day metering equipment.

TERMS AND CONDITIONS OF SERVICE

1. Alternating current service is provided at the following nominal voltages:
 - a. Secondary Voltage: Single or three phase from 208 volts up to but not including 2,400 volts,
 - b. Primary Voltage: Three phase from 2,400 volts up to but not including 69,000 volts,
 - c. Transmission Transformed Voltage: Three phase from 2,400 volts up to but not including 69,000 volts; where service is provided at the Company's disconnecting means of a distribution substation transformer, or
 - d. Transmission Voltage: Three phase at 69,000 volts or higher.

Service voltage available in any given case is dependent upon voltage and capacity of Company lines in vicinity of customer's premises.

(Continued on Sheet No. 5-32.1)

Date Filed:	11-02-15	By: Christopher B. Clark	Effective Date:	10-01-17
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826		Order Date:	08-12-17



EXECUTION VERSION

Northern States Power Company, a Minnesota corporation
Minneapolis, Minnesota 55401
MINNESOTA ELECTRIC RATE BOOK - MPRC NO. 2

GENERAL TIME OF DAY SERVICE (Continued)
RATE CODE A15, A17, A19

Section No. .5
5th Revised Sheet No. 32.1

TERMS AND CONDITIONS OF SERVICE (Continued)

- 2. Transmission Transformed Service is available only to customers served by an exclusively dedicated distribution feeder. Customer will be responsible for the cost of all facilities necessary to interconnect at the Company's disconnecting means of a distribution substation transformer.
- 3. Transmission Service is available at transmission voltage, subject to the terms and conditions contained in the Company's General Rules and Regulations, Section 5.1(B).
- 4. Customer selecting the above time of day rate schedule will remain on this rate for a period of not less than 12 months.
- 5. If a customer has a billing demand of less than 25 kW for 12 consecutive months, the customer will be given the option of returning to the Small General Time of Day Service schedule.
- 6. Optional Metering Service: Optional metering is available subject to the provisions in the General Rules and Regulations, Section 1.5, for the following applications:
 - a. Kilowatt-hour Metered Service: For applications where a non-time of day meter is used, the time of day metering charge will be waived and the applicable lower monthly Customer Charge shall apply.
 - b. Unmetered Service: This rate is for applications where no metering is installed and the applicable lower monthly Customer Charge shall apply. If requested by Company, the customer agrees to receive one or more combined bills for all their unmetered service locations. For purposes of applying the appropriate customer service charge, one customer service charge shall be applied for every point of delivery. A point of delivery shall be any location where a meter would otherwise be required under this schedule.

Date Filed:	11-02-15	By:	Christopher B. Clark	Effective Date:	10-01-17
			President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/GR-15-826			Order Date:	06-12-17



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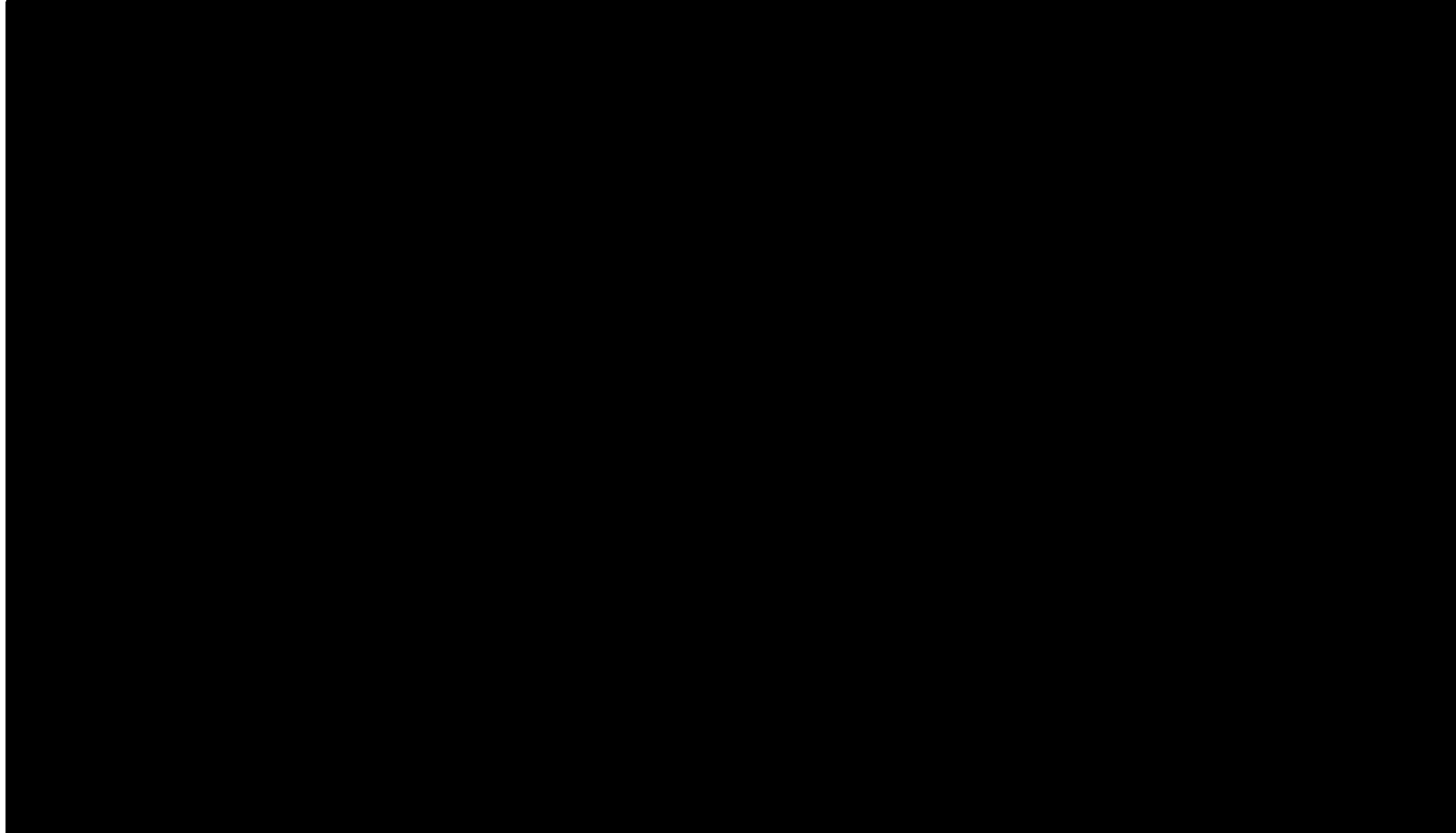
**Attachment B
Sample CRR Rate Calculation**

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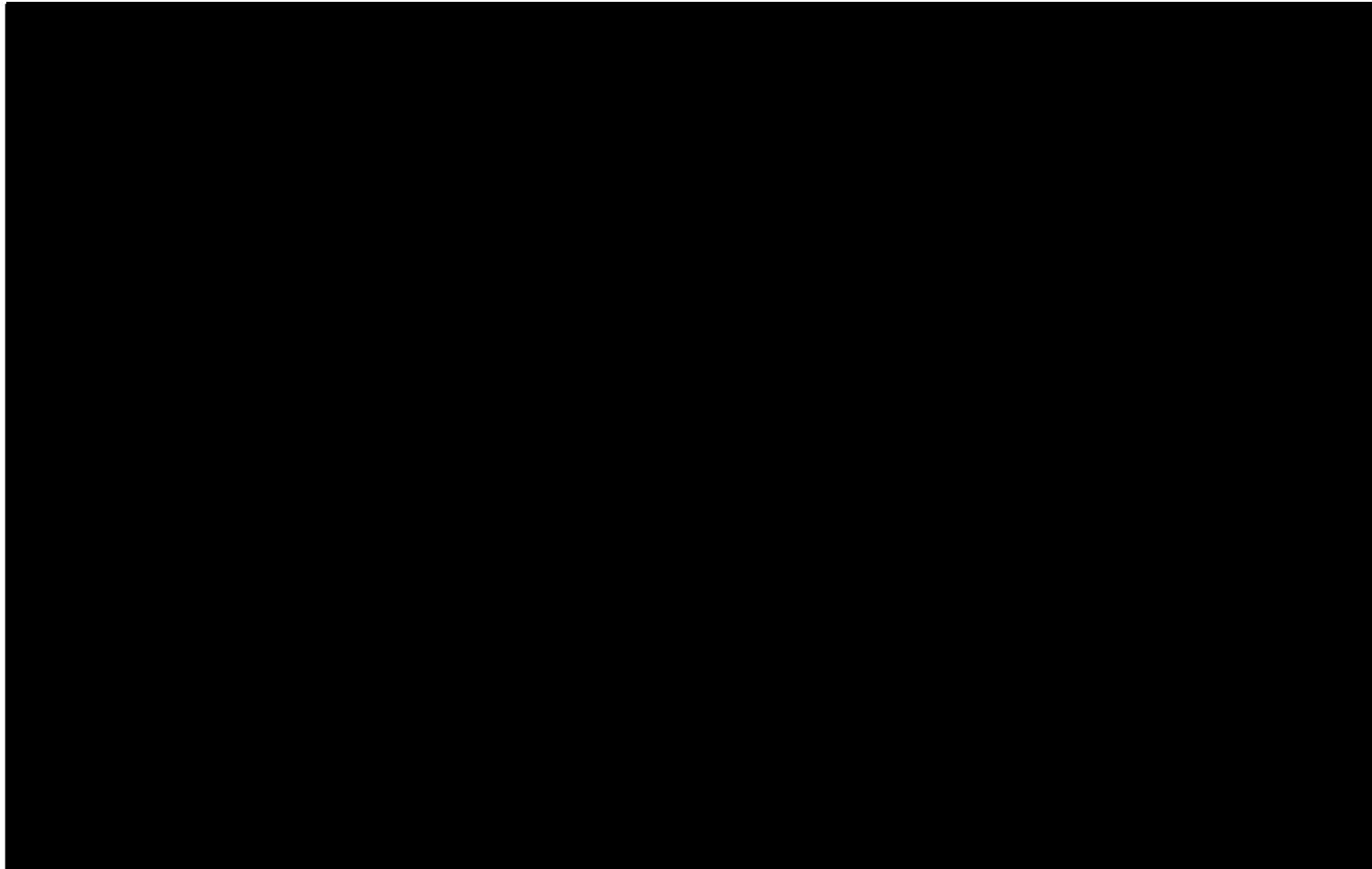
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Docket No. E002/M-19-____
Petition - Attachment G
Page 17 of 19

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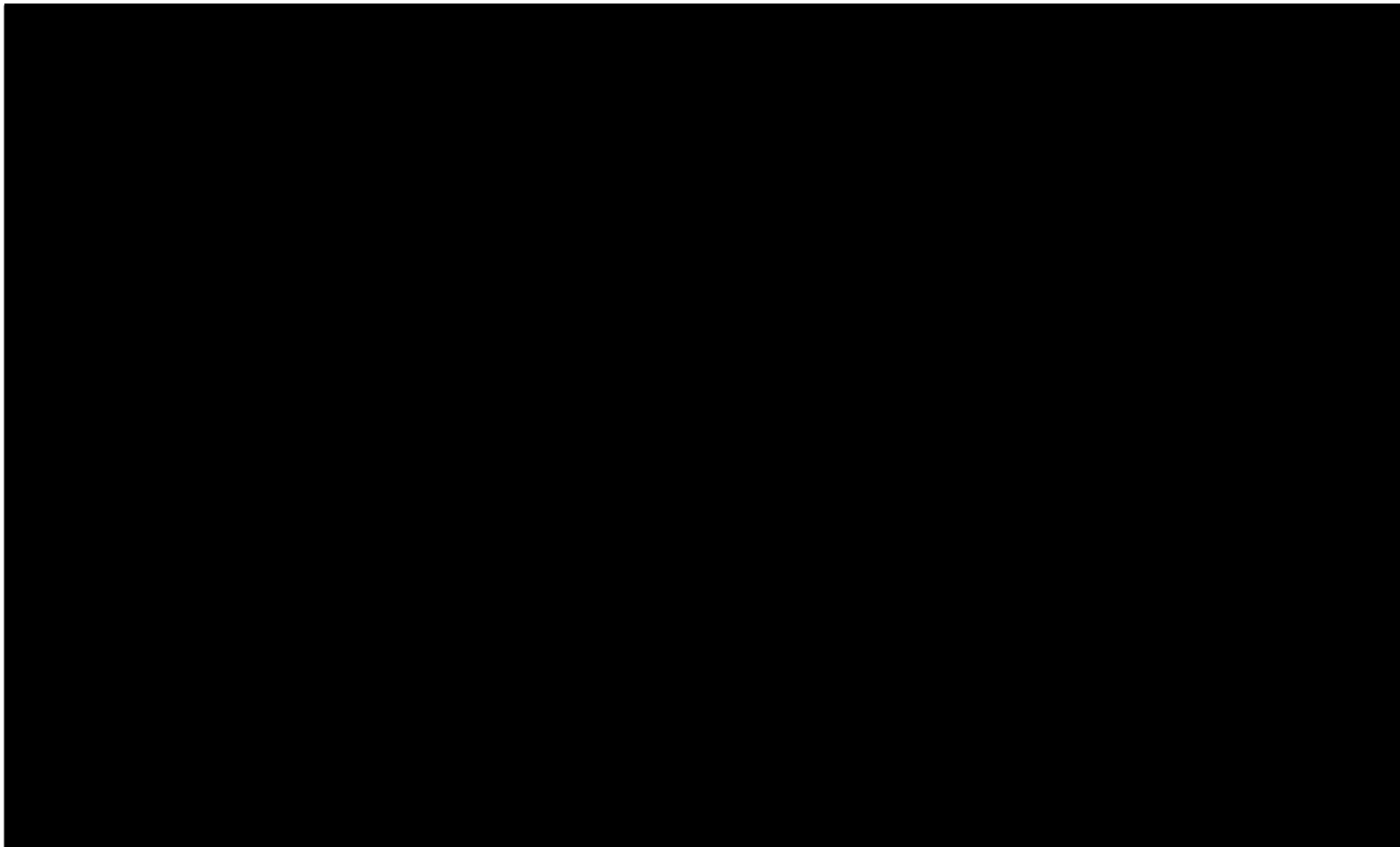


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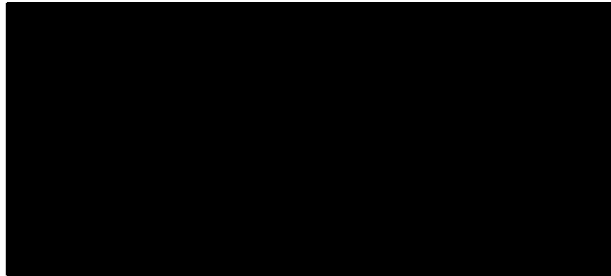
PUBLIC DOCUMENT—NOT PUBLIC DATA HAS BEEN EXCISED

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Docket No. E002/M-19-____
Petition - Attachment G
Page 19 of 19

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... TRADE SECRET ENDS]



EXECUTION VERSION

**AMENDMENT NO. 1
TO THE
COMPETITIVE RESPONSE RIDER AGREEMENT
between
NORTHERN STATES POWER COMPANY
and
HONEYCRISP POWER LLC**

THIS AMENDMENT NO. 1, dated as of the 9th day of January, 2019 (“Amendment”), amends the Competitive Response Rider Agreement by and between the NORTHERN STATES POWER COMPANY (“Company”) and HONEYCRISP POWER LLC (“Customer”) dated as of December 21, 2018 (“Agreement”).

WITNESSETH:

WHEREAS, Company and Customer agree to amend the Agreement to the limited extent as set forth in this Amendment to correct a scrivener error.

NOW, THEREFORE, in consideration of the premises, the mutual promises and Agreements contained herein and in the Agreement and other good and valuable consideration, the receipt, sufficiency and adequacy of which are hereby acknowledged, the Parties each intending to be legally bound hereby agree as follows:

A. Amendment to Agreement.

The Parties hereby agree to amend the Agreement as follows:

1. The third Recital of the Agreement is hereby deleted in its entirety and replaced with the following:

WHEREAS, in 2018, Customer made the decision depending on the electric supply conditions described herein to invest at least six hundred million dollars (\$600,000,000) in the Data Center; and

B. Other Provisions.

1. Unless otherwise specifically provided in this Amendment, capitalized terms in this Amendment shall have the meaning assigned to such terms in the Agreement.
2. This Amendment has been duly authorized, executed and delivered by each Party.
3. Except as amended hereby, the terms and conditions of the Agreement shall remain in full force and effect. Each reference in the Agreement to the Agreement shall be a referenced to the Agreement as amended hereby.
4. This Amendment may be executed by facsimile or PDF (electronic copy) and in



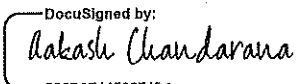
EXECUTION VERSION

multiple counterparts, all of which taken together shall have the same force and effect as one and the same original instrument.

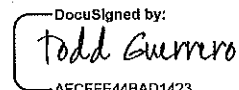
5. This Amendment shall be considered for all purposes as prepared through the joint efforts of the Parties and shall not be construed against one Party or the other as a result of the preparation or other event of negotiation, drafting or execution hereof.

IN WITNESS WHEREOF, the Parties have duly executed this Amendment as of the date first written above.

**NORTHERN STATES POWER
COMPANY, a Minnesota Corporation**

By: 
Its: VP of Rates and Regulatory Affairs

**HONEYCRISP POWER LLC,
a Delaware limited liability company**

By: 
Its: Authorized Signatory



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MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2

COMPETITIVE RESPONSE RIDER

Section No. 5
~~5th~~^{6th} Revised Sheet No. 122

AVAILABILITY

Available at Company's discretion to demand-metered commercial and industrial customers that are subject to effective competition.

Effective competition exists if a customer is located in Company's service territory and has the ability to obtain its energy requirements from an energy supplier not rate regulated by the Minnesota Public Utilities Commission-
("Alternate Supplier") for:

1. Existing customers with a minimum load of 2 MW that are located in Company's service territory and subject to effective competition by having the ability to obtain its energy requirements from an Alternate Supplier, or
2. New customers with a minimum initial load of 10 MW with the ability to increase total load to 75 MW within five years that are subject to effective competition by having the ability to locate a new facility outside Company's service territory with energy requirements provided by an Alternate Supplier.

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RATE

Standard service rates and provisions, including controllable service provisions, apply except the level of the demand charges, energy charges, or both may be reduced for each customer as described below.

TERMS AND CONDITIONS OF SERVICE

1. Customer must provide Company with information that documents that service to the customer is subject to effective competition. The Company will treat information provided by the customer to the Company concerning load ~~levels and/or~~ effective competition that meets the definition of trade secret information under the Minnesota Government Data Practices Act ("Act") as trade secret information and, if provided to the Commission or other state agency, will request that the Commission or any other state agency treat the information as trade secret under the Act.-
2. Minimum load served under this Rider is 2 MW for existing customers and 10 MW for new customers. Any rate offered under this Rider shall not be available for any month in which the load served under this Rider falls below the required minimum load level~~2 MW~~.
3. Customer must execute an Electric Service Agreement with Company, or amend its existing Electric Service Agreement with the Company, to include:
 - a. The rate under this Rider, which:
 - i) must recover at least the incremental cost of providing service, including the cost of incremental capacity that is to be added while the rate is in effect and any applicable on peak or off peak differential;
 - ii) must not exceed the difference between the standard tariff and the cost to the customer of the lowest cost competitive energy supply; and
 - iii) includes an annual minimum charge to fully recover distribution costs.

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(Continued on Sheet No. 5-123)

Date Filed: ~~44-02-4501-10-19~~ By: Christopher B. Clark Effective Date: ~~10-01-17~~
President, Northern States Power Company, a Minnesota corporation
Docket No. E002/~~GR-15-826M-19-~~ Order Date: ~~06-12-17~~

COMPETITIVE RESPONSE RIDER (Continued)

Section No. 5

~~6th~~^{7th} Revised Sheet No. 123

TERMS AND CONDITIONS OF SERVICE

3. Customer must execute an Electric Service Agreement with Company, or amend its existing Electric (Continued)
 - b. The term of service under this Rider, which must be no less than one year and no longer than seven years for existing customers and ten years for new customers, beginning on the date the customer begins taking service under this ~~R~~Rider,
 - c. The size of the load served under this Rider,
 - d. Verification that customer has been fully informed of the availability of energy audits. If no energy audit is performed for customer, an explanation of why an energy audit was not necessary will be included.
 - e. Establishing the effective date of the rate, which must be at least 60 days after the date upon which the Company files its petition for Commission approval of the Electric Service Agreement,
 - f. If the Customer requests that the rate be implemented on an interim rate basis, a statement that the rate will be treated as an interim rate as of the effective date and until Commission approval, modification or disapproval is received. If a modified rate is approved and accepted by the customer and Company, or if the rate is disapproved, the Company will recover the difference between the interim rate and the approved rate (modified or base) from the customer, and
 - g. Requirements for a bond or other security acceptable to the Company to provide full recovery of any portion of any interim rate discount disallowed by the Commission.
4. For existing customers receiving a discount, the Company, within a general rate case, is allowed to seek recovery of the difference between the applicable commercial and industrial tariff and this Rider times the usage level during the test year period.
5. A rate under this Rider shall meet the conditions of Minnesota Statutes, Section 216B.03, Reasonable Rate, for other customers in this same customer class.
6. Unless the Commission determines that it would be in the public interest, a rate under this Rider shall not compete with district heating or cooling provided by a district heating utility defined by Minnesota Statutes, Section 216B.166, Subdivision 2, Paragraph (c).
7. A rate offered under this Rider may not be offered to a customer in which the Company has a financial interest greater than 50%.

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(Continued on Sheet No. 5-124)

Date Filed:	11-02-15 ¹⁰⁻¹⁰⁻¹⁹	By: Christopher B. Clark	Effective Date:	10-01-17
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Docket No.	E002/ GR-15-826M-19-		Order Date:	06-12-17

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MINNESOTA ELECTRIC RATE BOOK – MPUC NO. 2

COMPETITIVE RESPONSE RIDER

Section No. 5
6th Revised Sheet No. 122

AVAILABILITY

Available at Company's discretion to demand-metered commercial and industrial customers that are subject to effective competition.

Effective competition exists if a customer is located in Company's service territory and has the ability to obtain its energy requirements from an energy supplier not rate regulated by the Minnesota Public Utilities Commission ("Alternate Supplier") for:

1. Existing customers with a minimum load of 2 MW that are located in Company's service territory and subject to effective competition by having the ability to obtain its energy requirements from an Alternate Supplier, or
2. New customers with a minimum initial load of 10 MW with the ability to increase total load to 75 MW within five years that are subject to effective competition by having the ability to locate a new facility outside Company's service territory with energy requirements provided by an Alternate Supplier.

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RATE

Standard service rates and provisions, including controllable service provisions, apply except the level of the demand charges, energy charges, or both may be reduced for each customer as described below.

TERMS AND CONDITIONS OF SERVICE

1. Customer must provide Company with information that documents that service to the customer is subject to effective competition. The Company will treat information provided by the customer to the Company concerning load levels and effective competition that meets the definition of trade secret information under the Minnesota Government Data Practices Act ("Act") as trade secret information and, if provided to the Commission or other state agency, will request that the Commission or any other state agency treat the information as trade secret under the Act.
2. Minimum load served under this Rider is 2 MW for existing customers and 10 MW for new customers. Any rate offered under this Rider shall not be available for any month in which the load served under this Rider falls below the required minimum load level.
3. Customer must execute an Electric Service Agreement with Company, or amend its existing Electric Service Agreement with the Company, to include:
 - a. The rate under this Rider, which:
 - i) must recover at least the incremental cost of providing service, including the cost of incremental capacity that is to be added while the rate is in effect and any applicable on peak or off peak differential;
 - ii) must not exceed the difference between the standard tariff and the cost to the customer of the lowest cost competitive energy supply; and
 - iii) includes an annual minimum charge to fully recover distribution costs.

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(Continued on Sheet No. 5-123)

Date Filed: 01-10-19

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-19-

Order Date:

TERMS AND CONDITIONS OF SERVICE

3. Customer must execute an Electric Service Agreement with Company, or amend its existing Electric (Continued)
 - b. The term of service under this Rider, which must be no less than one year and no longer than seven years for existing customers and ten years for new customers, beginning on the date the customer begins taking service under this Rider,
 - c. The size of the load served under this Rider,
 - d. Verification that customer has been fully informed of the availability of energy audits. If no energy audit is performed for customer, an explanation of why an energy audit was not necessary will be included.
 - e. Establishing the effective date of the rate, which must be at least 60 days after the date upon which the Company files its petition for Commission approval of the Electric Service Agreement,
 - f. If the Customer requests that the rate be implemented on an interim rate basis, a statement that the rate will be treated as an interim rate as of the effective date and until Commission approval, modification or disapproval is received. If a modified rate is approved and accepted by the customer and Company, or if the rate is disapproved, the Company will recover the difference between the interim rate and the approved rate (modified or base) from the customer, and
 - g. Requirements for a bond or other security acceptable to the Company to provide full recovery of any portion of any interim rate discount disallowed by the Commission.
4. For existing customers receiving a discount, the Company, within a general rate case, is allowed to seek recovery of the difference between the applicable commercial and industrial tariff and this Rider times the usage level during the test year period.
5. A rate under this Rider shall meet the conditions of Minnesota Statutes, Section 216B.03, Reasonable Rate, for other customers in this same customer class.
6. Unless the Commission determines that it would be in the public interest, a rate under this Rider shall not compete with district heating or cooling provided by a district heating utility defined by Minnesota Statutes, Section 216B.166, Subdivision 2, Paragraph (c).
7. A rate offered under this Rider may not be offered to a customer in which the Company has a financial interest greater than 50%.

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(Continued on Sheet No. 5-124)

Date Filed: 01-10-19

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-19-

Order Date:



Google LLC
1600 Amphitheatre Parkway
Mountain View, CA 94043

650 253-0000 main
Google.com

January 9, 2019

VIA EMAIL AND U.S. MAIL

Mr. Aakash Chandrana
Regional Vice President - North
Northern States Power Company, doing business as Xcel Energy
401 Nicollet Mall – 7th Floor
Minneapolis, Minnesota 55401

RE: IN THE MATTER OF THE PETITION OF NORTHERN STATES POWER
COMPANY FOR APPROVAL OF CONTRACTS FOR PROVISION OF ELECTRIC
SERVICE TO GOOGLE'S MINNESOTA DATA CENTER PROJECT

DOCKET NO. E0002/M-19-____

Dear Mr. Chandarana:

Google LLC (Google), on behalf of its affiliate Honeycrisp LLC, is pleased to submit this letter in support of Northern States Power Company's (Xcel Energy) petition to the Minnesota Public Utilities Commission (Commission) for approval of certain contracts between these two companies for electric service to Google's proposed data center in Becker, Minnesota.

Google's proposed data center presents an exciting potential opportunity for new economic development on property adjacent to Xcel Energy's Sherco coal plant. Importantly, we are pleased that the data center will help ease the impact of the upcoming retirement of Sherco Units 1 and 2 by introducing a new technology-based industry to this region. Such a data center would also take advantage of the large skilled labor pool in the area. We hope this potential project can provide economic development opportunities for the area as well. If the project moves forward, the project would generate at least \$600 million in initial capital investment. In addition, it is our understanding that the Minnesota Department of Employment and Economic Development (DEED) found that the initial construction of our Becker data center would create nearly 2,000 jobs in Sherburne County. Finally, once in operation, the



Mr. Aakash Chandarana
January 9, 2019
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data center would provide full-time job opportunities for a minimum of 50 persons in the technology sector.

If constructed, the Becker data center will be Google's first data center in Minnesota. One of the primary considerations in Google's site selection is its ability to negotiate a suitable rate for electric service for the data center, as electric energy costs represent one of the largest operating costs of an operational data center. As part of its ongoing due diligence, Google continually examines electric service rates offered to commercial and industrial customers throughout the country, including any negotiated or special economic development rates, and rates and tariffs that specifically apply to proposed data centers now being offered by many utilities.

[NON-PUBLIC HIGHLY CONFIDENTIAL/SENSITIVE TRADE SECRET INFORMATION BEGINS]

NON-PUBLIC HIGHLY CONFIDENTIAL/SENSITIVE TRADE SECRET INFORMATION ENDS].

Google proposes to invest at the site and create new economic opportunities for Becker, Sherburne County, and indeed, as the DEED study shows, the entire state. We very much appreciate the Commission's review and analysis of the electric service agreements that support this proposal.

Google is providing this letter to Xcel Energy to demonstrate the effective competition faced by Google necessary to qualify for the Competitive Response Rider rates available under Xcel Energy's tariff, as we understand that regulatory requirement. As such, this information is intended to be trade secret information as provided under applicable law. Further, Google submits that the information marked as Non-Public Highly Sensitive/Confidential Trade Secret Information in this letter is sufficiently sensitive so as to be not be made available to parties other than government entities, consistent with Commission practice. Google respectfully requests that should Xcel Energy file this letter with the Minnesota Public Utilities Commission – or in any other



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Mr. Aakash Chandarana
January 9, 2019
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public forum – that it does so consistent with Google’s markings herein and its intent to keep the information from being made available to the public generally.

GOOGLE LLC

DocuSigned by:
BY: Neha Palmer
2550FE588BF1470...

NAME: NEHA PALMER

TITLE: AUTHORIZED SIGNATORY



EXECUTION VERSION

Interconnection Agreement for Retail Electric Service at Transmission Voltage

Between

Northern States Power Company, a Minnesota corporation,

and

Honeycrisp Power LLC

Dated as of December 21, 2018



EXECUTION VERSION

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EXECUTION VERSION

This **INTERCONNECTION AGREEMENT FOR RETAIL ELECTRIC SERVICE AT TRANSMISSION VOLTAGE** (this "Interconnection Agreement") is dated as of this 21st day of December, 2018, between Honeycrisp Power LLC, a Delaware limited liability company ("Customer"), and Northern States Power Company, a Minnesota corporation ("Company"). For purposes of this Interconnection Agreement, "Party" will mean Customer or Company, and "Parties" will mean Customer and Company.

RECITALS

WHEREAS, Company is, *inter alia*, a public utility under Minnesota law engaged in the business of generating, transmitting, distributing, and selling electric power and energy and related services in the State of Minnesota; and

WHEREAS, Customer proposes to own and operate a data center located at Becker, Minnesota (the "Data Center"); and

WHEREAS, Customer and Company are parties to that certain Retail Electric Service Agreement ("ESA") dated as of December 21, 2018, by which Company will provide Customer retail electric service to the Data Center; and

WHEREAS, pursuant to the ESA, Customer will take retail electric service from Company at transmission voltage (approximately 115 kilovolts ("kV")) consistent with the ESA, the Tariff (as hereinafter defined), and the Ancillary Agreements (as hereinafter defined); and

WHEREAS, the anticipated retail electric service at transmission voltage from Company to Customer requires that Customer and Company design, engineer, procure, permit, construct, own, operate, and maintain facilities to allow Customer to interconnect to the Company System (as hereinafter defined); and

WHEREAS, Customer and Company intend that Company need not commence to develop, permit, or construct any of the Company Facilities (as hereinafter defined) until such time as Company receives a Notice to Construct (as hereinafter defined) from Customer; and

WHEREAS, Customer's Notice to Construct will identify which of the Company Facilities that Customer is requesting be constructed, and the requested in-service date of the Company Facilities identified; and

WHEREAS, following the issuance of a Notice to Construct, Customer intends that the Data Center will have initial peak annual load of at least [REDACTED] megawatts ("MW") and load factor of approximately [REDACTED] percent [REDACTED]; and

WHEREAS, Customer requires the option to expand the Data Center in certain increments of load up to a maximum of [REDACTED] MW of load; and

WHEREAS, the Parties desire to execute this Interconnection Agreement to provide the terms and conditions for the interconnection of the Customer Facilities (as hereinafter defined) with the Company System and to define the continuing rights, responsibilities, and obligations of the



Parties with respect to the use of certain of their own and the other Party's property, assets, and facilities; and

WHEREAS, the Parties desire to avail themselves of mutual benefits of coordinating the development and operations of their respective systems with respect to the Customer Facilities and the Company Facilities.

NOW THEREFORE, the Parties agree as follows:

Article I. DEFINITIONS

Section 1.01 Rules of Construction.

Capitalized terms used in this Interconnection Agreement will have the meanings set forth in this Article I, whether in the singular or the plural or in the present or past tense. Other terms used in this Interconnection Agreement but not so defined will have meanings as commonly used in the English language and, where applicable, in Good Utility Practice. Words not otherwise defined herein that have well known and generally accepted technical or trade meanings are used herein in accordance with such recognized meanings.

Section 1.02 Good Faith and Fair Dealing.

The Parties will act reasonably and in accordance with the principles of good faith and fair dealing in the performance of this Interconnection Agreement. Unless expressly provided otherwise in this Interconnection Agreement, (a) where the consent, approval, or similar action is required by a Party, such consent or approval will not be unreasonably withheld, conditioned, or delayed; and (b) wherever a Party has the right to determine, require, specify, or take similar action with respect to a matter, such determination, requirement, specification, or similar action will be reasonable.

Section 1.03 General Provisions.

- (a) In the event Customer enters into any agreements with Company or an Affiliate of Company in addition to this Interconnection Agreement, the Parties acknowledge and agree that such agreements will be deemed to be separate and free-standing contracts that do not alter the terms of this Interconnection Agreement except to the extent specified therein, nor will the terms of this Interconnection Agreement be deemed to alter the terms of any other contract between Company or Affiliate of Company and Customer, including, without limitation the ESA. Notwithstanding the foregoing, this Interconnection Agreement is intended to be read in concert with the ESA and to the extent there are any conflicts between this Interconnection Agreement and the ESA, the ESA will control.
- (b) This Interconnection Agreement will not be construed to create any rights between Customer and Company for any purpose other than interconnection of the facilities described herein. Specifically, this Interconnection Agreement does



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not provide Customer with electric service, FERC jurisdictional interconnection service, or any other rights or service except as expressly identified herein.

- (c) This Interconnection Agreement will apply to interconnections of load located on Customer's side of the Point(s) of Interconnection to the Company System. This Interconnection Agreement will not apply to interconnections that support the transmission of electricity across the Company System.
- (d) Except to the extent precluded by an Emergency, Force Majeure, Forced Outage, or compliance with Applicable Law (including for the avoidance of doubt those necessary to comply with Reliability Standards), Company will reasonably consult with Customer, and as appropriate negotiate an amendment to this Interconnection Agreement, whenever (i) Company requires Customer to add, modify, or improve its facilities that are the subject of this Interconnection Agreement; or (ii) Company requires Customer to change its operating standards or practices, or operation of facilities that are the subject of this Interconnection Agreement. The requirements set forth in clauses (i) and (ii) in the preceding sentence will be applied on a comparable, just and reasonable, and non-discriminatory basis in accordance with Good Utility Practice, as applicable.
- (e) This Interconnection Agreement provides no rights to Customer with respect to any back-up generation located at the premises used to support the Data Center. Under no circumstance whatsoever, including without limitation during an Emergency (except as may be necessary to prevent damage to the Company Facilities and the Company System), will Customer's back-up generation at the Data Center be allowed to feed any energy over the Point(s) of Interconnection onto the Company System. Notwithstanding the foregoing, Customer may operate its back-up generation in parallel with the Company System for no longer than [REDACTED] minutes; provided, however, that Customer complies with Company's Interconnection Guidelines for Transmission Interconnected Producer Owned Generation Greater than 20 MW and Interconnection Guidelines for Transmission Interconnected Producer Owned Generation Less than 20 MW, as may be amended from time to time, as applicable.

Section 1.04 Definitions.

"Affiliate" means with respect to a corporation, partnership, or other entity, each such other corporation, partnership, or other entity that directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such corporation, partnership, or other entity.

"Ancillary Agreements" means the ESA and CRRA.

"Applicable Law" means all duly promulgated applicable federal, state, and local laws, statutes, treaties, codes, ordinances, regulations, rules, certificates, decrees, judgments, directives, or judicial or administrative orders, permits, and other duly authorized actions of any Governmental Authority having jurisdiction over a Party or the Parties, as applicable, their respective facilities and/or the respective services they provide.



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“Balancing Area” means an electric power system or combination of electric power systems bounded by interconnection metering and telemetering to which a common generation control scheme is applied in order to: (a) match the power output of generation resources within the electric power system(s) and energy delivered from or to entities outside the electric power system(s), with the load within the electric power system(s); (b) maintain scheduled interchange with other Balancing Areas, within the limits of Good Utility Practice; and (c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of the NERC and the MRO.

“Balancing Area Operator” means the entity with responsibility for operating and controlling generation and loads affecting the Company System. The Balancing Area Operator for the Company System is the MISO, or its successor.

“Business Day” means any Day that is not a Saturday, a Sunday, or a federal holiday.

“Commercial Operation” means Customer has demonstrated that the Data Center is physically capable of receiving retail electric service consistent with Good Utility Practice.

“Commercial Operation Date” means the date on which the Data Center reaches Commercial Operation.

“Commercially Reasonable” or “Commercially Reasonable Efforts” means, with respect to any action to be taken or attempted by a Party under this Interconnection Agreement, the level of effort in light of the facts known to such Party at the time a decision is made that: (a) can reasonably be expected to accomplish the desired action at a reasonable cost; (b) is consistent with Good Utility Practices; and (c) takes into consideration the amount of advance notice required to take such action, the duration and type of action, and the competitive environment in which such action occurs.

“Company” has the meaning set forth in the introductory paragraph of this Interconnection Agreement.

“Company Facilities” means the transmission voltage equipment, apparatus, and devices owned by Company for purposes of providing retail electric service at transmission voltage and for interconnection to the Customer Facilities, including but not limited to switching stations, circuits, circuit breakers, bus work, land easements, relays, communications circuits, and associated equipment and any replacement or additional equipment that Customer may install due to equipment failure or to meet changed industry standards and all related instrument transformers, substation, and physical structures, all transmission facilities required to access the Point(s) of Interconnection, and Company’s metering, relays, electric energy collection network, and generation control equipment. The Company Facilities are identified and described in Appendix A and its sub-appendices.

“Company System” means: (1) Company’s transmission system, as subject to the jurisdiction of FERC; (2) Company’s distribution system, as subject to the jurisdiction of



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the MPUC; and (3) all facilities owned by Company in the vicinity of the Sherco Generating Station, including without limitation the Sherco Generating Station. For the avoidance of doubt, the Company System will include the Company Facilities.

"Confidential Information" has the meaning set forth in Section 17.02.

"CRRA" means that certain Competitive Response Rider Agreement entered into by the Parties on a date even to the effective date of the ESA.

"Customer" has the meaning set forth in the introductory paragraph of this Interconnection Agreement.

"Customer Facilities" means the equipment, apparatus, and devices owned by Customer for purposes of interconnecting to the Company Facilities, including but not limited to substation, circuits, circuit breakers, bus work, land easements, relays, communications circuits, and associated equipment and any replacement or additional equipment that Customer may install due to equipment failure or to meet changed industry standards and all related instrument transformers, substation and physical structures, all transmission facilities required to access the Point(s) of Interconnection, and Customer's metering, relays, electric energy collection network, and generation control equipment. The Customer Facilities are identified and described in Appendix B.

"Data Center" has the meaning set forth in the recitals.

"Day" means a calendar day.

"Early Termination Fee" means the Net Book Value of the cost of the Company Facilities as of the date this Interconnection Agreement is terminated.

"Effective Date" has the meaning set forth in Section 3.01.

"Electric Service Agreement" or "ESA" means that certain Retail Electric Service Agreement dated as of a date even herewith by and between the Parties for the provision of retail electric service by Company to Customer for the Data Center.

"Emergency" means a condition or situation that in the reasonable good faith determination of the affected Party based on Good Utility Practice contributes to an existing or imminent physical threat of danger to life or a significant threat to health, property, or the environment.

"FERC" means the Federal Energy Regulatory Commission, or any successor entity.

"Force Majeure" means any act of God, labor disturbance, act of the public enemy, war, insurrection, riot, fire, storm or flood, explosion, breakage or accident to machinery or equipment, order, regulation, or restriction imposed by governmental military or lawfully established civilian authorities, or any other cause beyond a Party's control. Force Majeure also includes the failure of one or both Parties, despite Commercially Reasonable Efforts in accordance with Good Utility Practice, to obtain the Regulatory



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Approvals and Permits for the Company Facilities and/or the Customer Facilities, as applicable. A Force Majeure event does not include an act of negligence or intentional wrongdoing by a Party, but may include such an act of a third person if such act causes or results in a circumstance that otherwise qualifies. Neither Company nor Customer will be considered in default as to any obligation under this Interconnection Agreement if prevented from fulfilling the obligation due to an event of Force Majeure. However, a Party whose performance under this Interconnection Agreement is hindered by an event of Force Majeure will make all Commercially Reasonable Efforts to perform its obligations under this Interconnection Agreement.

“Forced Outage” means: (a) in the case of Customer, taking Customer’s system, in whole or in part, out of service by reason of an Emergency or Network Security condition, unanticipated failure, or other cause beyond the reasonable control of Customer, when such removal from service was not scheduled in accordance with Section 5.02; and (b) in the case of Company, taking the Company System, in whole or in part, out of service by reason of an Emergency or Network Security condition, unanticipated failure, or other cause beyond the reasonable control of Company, when such removal from service was not scheduled in accordance with Section 5.02.

“Good Utility Practice” means any of the practices, methods, standards, and acts engaged in or approved by a significant portion of the applicable segment of the electric utility industry during the relevant time period, or any of the practices, methods, standards, and acts which, in the exercise of Commercially Reasonable judgment, in light of the facts known (or reasonably should have been known) at the time the decision was made, would have been expected to accomplish the desired result at a reasonable cost consistent with Applicable Law, Permits, codes, standards, equipment manufacturer’s recommendations, good business practices, reliability, safety, environmental protection, economy, and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather to those practices, methods, standards, and acts generally acceptable or approved in the region, including those practices required by Federal Power Act Section 215(a)(4).

“Governmental Authority” means any federal, state, local, or other governmental regulatory or administrative agency, court, commission, department, board, or other governmental subdivision, legislature, rulemaking board, tribunal, or other Governmental Authority having jurisdiction over the Parties, their respective facilities, or the respective services that they provide, and exercising or entitled to exercise any administrative, executive, police, or taxing authority or power; provided, however, that such term does not include Customer, Company, or any Affiliate thereof.

“Guarantor” means (a) where an Affiliate of Customer is providing a guaranty under this Interconnection Agreement, meets each of the following requirements: (i) organized under the Applicable Laws of the United States of America or any State thereof; (ii) capital and surplus of at least [REDACTED] and (iii) a credit rating from one (1) of the following three (3) rating agencies: of at least [REDACTED] by S&P, [REDACTED] by Moody’s, or [REDACTED] by Fitch; and (b) where a third party is providing a guaranty under this Interconnection Agreement, meets each of the following requirements:



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(i) organized under the Applicable Laws of the United States of America or any State thereof; (ii) capital and surplus of [REDACTED] and (iii) a credit rating from [REDACTED] of the following three (3) rating agencies: of at least [REDACTED] by S&P [REDACTED] by Moody's, or [REDACTED] by Fitch.

"Indemnified Party" has the meaning set forth in Section 13.02.

"Indemnifying Party" has the meaning set forth in Section 13.02.

"Initial Period" has the meaning set forth in Section 3.01.

"Interconnection Guidelines" means *Xcel Energy's Interconnection Guidelines For Transmission Interconnected Customer Loads*, as they may be revised from time to time by Company and posted on Company's website (www.xcelenergy.com), the provisions of which will apply to the Parties as set forth in this Interconnection Agreement.

"Interconnection Service" means the service Company will provide to Customer to interconnect the Customer Facilities to the Company Facilities (such facilities being described more fully in Appendix A and its sub-appendices and Appendix B) for the provision of retail electric service at transmission voltage, and the ongoing operations and maintenance of such facilities.

"kV" has the meaning set forth in the recitals.

"LBA" means the entity with responsibility for operating and controlling local generation and loads affecting the Company System, subject to the authority of the Balancing Area Operator.

"Metering Device(s)" means all meters, current and potential transformers, and data processing equipment used to measure, record, or transmit data relating to the electric power and energy output from, or input to, Customer, as identified in Appendix A and its sub-appendices. The Metering Point will be separately identified from the Point(s) of Interconnection.

"MISO" means the Midwest Independent System Operator, Inc., a non-profit, nonstock, Delaware corporation, or any successor entity.

"MPUC" means the Minnesota Public Utilities Commission, the regulatory agency having jurisdiction over the retail electric and gas service of Company in the State of Minnesota (including, without limitation, the retail electric service covered by this Interconnection Agreement; electric transmission infrastructure over 100 kV and 1500 feet in length; and natural gas infrastructure), or any successor entity.

"MRO" means the Midwest Reliability Organization, Inc., a NERC regional electric reliability council, or any successor entity.

"MW" has the meaning set forth in the recitals.



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"NERC" means the North American Electric Reliability Corporation, or any successor entity.

"Net Book Value" means Company's original cost of the Company's Facilities, depreciated, as reflected on Company's books and records as of a date certain.

"Network Security" means the ability of the Company System to withstand sudden disturbances such as unforeseen conditions, electric short circuits, or unanticipated loss of system elements.

"Notice To Construct" means the notice(s) by Customer to Company as contemplated by Section 4.02.

"Other Party Group" has the meaning set forth in Section 12.01(e).

"Permit(s)" means all applicable construction, land use, air quality, emissions control, environmental, protected species, routing, zoning, and other permits, licenses, and approvals from any Governmental Authority, including without limitation the MPUC, the City of Becker, Minnesota, and the County of Sherburne, Minnesota, for the routing, design, construction, ownership, operation, and maintenance of the Company Facilities or the Customer Facilities, as applicable.

"Planned Outage" means action: (a) by Customer to take its equipment, facilities, or systems out of service, partially or completely, to perform work on specific components that is scheduled in advance and has a predetermined start date and duration pursuant to the procedures set forth in Section 5.02; or (b) by Company to take its equipment, facilities, and systems out of service, partially or completely, to perform work on specific components that is scheduled in advance and has a predetermined start date and duration pursuant to the procedures set forth in Section 5.02.

"Point(s) of Interconnection" means the physical point or points at which the Customer Facilities interconnect with the Company Facilities, as depicted in Appendix A and its sub-appendices.

"Regulatory Approvals" will have the meaning set forth in Section 9.02.

"Regulatory Approval Date" means the date on which a final non-appealable order is issued by the MPUC providing the Regulatory Approvals.

"Reliability Standards" means mandatory reliability standards adopted by NERC or MRO and approved by FERC, as amended from time to time, applicable to the facilities owned, and/or operated by Customer and Company, respectively.

"System Protection Facilities" means the equipment required to protect: (a) the Company System, the systems of others directly or indirectly interconnected with the Company System, and Company's customers from faults occurring on Customer's side of the Point(s) of Interconnection; and (b) Customer from faults occurring on the



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Company System or on the systems of others to which the Company System is directly or indirectly interconnected.

"Tariff" means Company's Minnesota Electric Rate Book, on file with the MPUC, and as amended from time to time.

"Voltage Transformer" or "VT" means a transformer intended for metering, protective, or control purposes and designed to have its primary winding connected either between the primary conductors to be measured or between a conductor and ground. A voltage transformer normally reduces voltage magnitudes to levels which can be handled by control, protection, and metering equipment. The historic term for a VT is potential transformer.

Article II. SCOPE

Section 2.01 Scope of Interconnection.

- (a) General. Company will provide Interconnection Service to Customer at the Point(s) of Interconnection as provided herein. This Interconnection Agreement sets forth the terms and conditions of the interconnection of the Data Center to the Company System for the provision of retail electric service at transmission voltage by Company to Customer for varying amounts of Data Center load and the rights and duties of the Parties.
- (b) Other Arrangements. The establishment of an interconnection under this Interconnection Agreement does not in itself entitle Customer to obtain any services from Company that may be subject to the jurisdiction of FERC or the MPUC; Customer must arrange for any such services in accordance with the applicable tariff or service requirements.

Section 2.02 Facilities Providing Service.

The scope of Interconnection Service for retail electric service at transmission voltage provided hereunder is based on Company's description of the Company Facilities, and Customer's description of the Customer Facilities, as set forth in Appendix A and its sub-appendices and Appendix B, respectively.

Article III. TERMS AND TERMINATION

Section 3.01 Term.

This Interconnection Agreement will become effective on the first (1st) Day of the first month after being executed by the Parties, unless otherwise ordered by the MPUC pursuant to Section 9.02 (the "Effective Date"). Unless terminated earlier in accordance with Section 3.02, the Interconnection Service provided under this Interconnection Agreement will remain in effect for an initial period of ten (10) years from the Commercial Operation Date ("Initial Period"). Upon expiration of the Initial Period, this Interconnection Agreement will automatically renew for additional twelve (12) month



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periods thereafter until such time as Customer may terminate this Interconnection Agreement in accordance with Section 3.02. Customer will provide not less than twelve (12) months prior notice before terminating this Interconnection Agreement.

Section 3.02 Early Termination.

This Interconnection Agreement may be terminated early in the following circumstances: (a) by mutual agreement among the Parties; (b) by either Party in the event of any material breach of this Interconnection Agreement by the other Party; or (c) at the election of Customer at any time (provided Customer is not in default as contemplated in Section 14.01). In the event of termination by Customer under Section 3.02(c) of this Interconnection Agreement, Customer shall pay to Company an amount equal to the Early Termination Fee as of the date of termination of this Interconnection Agreement.

The Parties will use Commercially Reasonable Efforts to mitigate the costs, damages, and charges arising out of an early termination under this Section 3.02. In the event of a dispute regarding the early termination or the Early Termination Fee, either Party may request dispute resolution pursuant to the procedures in Article XV.

Section 3.03 Survival.

The provisions of this Interconnection Agreement necessary to give full effect to its terms will continue in effect after the termination or expiration of this Interconnection Agreement. Such provisions include, but are not necessarily limited to: Section 3.02 (Early Termination), Section 5.01 (Disconnection), Section 13.01 (Waiver of Consequential Damages), Section 13.02 (Indemnity), Article 14 (Default and Termination), and Article 15 (Dispute Resolution). In addition, the obligation to pay any money due and owing to either Party pursuant to this Interconnection Agreement will survive termination or expiration of this Interconnection Agreement.

Article IV. OWNERSHIP, CONSTRUCTION, OPERATION, AND MAINTENANCE

Section 4.01 New Facilities.

To enable Customer to carry out the initial construction and potential expansion of the Data Center, the Parties have identified certain equipment that is necessary to design, engineer, procure, permit, construct, own, operate, and maintain in order to ensure that Company can deliver and Customer can accept retail electric service at transmission voltage for the Data Center, consistent with the requirements of the ESA. Appendix A and its sub-appendices identify the Company Facilities, and Appendix B identifies the Customer Facilities. The Company Facilities and the Customer Facilities will be constructed, operated, and maintained consistent with the terms of this Interconnection Agreement for transmission voltage retail electric service.

Section 4.02 Notice to Construct.

- (a) Company's obligations for the construction of the Company Facilities as provided for in this Interconnection Agreement are expressly conditioned on Company



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receiving Customer's "Notice to Construct." Company need not undertake any action (although it may do so) in furtherance of the development or permitting of the Company Facilities identified in Appendix A or its sub-appendices until such time as Company receives a Notice to Construct from Customer identifying the specific Company Facilities to be constructed. A form of Customer's Notice to Construct is provided in Appendix C.

- (b) In Customer's initial Notice to Construct, Customer may request Company to construct the Company Facilities identified in Appendix A-1 not sooner than [REDACTED] prior to the requested in-service date for the Company Facilities identified in Appendix A-1. Thereafter, and not sooner than twenty-four (24) months prior to the requested in-service date, Customer may identify one (1) or more of the remaining Company Facilities listed in Appendices A-2 through A-5. Customer may continue issuing Notices to Construct until all five (5) options in Appendices A-1 through A-5 have been identified or until the termination of this Interconnection Agreement.
- (c) For the Company Facilities identified in Appendix A-1, Customer's requested in-service date will not be sooner than [REDACTED] after Company's receipt of Notice to Construct. For the Company Facilities identified in Appendices A-2 through A-5, Customer's requested in-service date will not be sooner than twenty-four (24) months after Company's receipt of Notice to Construct. Upon receipt of a Notice to Construct, Company will design, engineer, procure, permit, construct, and/or relocate (as applicable) the Company Facilities identified in such Notice to Construct, and will make Commercially Reasonable Efforts to meet the requested in-service date. Notwithstanding the foregoing, if Company determines that it is unable to meet the requested in-service date for any reason, Company will notify Customer and describe the reasons for any delay as well as potential mitigations.
- (d) In the event that Company does not receive Customer's first Notice to Construct by the [REDACTED] anniversary of the Regulatory Approval Date, Company may terminate this Interconnection Agreement, without prior MPUC approval, upon thirty (30) Days' notice to Customer. Upon termination by Company under this Section 4.02(d), neither Party will have any further obligation or liability under this Interconnection Agreement.

Section 4.03 Company Facilities.

- (a) Company will design, engineer, procure, permit, construct, own, operate, and maintain in accordance with Applicable Law, Good Utility Practice, and the Interconnection Guidelines, the Company Facilities shown in Appendix A and its sub-appendices, and will operate such facilities in a manner that protects Customer's electric system, including the Customer Facilities, from transients, faults, and other operating contingencies.
- (b) Notwithstanding the provisions of Section 5.1(B), Section 5.2, and Section 5.3 of the Tariff, and subject to the provisions of any applicable Ancillary Agreement,



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Company will construct the Company Facilities at Company's cost and expense; provided, however, that the MPUC has approved Company's ability to recover the fully loaded costs of the Company Facilities in Company's Minnesota electric rate base.

Section 4.04 Customer Facilities and System Protection Facilities.

Upon issuance of its first Notice to Construct, Customer will, at Customer's sole expense, design, engineer, procure, permit, construct, own, operate, and maintain the Customer Facilities as described in Appendix B, in accordance with Applicable Law and Good Utility Practice, and will operate the Customer Facilities in a manner that protects the Company System, including the Company Facilities, from transients, faults, and other operating contingencies occurring at the Customer Facilities or caused by Customer. Design and construction of the Customer Facilities will occur as provided for in Appendix B.

Design and specification of System Protection Facilities, including protective relaying, alarming, fault recording, control, dVAR controller, metering, and related systems for substations, high voltage switch gear, and transformers will be subject to the Company's review and approval, which approval will not be unreasonably withheld or delayed. All System Protection Facilities must be in compliance with Applicable Law, Good Utility Practice, and the requirements set forth in this Interconnection Agreement.

To the extent Customer is required to install, operate, and maintain facilities and equipment required for Company to comply with applicable frequency-based, voltage-based, and manual load shedding obligations established by Reliability Standards or the Balancing Area Operator, Company will provide Customer with sufficient advanced written notice and in a manner consistent with Good Utility Practice.

Section 4.05 Modifications to Facilities.

- (a) Either Party may undertake modifications to its respective the Company Facilities or the Customer Facilities identified in Appendix A and its sub-appendices, and in Appendix B, respectively and as applicable, which such modifications will be designed, constructed, and operated in accordance with Applicable Law, Good Utility Practice, and this Interconnection Agreement; provided, however, if: (1) Customer proposes (A) to make any change or modification to the configuration or operation of the Customer Facilities that may affect the Company System, including the Company Facilities, (B) to add a new Point(s) of Interconnection, or (C) to eliminate a Point(s) of Interconnection (except when this Interconnection Agreement is terminated); or (2) Company proposes to make any change or modification to the configuration or operation of the Company Facilities that may affect the Customer Facilities, then (x) the Party proposing the change will provide sufficient notice and information regarding such modification so that the other Party may evaluate the potential impact of such modification prior to the commencement of any work, and (y) the Parties will negotiate in good faith an amendment to this Interconnection Agreement as may be necessary to



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address the proposed change. In furtherance and not in limitation of the foregoing, Company will adhere to the NERC standard known as TPL-004.

- (1) Information provided under this Section 4.05(a) regarding such modification may be designated by a Party to be Confidential Information hereunder, including, but not limited to, information concerning the timing of such modification and how such modifications are expected to affect the other Party's system. Unless a shorter period of time is appropriate for a Party to respond to an Emergency, or comply with Reliability Standards or Applicable Law, the Party desiring to perform such work will provide the relevant drawings, plans, and specifications to the other Party at least ninety (90) Days in advance of the commencement of the work or such shorter period upon which the Parties may agree, which agreement will not unreasonably be withheld, conditioned, or delayed.
 - (2) In the event the Parties are unable to agree to such modification of the Company Facilities or the Customer Facilities pursuant to this Section 4.05(a), the Parties will consider such failure to agree a dispute under this Interconnection Agreement and will resolve such dispute pursuant to Article XV.
 - (3) Where it is necessary to add or modify one (1) or more Point(s) of Interconnection, the Parties will work together in good faith with respect to the location, cost, and timing of such Point(s) of Interconnection, consistent with Good Utility Practice.
- (b) Customer will be responsible for the costs of any additions, modifications, or replacements that may be necessary to maintain or upgrade the Customer Facilities consistent with Applicable Law, Good Utility Practice, and the Interconnection Guidelines, as applicable. Customer will own any modifications to the Customer Facilities.

Section 4.06 Reliability Standards.

Customer will be responsible for compliance with all Reliability Standards applicable to Customer's electrical system; and Company will be responsible for compliance with all Reliability Standards applicable to the Company System. Each Party will be responsible for the costs of compliance with such Reliability Standards for their respective facilities and systems, including: (a) costs associated with modifying their respective facilities or systems to comply with changes in such Reliability Standards; and (b) any financial penalties for non-compliance. The Parties agree to share data or documentation as may be required to demonstrate compliance with Reliability Standards where an individual Party has possession of data or documentation necessary for the other Party to demonstrate compliance.



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Section 4.07 Interconnection Guidelines.

The Interconnection Guidelines provide additional and more detailed standards for designing, testing, studying, constructing, operating, maintaining, and interconnecting at the Point(s) of Interconnection. The Interconnection Guidelines include, among other things, power factor requirements and metering requirements. Customer will comply with the Interconnection Guidelines, as appropriate, for: (i) any new Point(s) of Interconnection requested by Customer on or after the Effective Date; and (ii) any existing Point(s) of Interconnection materially modified after the Effective Date.

Section 4.08 Power Factor.

Unless prevented by circumstances beyond Customer's control, including Forced Outages, Customer will have sufficient power factor control equipment (such as capacitors) installed to maintain, at a minimum, a ninety-five percent (95%)-lagging or leading power factor at the Point(s) of Interconnection. Customer will maintain the aforesaid requirement during peak load periods and avoid leading power factor during light load conditions.

In the event Customer does not have sufficient power factor control equipment (such as capacitors) installed to maintain, at a minimum, a ninety-five percent (95%)-lagging or leading power factor at the Point(s) of Interconnection, Customer will, within thirty (30) Days after written notice from Company of such deficiency, correct the deficiency or provide Company with a written commitment to correct the deficiency. In the event Customer makes a written commitment to add power factor control equipment (such as capacitors), Customer will exert Commercially Reasonable Efforts to expeditiously bring such equipment into service.

Section 4.09 Access.

Appropriate representatives of Company will at all reasonable times, including weekends and nights, and with one (1) Business Day prior notice, have access to the Customer Facilities, to take readings and to perform all inspections, maintenance, service, and operational reviews as may be appropriate or necessary to facilitate the performance of this Interconnection Agreement. While on Customer's premises, Company's representatives will announce their presence and observe such safety precautions as may be required and will conduct themselves in a manner that will not interfere with Customer's operations. Company and Customer will provide such access subject to Company's compliance with Customer's reasonable security guidelines, standard site rules and regulations, and any required right of entry agreements. Customer will provide Company with such guidelines, rules, regulations, and agreements promptly when available, and will provide updated versions of such guidelines, rules, regulations, and agreements promptly when available.



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Section 4.10 Right of Installation.

Each Party will make available suitable space for installation by the other Party of necessary equipment, apparatus, and devices required for the performance of this Interconnection Agreement.

Section 4.11 Right of Removal.

Any and all equipment, apparatus, and devices caused to be placed or installed by one Party on, or in, the premises of the other Party will be and remain the property of the Party owning such equipment, apparatus, and devices regardless of the mode or manner of annexation or attachment to the relevant premises. Unless otherwise agreed by the Parties, upon termination or expiration of this Interconnection Agreement, each Party will completely remove all foundations for all of its equipment from the other Party's premises. Notwithstanding the forgoing, in lieu of removal, the Parties reserve the right to sell any and all equipment, apparatus, and devices that are attached to the premises. Once the aforesaid equipment is removed, the Parties will update Appendix A and its sub-appendices, and Appendix B, as appropriate, to reflect the removal.

Section 4.12 Transfer of Control or Sale of Facilities.

In any sale or transfer of control of the Customer Facilities, Customer will: (1) provide sufficient notice to Company; and (2) as a condition of such sale or transfer require the acquiring party or transferee with respect to the transferred facilities either to assume the obligations of Customer with respect to this Interconnection Agreement or to enter into an agreement with Company imposing on the acquiring party or transferee the same obligations applicable to Customer under this Interconnection Agreement. For the avoidance of doubt, "sale or transfer of control of the Customer Facilities" does not include any change of ownership from Customer to its Affiliate that may be incidental to any corporate structural changes of any of Customer's Affiliates; provided, however, that Customer provides reasonably prompt notice of such transfer to Company, and further provided, however, that failure by Customer to provide notice of such transfer will not be deemed a breach or event of default under this Interconnection Agreement.

Article V. OUTAGES AND COORDINATION

Section 5.01 Disconnection.

- (a) Except when there is an Emergency, Forced Outage, Force Majeure, and/or a requirement to comply with Reliability Standards or Applicable Law, the Parties will reasonably consult each other prior to disconnecting the Customer Facilities from the Company Facilities.
- (b) If at any time Company observes any protective equipment that appears to have failed or to have been changed other than pursuant to Section 4.05, Company will have the right, if Company determines that such failure or change may have a material adverse impact on the safety or reliability of the Company System consistent with Good Utility Practice, to temporarily disconnect the Customer



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Facilities from the Company Facilities, provided Company first provides Commercially Reasonable notice to Customer, and only for so long as reasonably consistent with Good Utility Practice. Company may require, at Customer's expense, a new calibration and activation test of Customer's protective equipment after such equipment has been corrected or repaired.

Section 5.02 Outages.

In accordance with Good Utility Practice, each Party may, in close cooperation with the other Party, remove from service its system elements that may affect the other Party's system as necessary to perform maintenance or testing or to replace installed equipment. Absent the existence of an Emergency, the Party scheduling a removal of a system element from service will use good faith efforts to schedule such removal on a date mutually acceptable to both Parties, in accordance with Good Utility Practice.

In the event of a Forced Outage of a system element of Customer's electric system adversely affecting the Company Facilities or the Company System, Customer will use Good Utility Practice to promptly restore that system element to service. In the event of a Forced Outage of a system element of the Company System adversely affecting the Customer Facilities or Customer's electric system, Company will use Good Utility Practice to promptly restore that system element to service.

In the event of a Planned Outage of a system element of Customer's electric system adversely affecting the Company Facilities or the Company System, Customer will act in accordance with Good Utility Practice to promptly restore that system element to service in accordance with its schedule for the work that necessitated the Planned Outage. In the event of a Planned Outage of a system element of Company's electric system adversely affecting Customer's electric system, Company will act in accordance with Good Utility Practice to promptly restore that system element to service in accordance with its schedule for the work that necessitated the Planned Outage. Performance Planned Outages will comply with all applicable Reliability Standards, including, without limitation, NERC TPL and TOP Standards, as applicable.

Section 5.03 Outage Reporting.

The Parties will comply with all current Company reporting requirements, as they may be revised from time to time, and as they apply to Customer or Company. When a Forced Outage occurs that affects the Company Facilities or affects the Company System such that there is an adverse impact to the Point(s) of Interconnection, Company will notify Customer of the existence, nature, and expected duration of the Forced Outage as soon as is reasonably practical and consistent with Good Utility Practice.

Section 5.04 Switching and Tagging Rules.

The Parties will abide by their respective switching and tagging rules for obtaining clearances for work or for switching operations on equipment. Company will notify Customer of Company's switching and tagging rules, and provide periodic updates of



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such rules as they may change from time to time. Customer will establish switching and tagging rules for the Customer Facilities, and will provide such rules to Company.

Section 5.05 Coordination.

In all circumstances:

- (a) Electrical system operation will be coordinated between Customer and Company, including the coordination of equipment outages, voltage levels, real and reactive power flow monitoring, and switching operations, which affect the Balancing Area or LBA, as required by this Interconnection Agreement.
- (b) If either Customer or Company operations are causing a condition on the interconnected electrical network where line loadings, equipment loadings, voltage levels, or reactive flow significantly deviate from normal operating limits or can be expected to exceed emergency limits following a contingency, and reliability of the bulk power supply is threatened, LBA or Company will take immediate steps and make Commercially Reasonable Efforts to relieve, correct, or control the condition. These steps may include: (1) notifying other affected electric utility systems and MISO, as applicable; (2) adjusting generation; (3) changing schedules between Balancing Areas; (4) initiating load relief measures; and (5) taking such other reasonable action as may be required. Electrical equipment is to be operated within its normal rating established by the owning Party except for temporary conditions after a contingency has occurred.
- (c) Each Party will notify the other Party as soon as practicable whenever:
 - (1) Problems with a Point(s) of Interconnection are detected that could result in mis-operation of interconnection protection or other interconnection equipment;
 - (2) The interconnection is opened by protective relay action;
 - (3) Interconnection equipment problems occur and result in an outage to a portion of the Company System;
 - (4) A Party intends to initiate switching to close the interconnection; or
 - (5) A Party intends to initiate switching to open the interconnection.

Section 5.06 Emergency.

- (a) In the event of an Emergency, the Party becoming aware of the Emergency may, in accordance with Good Utility Practice and using its reasonable judgment, take such action as is reasonable and necessary to prevent, avoid, or mitigate injury, danger, and loss.



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- (b) In the event Customer has identified an Emergency involving the Company Facilities, Customer will obtain the consent of Company personnel prior to manually performing any switching operations unless immediate action is essential to protecting the safety of individuals or against extreme damage to property.
- (c) Company may, consistent with Good Utility Practice, take whatever actions or inactions Company deems necessary during an Emergency in order to: (1) preserve public health and safety; (2) preserve the reliability of the Company System, including the Company Facilities; (3) limit or prevent damage; and (4) expedite restoration of service. Company will use Commercially Reasonable Efforts to minimize the effect of such actions or inactions on the Customer Facilities.
- (d) Customer may, consistent with Good Utility Practice, take whatever actions or inactions with regard to the Customer Facilities that Customer deems necessary during an Emergency in order to: (1) preserve public health and safety; (2) preserve the reliability of the Customer Facilities; (3) limit or prevent damage; and (4) expedite restoration of service. Customer will use Commercially Reasonable Efforts to minimize the effect of such actions or inactions on the Company System.
- (e) Company will provide Customer with reasonably prompt oral or electronic notification under the circumstances of an Emergency that may reasonably be expected to affect Customer's operations, to the extent Company is aware of the Emergency. Customer will provide Company with reasonably prompt oral or electronic notification under the circumstances of an Emergency that may reasonably be expected to affect the Company System, to the extent Customer is aware of the Emergency. To the extent the Party becoming aware of an Emergency is aware of the facts of the Emergency, such oral or electronic notification will describe the Emergency, the extent of the damage or deficiency, its anticipated duration, and the corrective action taken and/or to be taken.
- (f) To the extent an Emergency exists on the Company System, and Company, the LBA, or other reliability coordinator determines it is necessary for Company and Customer to shed load, the Parties will shed load in accordance with the applicable Reliability Standards.

Article VI. SAFETY

Section 6.01 Safety Standards.

- (a) The Parties agree that all work performed under this Interconnection Agreement will be performed in accordance with all Applicable Law, standards, practices, and procedures pertaining to the safety of persons or property. To the extent a Party performs work on the other Party's premises, the Party performing work will also abide by the safety, or other access, rules applicable to those premises.



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- (b) Each Party will be solely responsible for the safety and supervision of its own employees, agents, representatives, and contractors.

Article VII. ENVIRONMENTAL CONSIDERATIONS

Section 7.01 Environmental Considerations.

Each Party will remain responsible for compliance with all Applicable Law with respect to the environment and applicable to its own respective property, facilities, and operations. Each Party will promptly notify the other Party upon discovering any release of any hazardous substance by it on the property or facilities of the other Party, or which may migrate to, or adversely affect the property, facilities, or operations of the other Party, and will promptly furnish to the other Party copies of any reports filed with any Governmental Authority addressing such events.

The Party responsible for the release of any hazardous substance on the property or facilities of the other Party, or which may migrate to, or adversely affect the property, facilities, or operations of the other Party will be responsible for the reasonable cost of performing any and all remediation or abatement activity and submitting all reports or filings required by Applicable Law. Advance written notification (except in Emergency situations, in which verbal, followed by written notification, will be provided as soon as practicable) will be provided by any Party performing any remediation or abatement activity on the property or facilities of the other Party, or which may adversely affect the property, facilities, or operations of the other Party. Except in an Emergency, such remediation or abatement activity will be performed only with the consent of the Party owning the affected property or facilities. The Parties agree to coordinate, to the extent necessary, the preparation of site plans, reports, or filings required by Applicable Law.

Article VIII. FORCE MAJEURE

Section 8.01 Effect of Declaring Force Majeure.

Neither Party will be considered to be in default or breach of this Interconnection Agreement or liable for damages or otherwise responsible to the other Party for any delay in or failure to carry out any of its obligations under this Interconnection Agreement if, and only to the extent that, the Party is unable to perform or is prevented from performing by an event of Force Majeure. Notwithstanding the foregoing sentence, neither Party may claim Force Majeure for any delay or failure to perform or carry out any provision of this Interconnection Agreement to the extent that such Party has been negligent or engaged in intentional misconduct and such negligence or intentional misconduct substantially and directly caused that Party's delay or failure to perform or carry out its duties and obligations under this Interconnection Agreement.



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Section 8.02 Procedures for Declaring Force Majeure.

A Party claiming Force Majeure must:

- (a) Give written notice to the other Party of the occurrence of a Force Majeure as soon as practicable following such occurrence;
- (b) Use Commercially Reasonable Efforts to resume performance or the provision of service hereunder as soon as practicable;
- (c) Take all Commercially Reasonable actions to correct or cure the Force Majeure;
- (d) Exercise all Commercially Reasonable Efforts to mitigate or limit damages to the other Party; except that neither Party will be required to settle any strike, walkout, lockout, or other labor dispute on terms which, in the sole judgment of the Party involved in the dispute, are contrary to its interest; and
- (e) Provide written notice to the non-declaring Party, as soon as practicable, of the cessation of the adverse effect of the Force Majeure on its ability to perform its obligations under this Interconnection Agreement.

Article IX. JURISDICTION AND REGULATORY APPROVALS

Section 9.01 Jurisdiction.

This Interconnection Agreement is subject to the jurisdiction of the MPUC as part of the provision of retail electric service by Company to Customer pursuant to the Tariff and ESA. The Parties agree that no FERC jurisdictional services or other activities are provided for in this Interconnection Agreement.

Section 9.02 Interconnection Agreement Conditioned on Approval by MPUC.

This Interconnection Agreement will be subject to any and all jurisdictional regulatory approvals deemed necessary under Applicable Law or prudent by Company in its sole discretion; including, without limitation: (a) approval of this Interconnection Agreement; (b) approvals for appropriate rate treatment of Company's costs of the Company Facilities as may be requested by Company in Company's sole discretion; and (c) any other approvals of the MPUC in relation to this Interconnection Agreement that Company deems necessary or prudent in Company's sole discretion (collectively, the "Regulatory Approvals"). Company will, in its sole discretion, use all Commercially Reasonable Efforts consistent with Good Utility Practice to obtain the Regulatory Approvals, and Customer will reasonably cooperate with any request of Company in furtherance of Company's request for the Regulatory Approvals. Company will keep Customer apprised of the status of such filings.

Section 9.03 Termination for Failure of Regulatory Approvals.

Notwithstanding anything in this Interconnection Agreement to the contrary, and without limiting any other obligations of Customer, this Interconnection Agreement will be null



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and void and of no effect at no cost to Company or Customer in the event that any one of the following occurs: (a) Company is unable to obtain an order of the MPUC specifically approving this Interconnection Agreement without modification; (b) Company is unable to receive MPUC approval without modification with respect to rate base treatment of all costs of the Company Facilities; or (c) Company is unable to receive approvals contemplated and provided for in the ESA and/or CRRA. In the event any of the proceeding events occurs, the Parties will negotiate in good faith to modify this Interconnection Agreement in compliance with any final order of the MPUC, provided, however, that such modifications provide the Parties with economic terms that are substantially equivalent to those provided under this Interconnection Agreement and the Ancillary Agreements. In the event mutual agreement cannot be reached within thirty (30) Business Days, then this Interconnection Agreement will terminate unless Company and Customer mutually agree in writing to accept any modifications to this Interconnection Agreement and/or to the ratemaking treatment of the Company Facilities and/or to the ratemaking treatment contemplated and provided for in the ESA and/or the CRRA.

Article X. NOTICES

Section 10.01 Notices.

Any notice, demand, request, or communication required or authorized by this Interconnection Agreement will be hand delivered or mailed by certified mail, return receipt requested, with postage prepaid, to Parties at the addresses set forth in Appendix D. In addition to the obligations set forth in the preceding sentence, a Party providing notice, demand, request, or communication pursuant to this Section 10.01 may also provide a courtesy copy of such notice, demand, request, or communication via electronic mail, or email. Any Party may update that portion of Appendix D that pertains to such Party's address by giving written notice to the other Parties of such change at any time.

Article XI. ASSIGNMENT

Section 11.01 Successors and Assigns.

This Interconnection Agreement will be binding upon the respective Parties, their successors and permitted assigns, on and after the Effective Date hereof.

Section 11.02 Assignment Restrictions.

This Interconnection Agreement may be assigned by either Party only with the written consent of the other; provided, however, that either Party may assign this Interconnection Agreement, upon written notice to the other Party, to any Affiliate of the assigning Party with the legal authority and operational ability to satisfy the obligations of the assigning Party under this Interconnection Agreement, provided, however, that the obligations with respect to the guarantee provided pursuant to Section 16.07 may not be delegated or assigned to an Affiliate of Customer that does not meet the definition of Guarantor. Where Customer assigns this Interconnection Agreement to an Affiliate,



failure by Customer to provide notice of such assignment will not constitute a Customer event of default.

Article XII. INSURANCE

Section 12.01 Insurance Coverage.

Each Party will, at its own expense, maintain in force until this Interconnection Agreement is terminated and until released by the other Party, the following insurance coverages, with insurers authorized to do business in the State of Minnesota:

- (a) Employer's Liability and Worker's Compensation Insurance providing statutory benefits in accordance with the Applicable Law of the State of Minnesota.
- (b) Commercial General Liability, including premises and operations, personal injury, broad form property damage, broad form blanket contractual liability coverage (including coverage for the contractual indemnification), products and completed operations coverage, coverage for explosion, collapse, and underground hazards, independent contractors coverage, coverage for pollution to the extent normally available and punitive damages to the extent normally available and a cross liability endorsement, with minimum limits of one million dollars (\$1,000,000) per occurrence/one million dollars (\$1,000,000) aggregate combined single limit for personal injury, bodily injury, including death and property damage including premises and operations, personal injury, broad form property damage.
- (c) Comprehensive Automobile Liability for coverage of owned and non-owned and hired vehicles, trailers or semi-trailers designed for travel on public roads, with a minimum, combined single limit of one million dollars (\$1,000,000) per occurrence for bodily injury, including death, and property damage.
- (d) Excess Public Liability Insurance over and above the Employers' Liability Commercial General Liability and Comprehensive Automobile Liability Insurance coverage, with a minimum combined single limit of ten million dollars (\$10,000,000) per occurrence/ ten million dollars (\$10,000,000) aggregate.
- (e) The Commercial General Liability Insurance, Comprehensive Automobile Insurance, and Excess Public Liability Insurance policies will name the other Party, its parent, associated and Affiliate companies, and their respective directors, officers, employees, and agents ("Other Party Group") as additional insureds. All policies will contain provisions whereby the insurers waive all rights of subrogation in accordance with the provisions of this Interconnection Agreement against the Other Party Group and provide thirty (30) Days advance written notice to the Other Party Group prior to the anniversary date of cancellation or any material change in coverage or condition.
- (f) The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance policies will contain provisions



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that specify that the policies will apply to such extent without consideration for other policies separately carried. Each Party will be responsible for its respective deductibles or retentions.

- (g) The Commercial General Liability Insurance, Comprehensive Automobile Liability Insurance, and Excess Public Liability Insurance policies, if written on a Claims First Made Basis, will be maintained in full force and effect for two (2) years after termination of this Interconnection Agreement, which coverage may be in the form of tail coverage or extended reporting period coverage if agreed by the Parties.
- (h) The requirements contained herein as to the types and limits of all insurance to be maintained by the Parties are not intended to and will not in any manner, limit or qualify the liabilities and obligations assumed by the Parties under this Interconnection Agreement.
- (i) Within ten (10) Days following execution of this Interconnection Agreement, and as soon as practicable after the end of each fiscal year or at the renewal of the insurance policy and in any event within ninety (90) Days thereafter, each Party will provide certification of all insurance required in this Section 12.01, executed by each insurer or by an authorized representative of each insurer.
- (j) Notwithstanding the foregoing, each Party may self-insure to meet the minimum insurance requirements of subsections (a)-(h) of this Section 12.01 to the extent the Party maintains a self-insurance program; provided that, such Party's senior secured debt is rated at investment grade or better by Standard & Poor's and that its self-insurance program meets the minimum insurance requirements set forth in subsections (a)-(h) of this Section 12.01. For any period of time that a Party's senior secured debt is unrated by Standard and Poor's, such Party will not self-insure and will comply with the insurance requirements set forth in subsections (a)-(i) of this Section 12.01. In the event that a Party is permitted to self-insure pursuant to this Section 12.01(j), it will notify the other Party that it meets the requirements to self-insure and that its self-insurance program meets the minimum insurance requirements in a manner consistent with that specified in this Section 12.01(j).

Section 12.02 Subcontractors.

Each Party will require its subcontractors to maintain substantially equivalent insurance coverage and in substantially equivalent amounts as is required of the Parties as set forth in this Article XII, and provide proof of coverage to the other Party upon request.

Section 12.03 Notice of Occurrence.

The Parties agree to report to each other in writing as soon as practicable all accidents or occurrences resulting in injuries to any person, including death, and any property damage arising out of this Interconnection Agreement.



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Article XIII. CONSEQUENTIAL DAMAGES, INDEMNITY, AND RISK OF LOSS

Section 13.01 Waiver of Consequential Damages.

In no event will a Party, its governing board members, officers, employees, or agents be liable to the other Party under this Interconnection Agreement from any cause howsoever arising in contract, tort, or otherwise for any indirect, incidental, special, punitive, exemplary, or consequential damages, including but not limited to, loss of use, loss of revenue, loss of profit, and/or cost of replacement power, interest charges, cost of capital, claims of its customers to which service is made.

Section 13.02 Indemnity.

Each Party will at all times indemnify, defend, and hold harmless the other Party, its shareholders, members, partners, Affiliates, employees, consultants, representatives, agents, successors, and permitted assigns ("Indemnified Party") from any and all liability, damages, losses, claims, including claims and actions relating to injury to or death of any person or damage to property, demand, suits, recoveries, costs and expenses, court costs, attorney fees, and all other obligations by or to third parties, arising out of or resulting from the other Party's ("Indemnifying Party") negligence or breach of its obligations under this Interconnection Agreement, except in cases of negligence, gross negligence, or intentional wrongdoing by the Indemnified Party. Nothing in this Section 13.02 will relieve Company or Customer of any liability to the other for any breach of this Interconnection Agreement.

- (a) If an Indemnified Party is entitled to indemnification under this Section 13.02 as a result of a claim by a third party, and the Indemnifying Party fails, after notice and reasonable opportunity to proceed, to assume the defense of such claim, the Indemnified Party may at the expense of the Indemnifying Party contest, settle, or consent to the entry of any judgment with respect to, or pay in full, such claim.
- (b) If an Indemnifying Party is obligated to indemnify and hold any Indemnified Party harmless under this Section 13.02, the amount owing to the Indemnified Party will be the amount of such Indemnified Party's loss net of any insurance or other recovery.
- (c) Promptly after receipt by an Indemnified Party of any claim or notice of the commencement of any action or administrative or legal proceeding or investigation as to which the indemnity provided in this Section 13.02 may apply, the Indemnified Party will notify the Indemnifying Party of such fact. Any failure of or delay in such notification will not affect the Indemnifying Party's obligation to indemnify the Indemnified Party unless such failure or delay is materially prejudicial to the Indemnifying Party.

Section 13.03 Risk of Loss.

Except under situations of negligence, gross negligence, or intentional wrong-doing by the other Party, each Party will have the full risk of loss for its own property and material,



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and each Party will (subject to Article XII) obtain and maintain insurance coverage accordingly under its own insurance and risk management procedures. To the extent permitted by each Party's insurer, at no additional cost to that Party, each Party will require its property insurer to waive the right of subrogation. Each Party will have title and risk of loss for those materials or capital equipment purchased for its ownership by the other Party as an authorized agent under this Interconnection Agreement confirmed by written confirmation and approval of supplier, specifications, equipment warranty, delivery and installation arrangements (the principal being entitled to any sales tax exemptions). All such equipment and materials will be inspected by the purchasing agent Party upon delivery and damaged or nonconforming equipment or materials will be rejected and returned to the seller upon consultation and agreement with the Party for whom the equipment was purchased.

Article XIV. DEFAULT AND TERMINATION

Section 14.01 Default by Customer.

Customer will be in default if it materially breaches any provision of this Interconnection Agreement, and fails to cure any such breach within sixty (60) Days after written notice by Company of the existence and nature of such alleged breach; provided, however, that if such breach is not reasonably capable of being cured within such sixty (60)-Day period, then Customer will have additional time (not exceeding an additional ninety (90) Days) as is reasonably necessary to cure the breach so long as Customer promptly commences and diligently pursues the cure.

Section 14.02 Default by Company.

Company will be in default if it materially breaches any provision of this Interconnection Agreement, and fails to cure any such breach within sixty (60) Days after written notice by Customer of the existence and nature of such alleged breach; provided, however, that if such breach is not reasonably capable of being cured within such sixty (60)-Day period, then Company will have additional time (not exceeding an additional ninety (90) Days) as is reasonably necessary to cure the breach, so long as Company promptly commences and diligently pursues the cure.

Section 14.03 Termination for Default.

Should a Party fail to cure a default pursuant to Section 14.01 or Section 14.02, as applicable, within the applicable cure period, and the default is not contested pursuant to the dispute resolution process provided in Section 15.01 or other legal processes, the non-defaulting Party will have the right (a) to terminate this Interconnection Agreement subject to MPUC approval and other defenses by giving written notice to the Party in default, and (b) whether or not the non-defaulting Party terminates this Interconnection Agreement, to recover from the defaulting Party all amounts due hereunder, plus all other damages and remedies to which the non-defaulting Party is entitled subject to the limitations set forth in Article XIII.



Article XV. DISPUTE RESOLUTION

Section 15.01 Dispute Resolution Process.

In the event the Parties are required by this Interconnection Agreement or mutually agree to try and resolve a dispute, the Parties will first refer the dispute to designated senior representatives, with authority to bind their respective Party, for resolution on an informal basis as promptly as practicable. In the event the designated representatives are unable to resolve the dispute within sixty (60) Days, or such other period as the Parties may mutually agree, either Party may initiate legal proceedings at the MPUC or, in the event that the MPUC declines to adjudicate such dispute, a federal or state court of competent jurisdiction located in the State of Minnesota.

Article XVI. MISCELLANEOUS

Section 16.01 Third Party Contracts.

The Parties recognize that each has entered into and may in the future enter into contractual commitments with various third parties regarding benefits, use, and operation of network transmission facilities it owns within the interconnected regional transmission network. Each Party hereby covenants that its respective contracts with third parties will not interfere with its obligations to the other Party made under this Interconnection Agreement.

Section 16.02 No Residual Value.

This Interconnection Agreement will not be construed to provide any residual value to either Party or its successors or permitted assigns or any other party, for rights to, use of, or benefits from the other Party's system following expiration of this Interconnection Agreement.

Section 16.03 No Third Party Beneficiary.

Unless otherwise specifically provided in this Interconnection Agreement, the Parties do not intend to create rights in or to grant remedies to any third Party as a beneficiary of this Interconnection Agreement or of any duty, covenant, obligation, or undertaking established hereunder.

Section 16.04 Headings.

Article headings and titles are included for the convenience of Parties and will not be used to construe the meaning of any provision of this Interconnection Agreement.

Section 16.05 Governing Law.

This Interconnection Agreement will be interpreted and governed by the internal laws of the State of Minnesota, without regard to its conflict of laws provisions.



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Section 16.06 No Joint System.

The Parties each own and operate separate interconnected electric systems, and no provision of this Interconnection Agreement will be interpreted to mean or imply the Parties have established or intend to establish a jointly owned electric system, a joint venture, trust, a partnership, or any other type of association.

Section 16.07 Guarantee.

Within fifteen (15) Business Days of the Notice to Construct, Customer will post a guarantee from a Guarantor in a form substantially similar to Appendix E, and in an amount equivalent to the Early Termination Fee to secure any obligations and ensure performance under this Interconnection Agreement by Customer; such guarantee will address performance of all obligations by Customer hereunder, including without limitation, any indemnities, payments of monies, insurance, damages, and construction.

Section 16.08 Relationship to Tariffs.

The Parties acknowledge that all the rights and obligations identified in the Tariff will apply to this Interconnection Agreement, and nothing contained herein will abrogate any of the rights or entitlements of Company or Customer pursuant to the Tariff other than as explicitly set forth in this Interconnection Agreement, subject to any required approval of the MPUC or other applicable regulatory authority for the provision of retail electric service at transmission voltage to Customer. In the event any term of this Interconnection Agreement conflicts with the Tariff, the terms of this Interconnection Agreement will control.

Section 16.09 Amendment.

Any amendment, alteration, variation, modification or waiver of the provisions of this Interconnection Agreement, other than revisions to the Appendices authorized by this Interconnection Agreement, will be valid only after it has been reduced to writing and duly signed by both Parties, and if required, approved by the appropriate regulatory bodies.

Section 16.10 Waiver.

The failure of either Party to enforce or insist upon compliance with or strict performance of any of the terms or conditions of this Interconnection Agreement, or to take advantage of any of its rights thereunder, will not constitute a waiver or relinquishment of any such terms, conditions, or rights, but the same will be and remain at all times in full force and effect.

Section 16.11 Counterparts.

This Interconnection Agreement may be executed in any number of counterparts, and each executed counterpart will have the same force and effect as an original instrument.



Section 16.12 Severability.

If any Governmental Authority holds or declares that any provision of this Interconnection Agreement is invalid, or if, as a result of a change in any Applicable Law, any provision of this Interconnection Agreement is rendered invalid or results in the impossibility of performance thereof, the remainder of this Interconnection Agreement not affected thereby will continue in full force and effect. In such an event, the Parties will promptly renegotiate in good faith new provisions to restore this Interconnection Agreement as nearly as possible to its original intent and effect.

Article XVII. CONFIDENTIAL INFORMATION

Section 17.01 Furnishing of Information.

It is recognized by the Parties that the successful operation of this Interconnection Agreement depends upon the cooperation by the Parties in the operation of their systems. As a part of such cooperation, subject to the limitations regarding disclosing Confidential Information provided in this Interconnection Agreement, each Party agrees that it will furnish to the other Party such data concerning its system as may be necessary to support the other Party's system reliability. The Parties stipulate and agree that, absent an order issued by the MPUC or a court of competent jurisdiction, all Confidential Information disclosed by either Party to the receiving Party may and will be, to the fullest extent permitted by Applicable Law, withheld from public disclosure pursuant to Minn. Stat. §§ 13.02, subd. 9, 13.37, Minn. R. 7829.0500, and the MPUC's Revised Procedures for Handling Trade Secret and Privileged Data, all as amended from time to time.

Section 17.02 Confidential Information.

- (a) "Confidential Information" means (1) any confidential, proprietary, or trade secret information of a plan, specification, pattern, procedure, design, device, drawing, list, concept, customer information, policy, or compilation relating to the present or planned business of a Party, which is designated as Confidential Information by the Party (or Affiliate) supplying the information, whether conveyed orally, electronically, in writing, through inspection, or otherwise; or (2) any Critical Energy Infrastructure Information as that term is defined in 18 C.F.R. § 388.113. Confidential Information includes, without limitation, all information relating to a Party's (or Affiliate's) technology, research and development, business affairs, and pricing, and any information supplied by a Party to another Party on a confidential basis prior to the execution of this Interconnection Agreement.
- (b) Confidential Information does not include information that the receiving Party can demonstrate: (1) is generally available to the public other than as a result of a disclosure by the receiving Party; (2) was in the lawful possession of the receiving Party on a non-confidential basis before receiving it from the disclosing Party; (3) was supplied to the receiving Party without restriction by a third party, who, to the knowledge of the receiving Party, was under no obligation to the other Party to keep such information confidential; (4) was independently developed by the receiving Party without reference to Confidential



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Information of the disclosing Party; or (5) is, or becomes, publicly known, through no wrongful act or omission of the receiving Party or breach of this Interconnection Agreement.

Information designated as Confidential Information will no longer be deemed confidential if the Party that designated the information as Confidential Information notifies the other Party that such information no longer is confidential.

- (c) Information is Confidential Information only if it is clearly designated or marked in writing as confidential on the face of the document; or, if it is disclosed in a manner in which the disclosing Party reasonably communicated, or the receiving Party should reasonably have understood under the circumstances, including without limitation those described in Section 17.02(a) above, that the disclosure should be treated as confidential, whether or not the specific designation "confidential" or any similar designation is used. Each Party will be responsible for clearly designating or marking information governed by FERC's Critical Energy Infrastructure Information rules and regulations.

Section 17.03 Protection of Confidential Information.

- (a) No Party will disclose any Confidential Information of the other Party obtained pursuant to or in connection with the performance of this Interconnection Agreement to any third party without the express written consent of the providing Party; provided, however, that any Party may produce Confidential Information in response to a subpoena, discovery request, or other compulsory process issued by a Governmental Authority upon reasonable notice to the providing Party that: (a) a protective order from such Governmental Authority has been issued relating to the Confidential Information; and (b) a binding nondisclosure agreement is in effect with a proposed recipient of any Confidential Information.
- (b) The Parties will use at least the same standard of care to protect Confidential Information they receive as they use to protect their own Confidential Information from unauthorized disclosure, publication, or dissemination.
- (c) Any Party may use Confidential Information solely: (1) to fulfill its obligations to the other Party under this Interconnection Agreement; (2) to fulfill its regulatory requirements except to the extent that such information constitutes or has been designated Critical Energy Infrastructure Information; (3) in any proceeding before a Governmental Authority addressing any dispute arising under this Interconnection Agreement, subject either to a written confidentiality agreement with all Parties (including, if applicable, an arbitrator(s)) or to a protective order; or (4) as required by Applicable Law. As it pertains to clauses (3) and (4), notwithstanding the absence of a protective order or waiver, a Party may disclose such Confidential Information which, in the opinion of its counsel, the Party is legally compelled to disclose. In the event that the receiving Party is legally requested or required (by oral questions, interrogatories, requests for information or documents, subpoena, civil investigative demand, or similar process, or in the opinion of its counsel, by Applicable Law) to disclose any Confidential Information, the receiving Party will, to the extent permitted under Applicable Law, promptly notify the disclosing Party of such request or requirement prior to disclosure, so that the disclosing Party may



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seek an appropriate protective order and/or waive compliance with the terms of this Interconnection Agreement and will request confidential treatment of any such disclosure.

- (d) The Parties agree that monetary damages by themselves may be inadequate to compensate a Party for the other Party's breach of its obligations under this Article XVII. Each Party accordingly agrees that the other Party is entitled to equitable relief, by way of injunction or otherwise and without the requirement of posting a bond, if it breaches or threatens to breach its obligations under this Article.

Section 17.04 Survival.

The confidentiality obligations of this Article will survive termination of this Interconnection Agreement for a period of two (2) years.

[SIGNATURE PAGE FOLLOWS]



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SIGNATURES

In Witness Whereof, the Parties have caused this Interconnection Agreement to be duly executed as of the date first written above.

Honeycrisp Power LLC,
a Delaware limited liability company

DocuSigned by:
Todd Guerrero
By: _____
AFCFFE44BAD1423..

Name: Todd Guerrero

Title: Authorized Signatory

NORTHERN STATES POWER COMPANY,
a Minnesota corporation,

DocuSigned by:
Christopher Clark
By: _____
60404F038DE488..

Name: Christopher B. Clark

Title: President



**APPENDIX A
IDENTIFICATION OF COMPANY FACILITIES AND POINT(S) OF INTERCONNECTION**

This Appendix A and its sub-appendices (i.e., A-1 through A-5), identify certain Company Facilities that are necessary to enable Customer to carry out the initial construction and potential expansion of the Data Center. Company need not undertake any action (although it may do so) in furtherance of the development or permitting of the Company Facilities identified in Appendix A or its sub-appendices until such time as Company receives a Notice to Construct from Customer identifying the specific Company Facilities to be constructed. A form of Customer's Notice to Construct is provided in Appendix C.

Additional requirements with regard to this Appendix A and with the Notice to Construct are provided in Article IV of this Interconnection Agreement.

Each Appendix provides the following information: (1) scope of incremental work and total load served (MW); (2) estimated incremental cost of the Company Facilities identified (in 2018 United States dollars); (3) estimated time required to design, permit, procure, and construct the identified Company Facilities; (4) description of the Company Facilities, including Point(s) of Interconnection and metering information; and (5) illustrative one-line diagram(s) and area map(s).

The cost estimate listed for the Company Facilities identified in Appendix A-1 is a scoping level estimate [REDACTED] and the cost estimates listed for the Company Facilities identified in Appendices A-2 through A-5, respectively, are indicative level estimates [REDACTED]. All cost estimates are provided in 2018 United States dollars.

The Parties acknowledge that the scope of work, total load served, estimated incremental costs, estimated timeframes, description of the Company Facilities, and illustrative one-line diagram(s) and area map(s) are based on the Parties' good faith efforts to identify the scope of work for the Company Facilities identified in Appendices A-1 through A-5 as of the Effective Date of this Interconnection Agreement. The Parties further acknowledge that the information provided in each sub-appendix is subject to change, and may be affected by numerous factors outside of the Parties' control, including without limitation, the increase or decrease of load in the vicinity of the Data Center resulting from the actions of other customers, the change in cost of materials, and other factors.

The Parties will work together in good faith to reevaluate the information included in the relevant sub-appendix on an as-needed basis, consistent with system conditions at that time. The Parties also acknowledge that, following the initial Notice to Construct, the Parties may enter into additional agreements to secure Company's design, engineering, and performance of other pre-construction work associated with the additional Company Facilities.

A summary of the available load increments is provided below:



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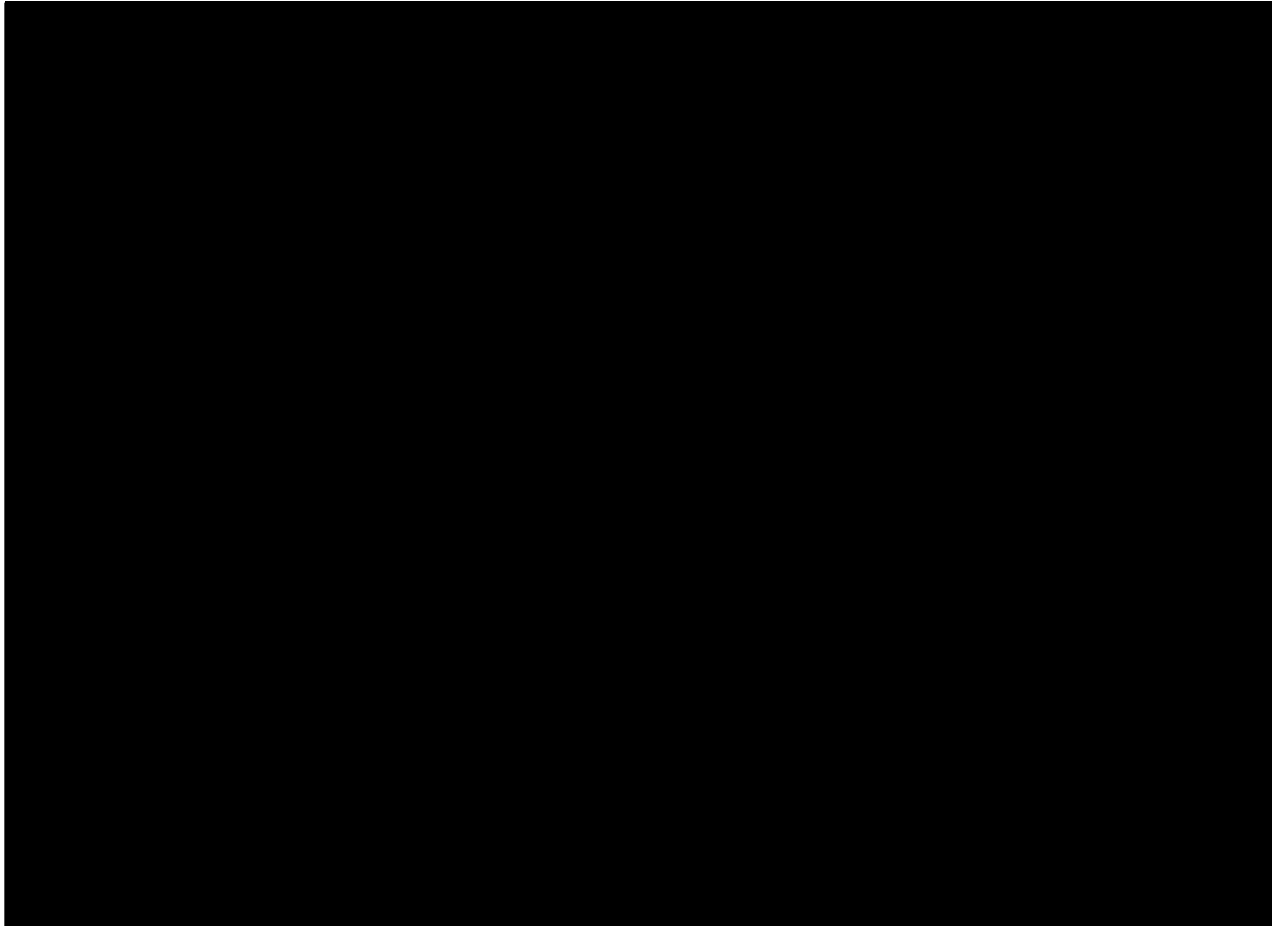
Appendix	Incremental Load Supported by Individual Group (MW @ █ power factor)	Total Cumulative Load Supported (MW @ █ power factor)
Appendix A-1	█	█
Appendix A-2	█	█
Appendix A-3	█	█
Appendix A-4	█	█
Appendix A-5	█	█

* Customer may operate at up to █ MW of peak load but recognizes that such operation may be at N-1 conditions for some period of time depending on load conditions within the area near the Data Center; and provided that Customer has been in operation sufficiently long and provided sufficiently accurate Customer Load Forecasts for Company to reasonably anticipate Customer load of █ MW.



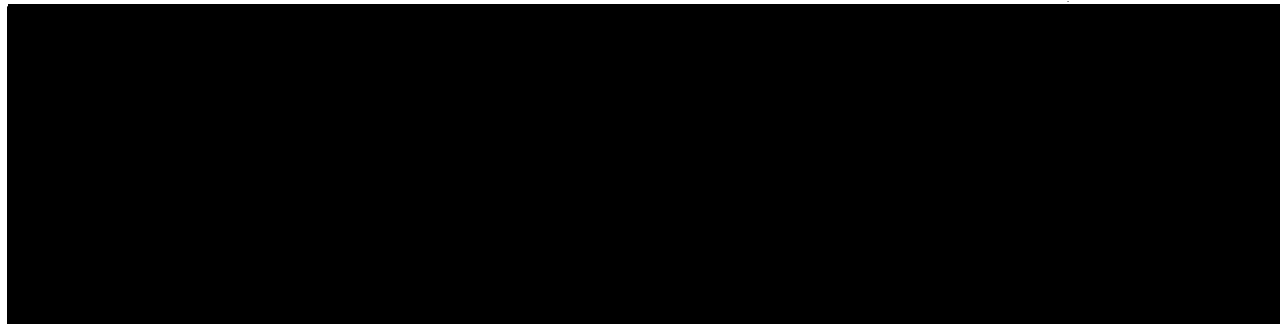
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**APPENDIX A-1
FIRST GROUP OF IDENTIFIED COMPANY FACILITIES
AND POINT(S) OF INTERCONNECTION**



II. Estimated Incremental Cost (in 2018 dollars, ±20 percent)

\$12,980,000



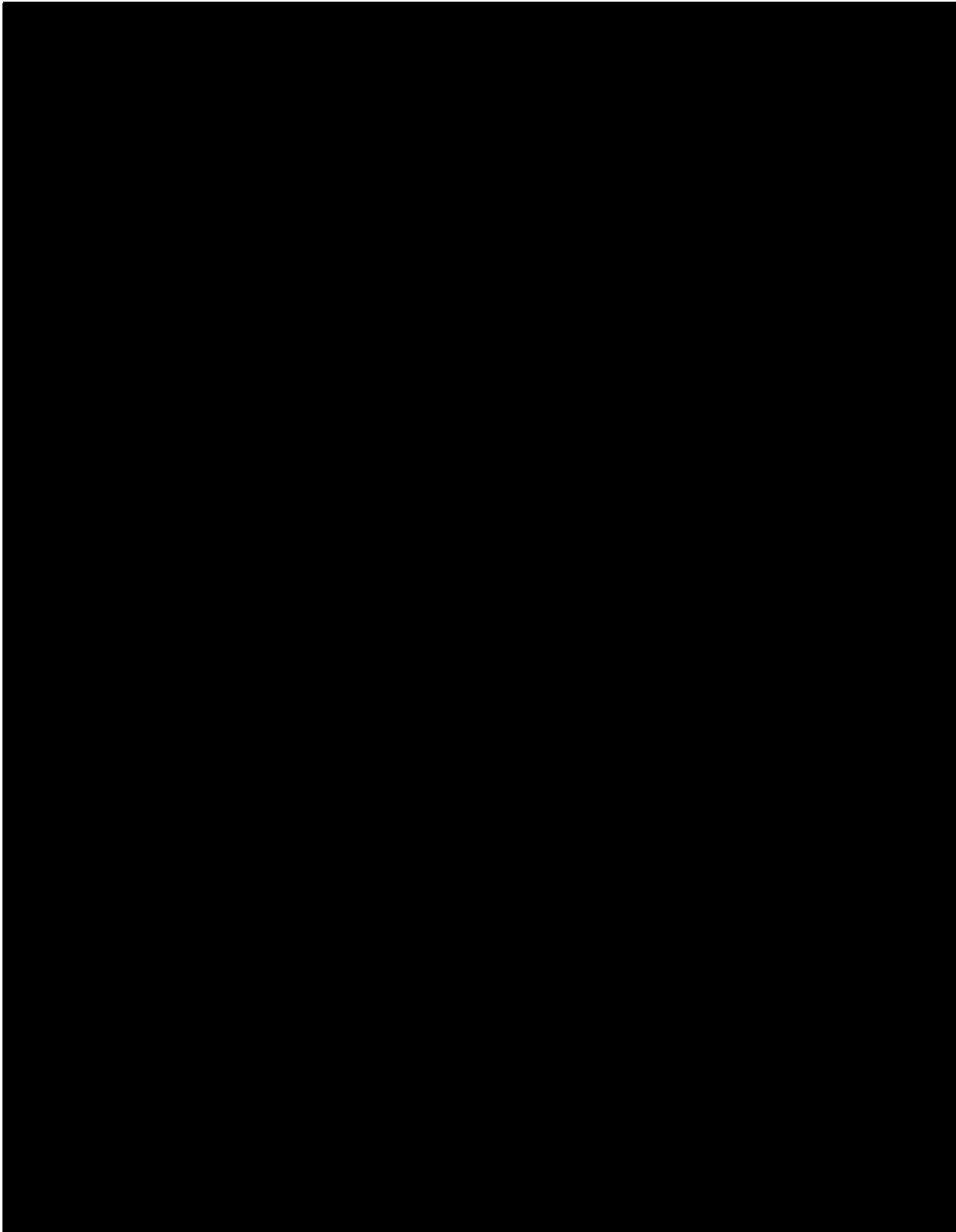
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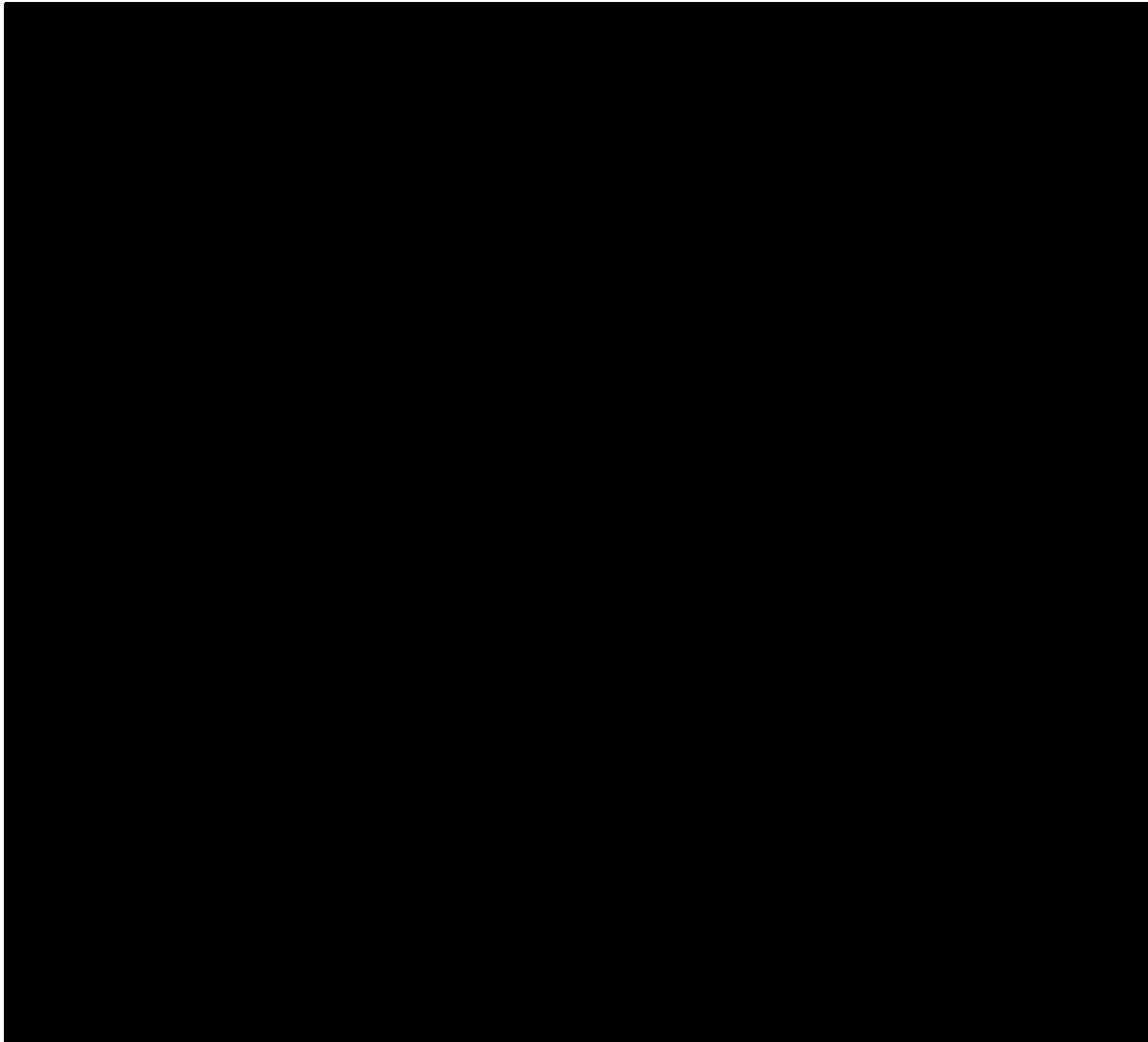
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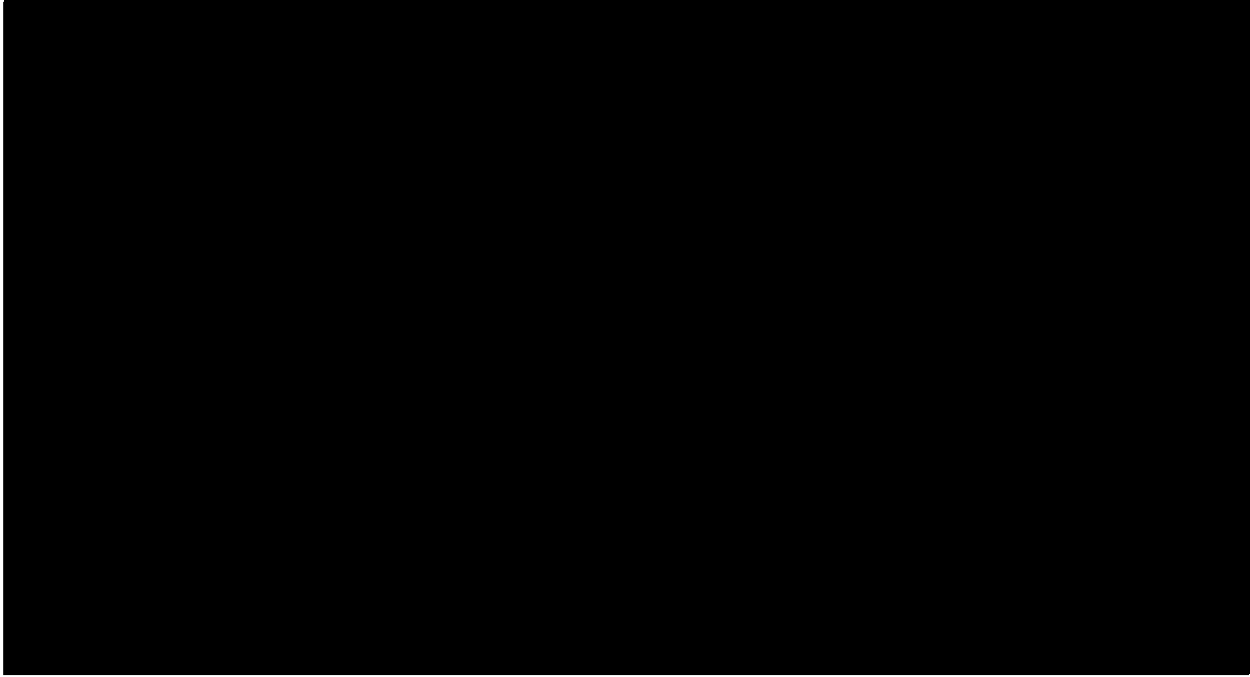
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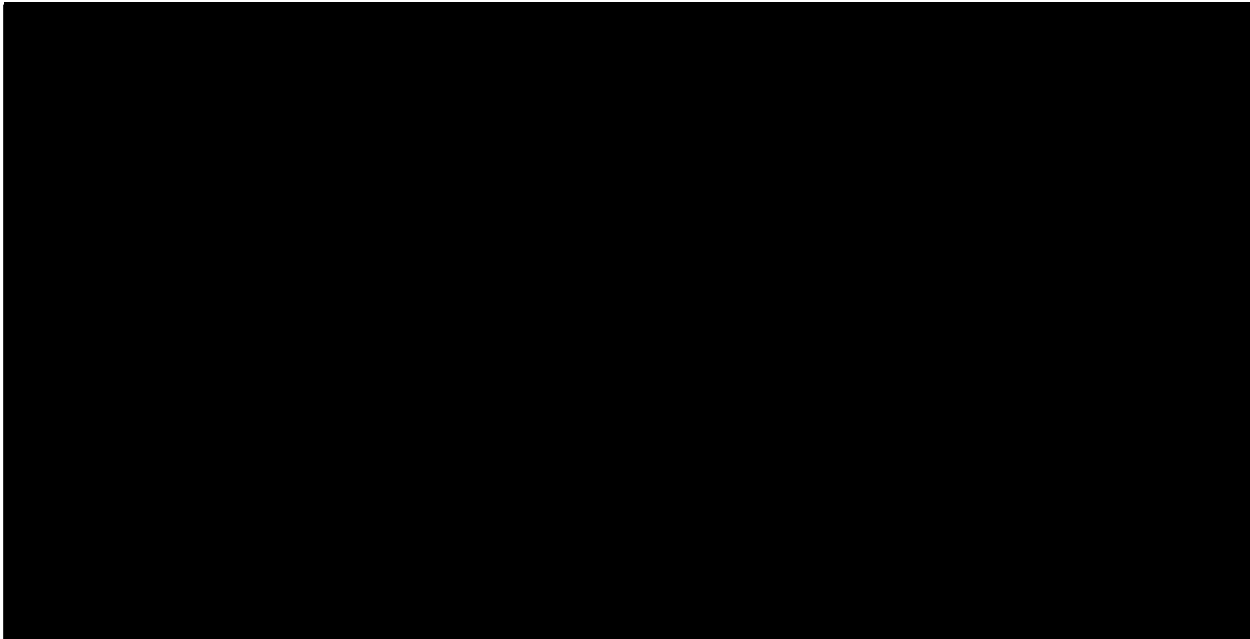


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**APPENDIX A-2
SECOND GROUP OF IDENTIFIED COMPANY FACILITIES
AND POINT(S) OF INTERCONNECTION**



II. Estimated Incremental Cost (in 2018 dollars, ± 50 percent) \$22,500,000



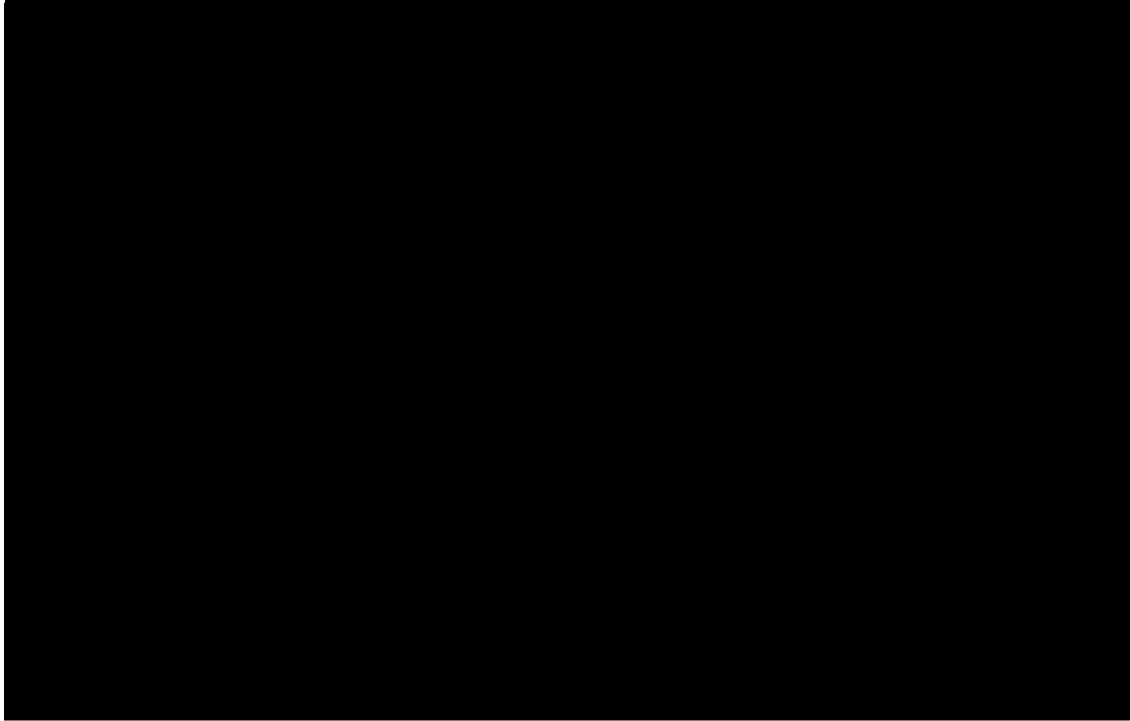
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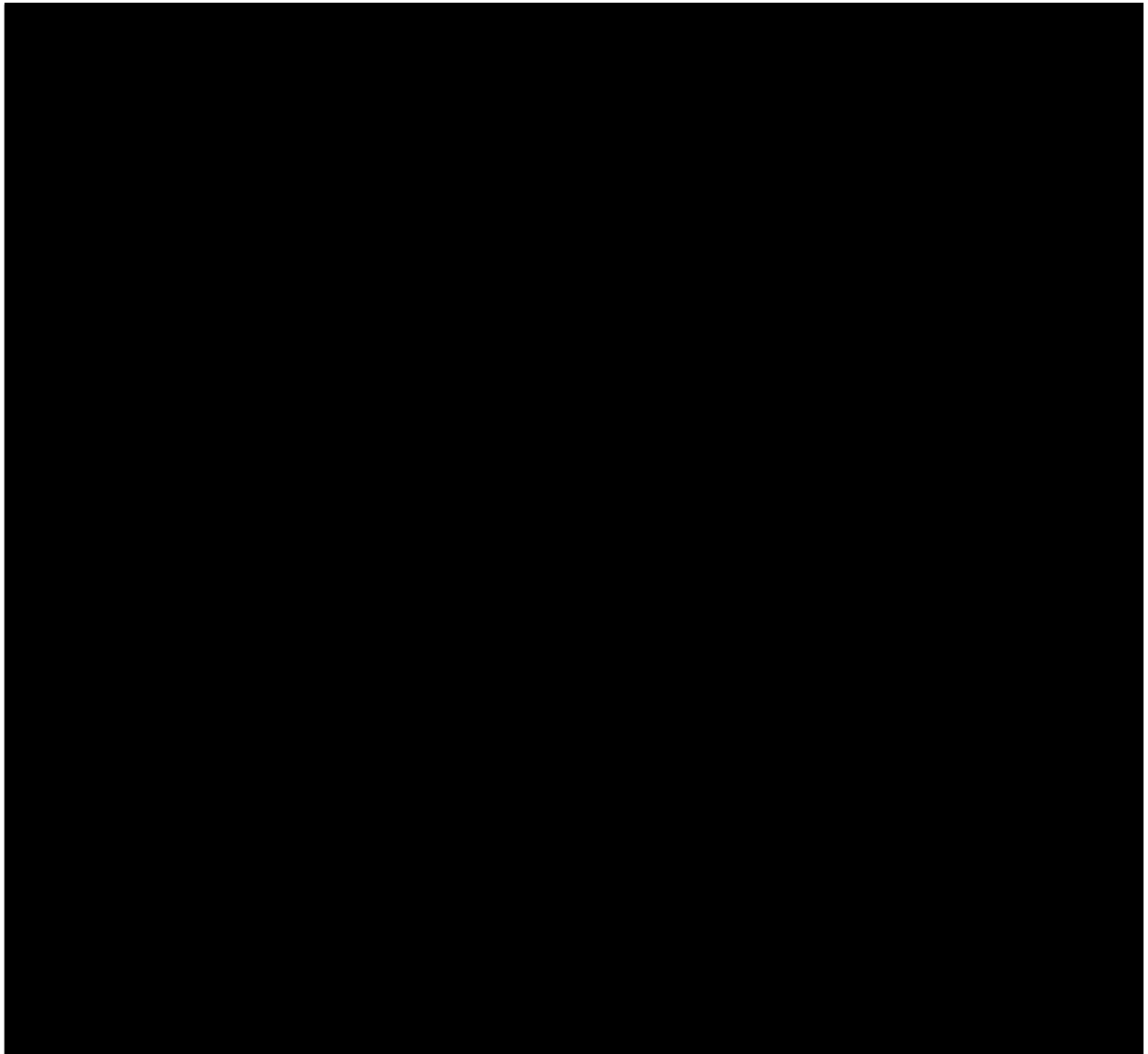
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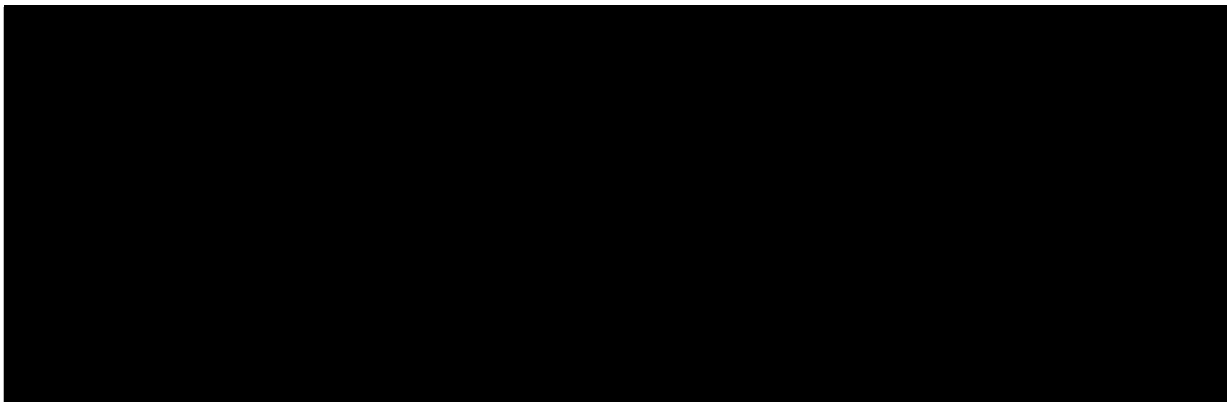
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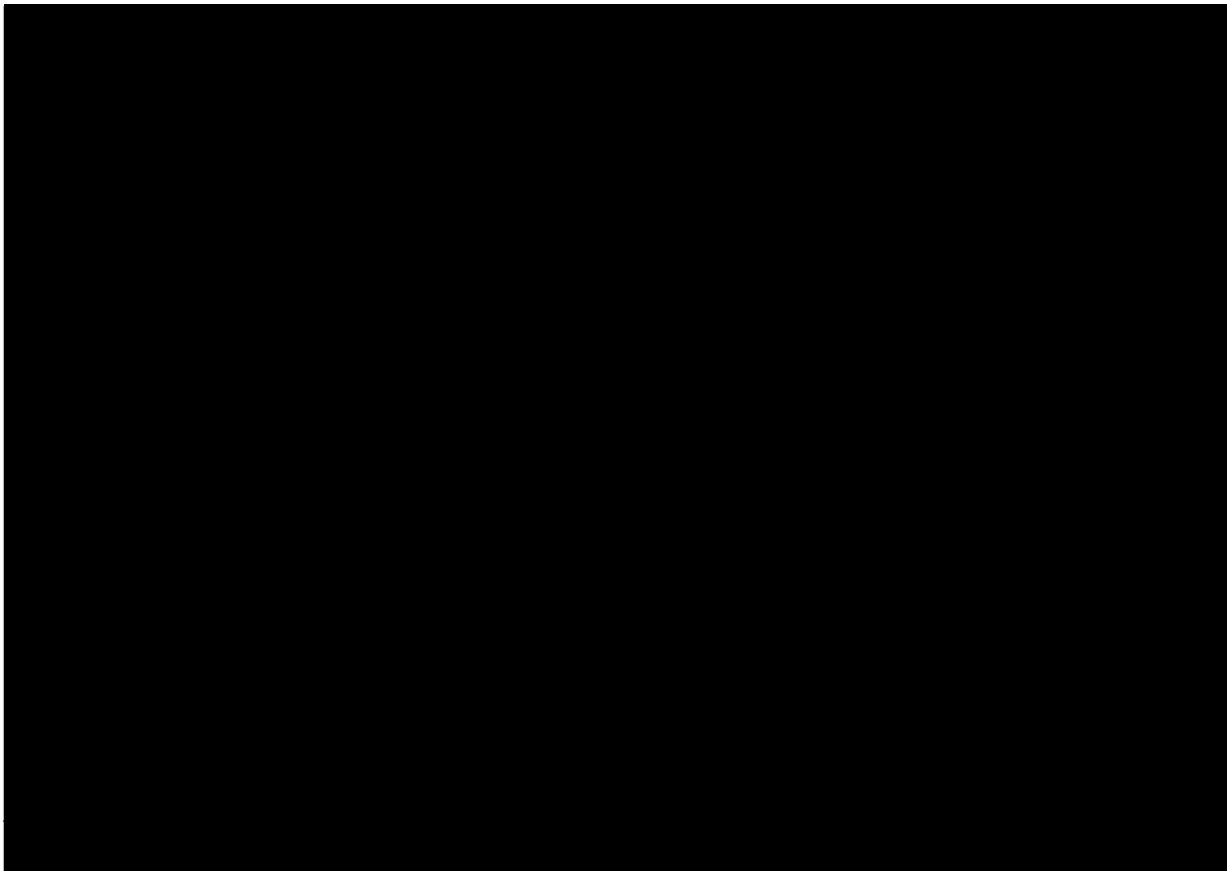


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**APPENDIX A-3
THIRD GROUP OF IDENTIFIED COMPANY FACILITIES
AND POINT(S) OF INTERCONNECTION**



II. Estimated Incremental Cost (in 2018 dollars, ±50 percent) \$14,000,000



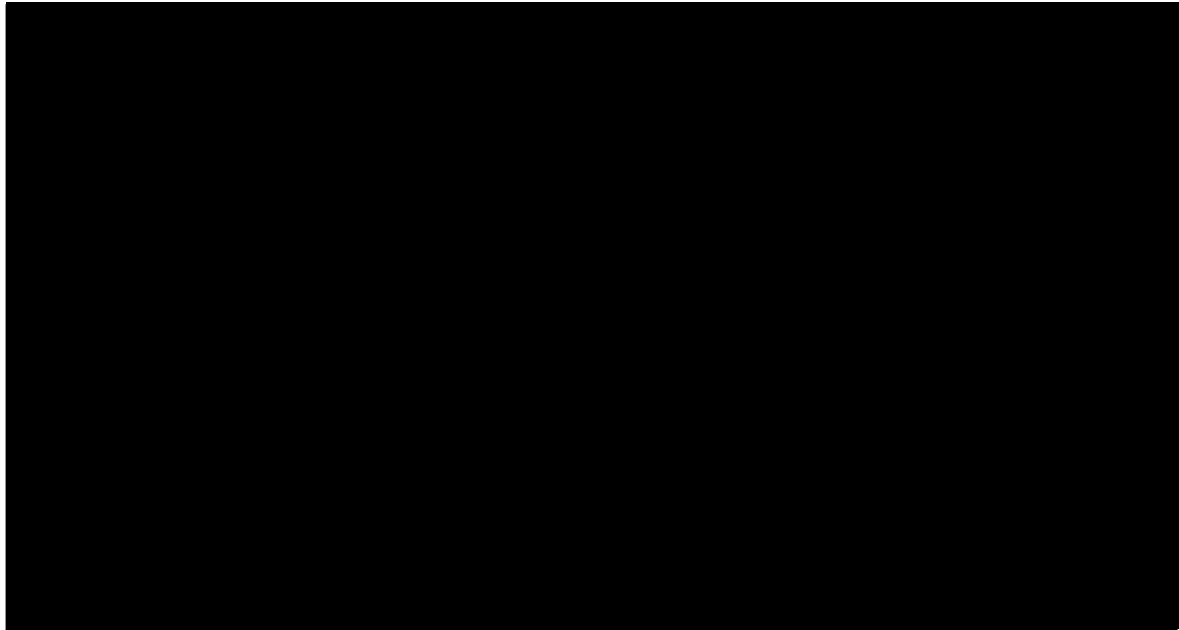
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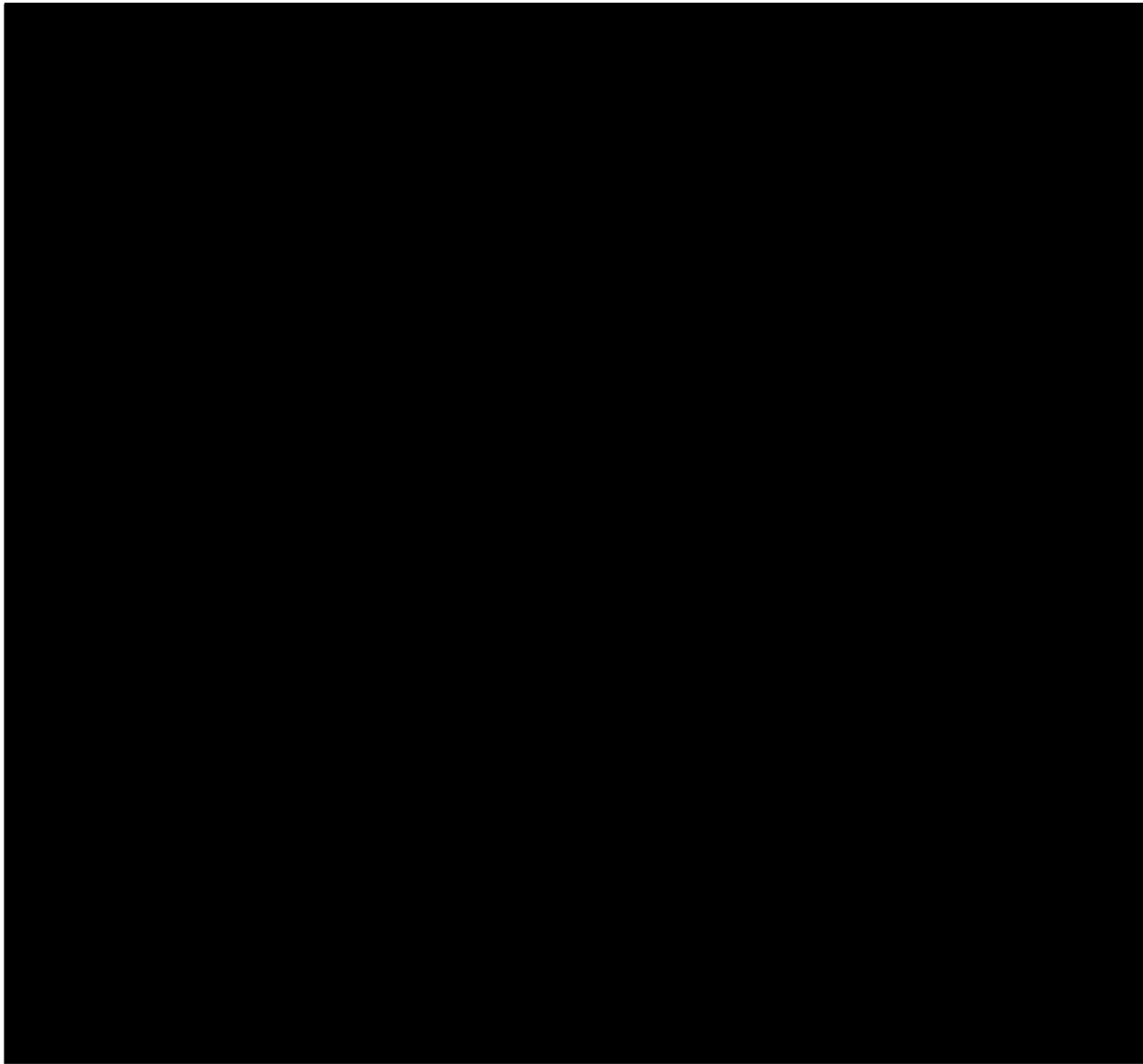
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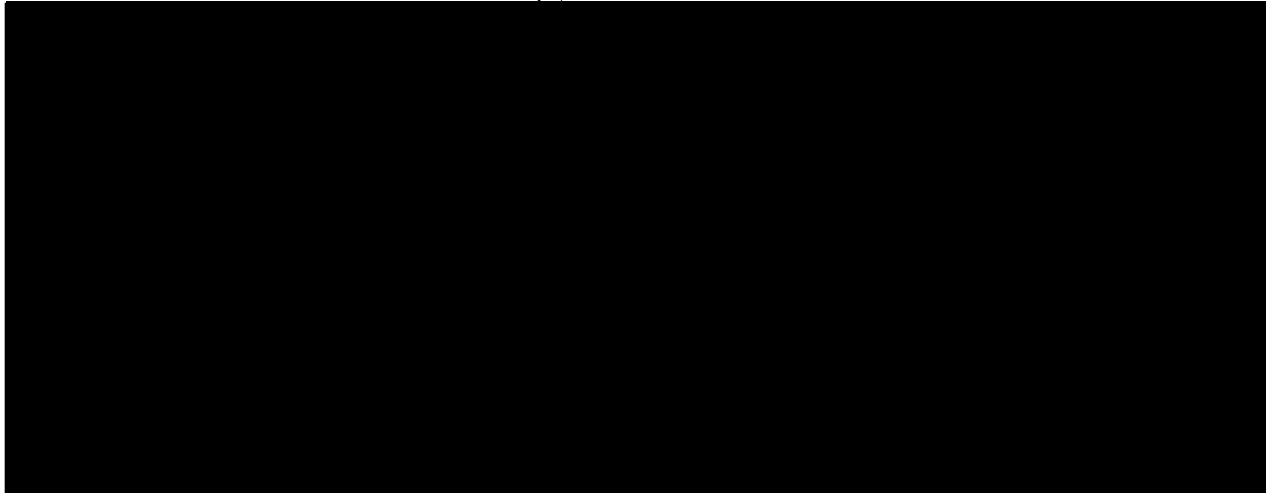
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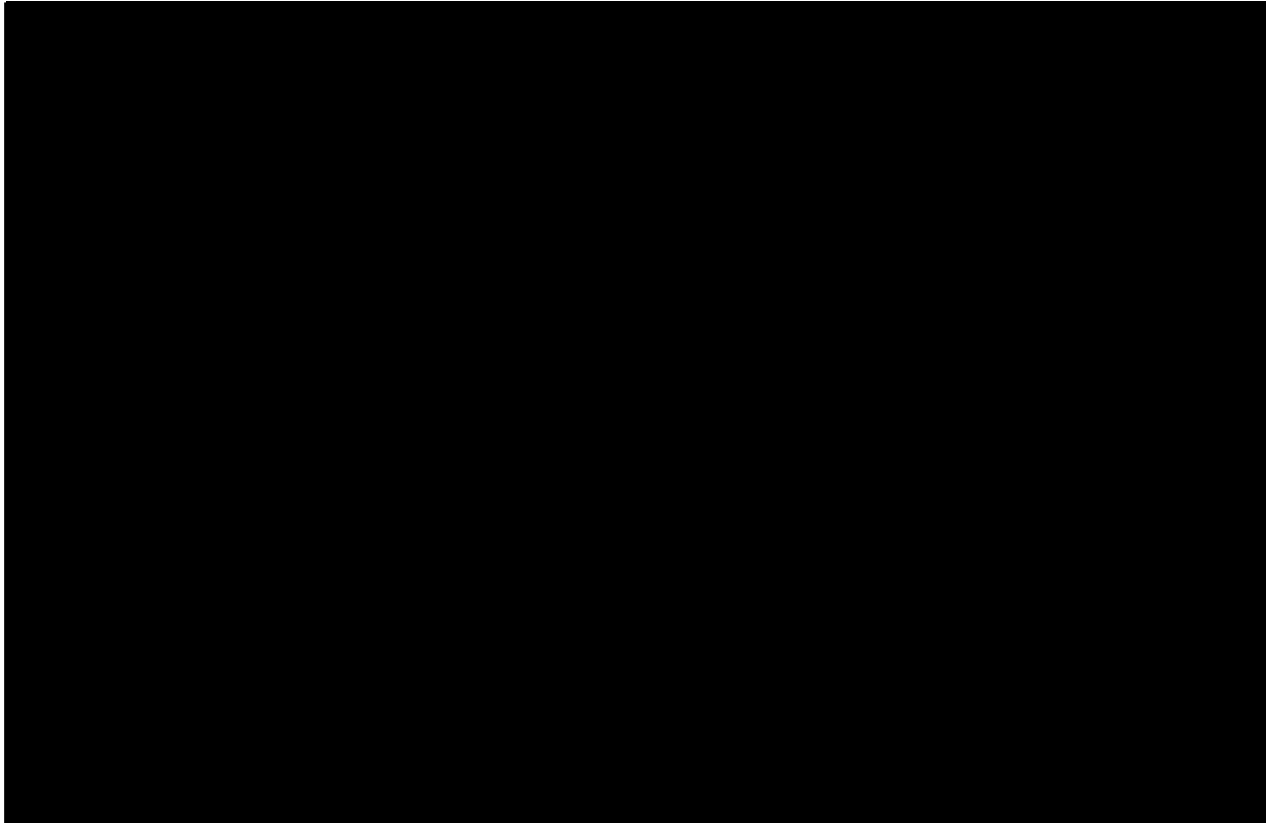


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**APPENDIX A-4
FOURTH GROUP OF IDENTIFIED COMPANY FACILITIES
AND POINT(S) OF INTERCONNECTION**



II. Estimated Incremental Cost (in 2018 dollars, ±50 percent) \$5,400,000



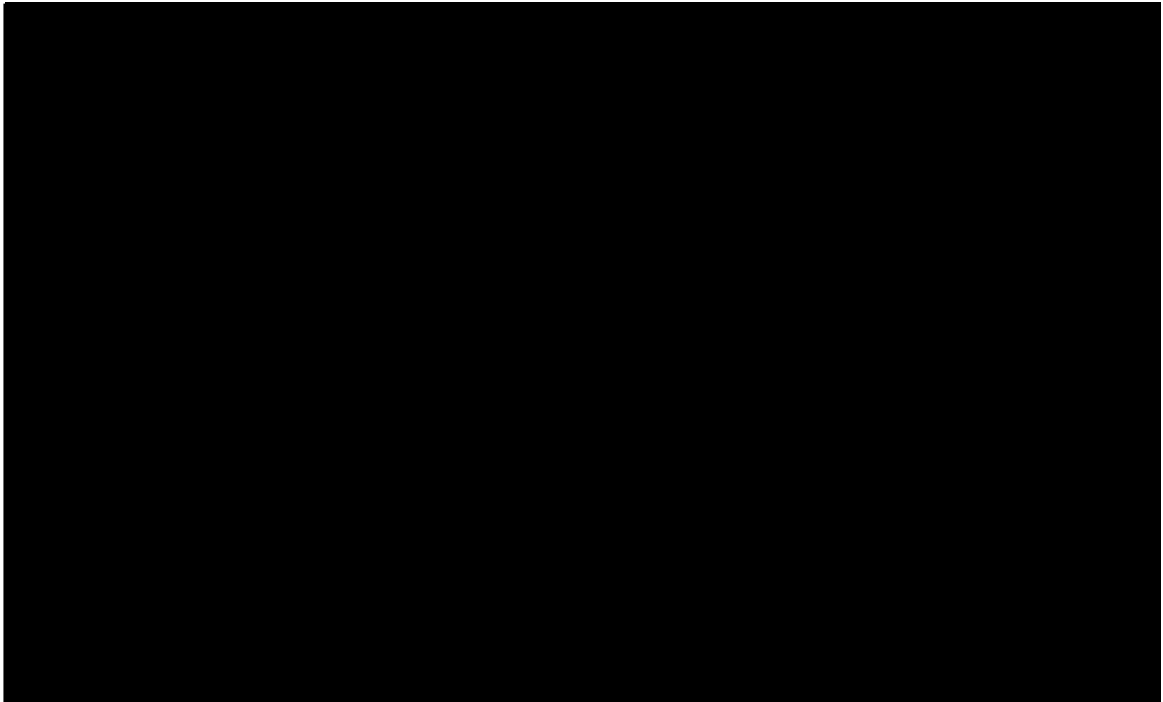
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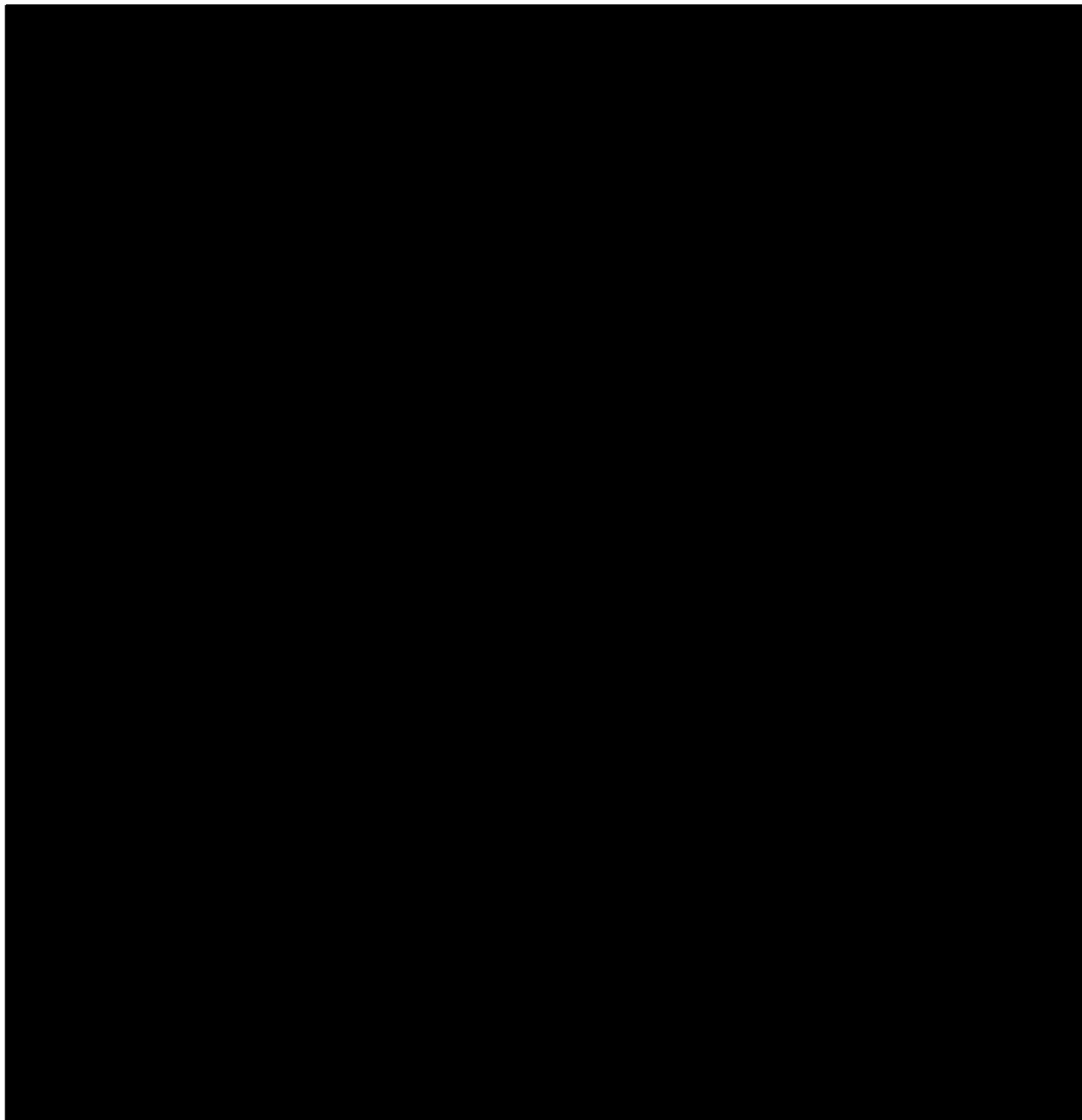
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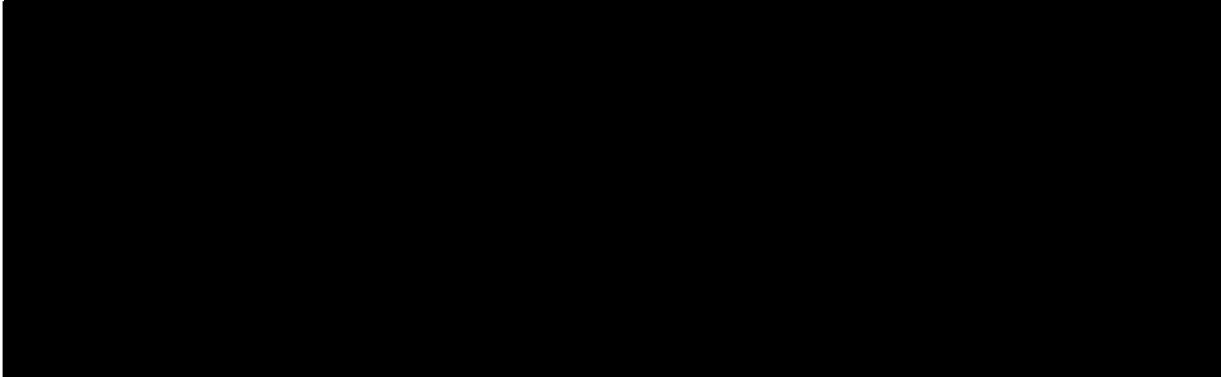
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**APPENDIX A-5
FIFTH GROUP OF IDENTIFIED COMPANY FACILITIES
AND POINT(S) OF INTERCONNECTION**



II. Estimated Incremental Cost (in 2018 dollars, ±50 percent)	\$1,680,000
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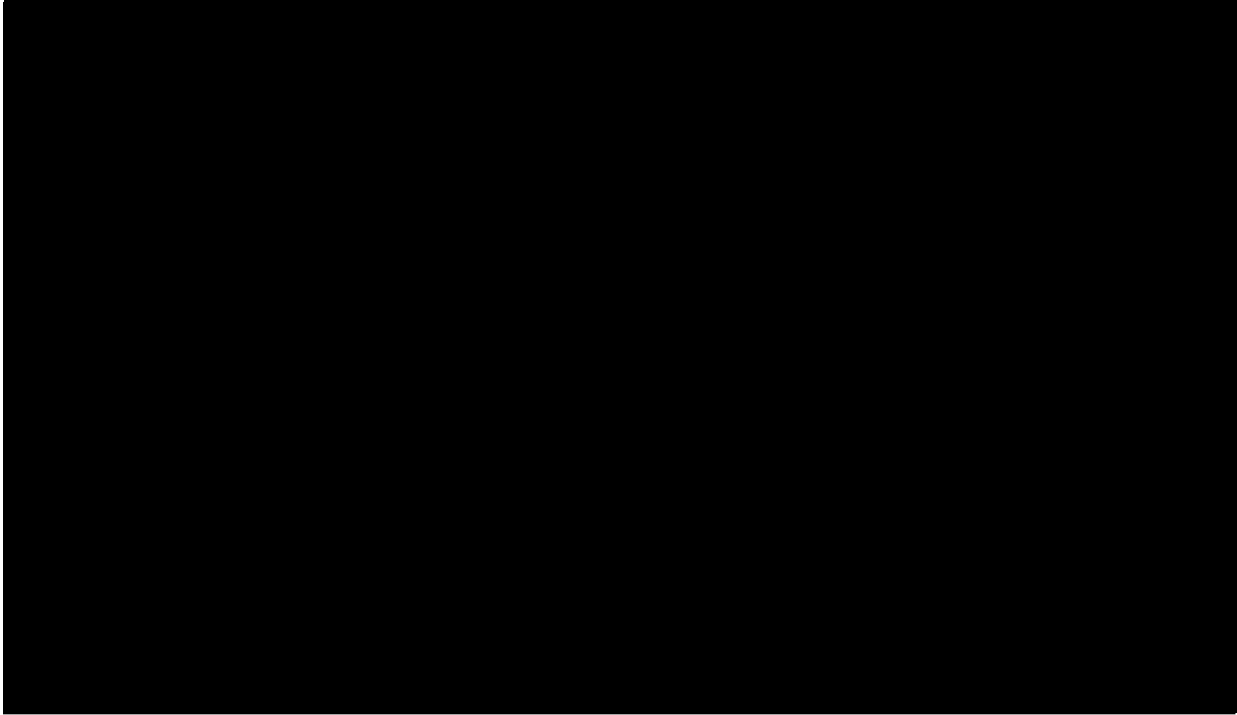
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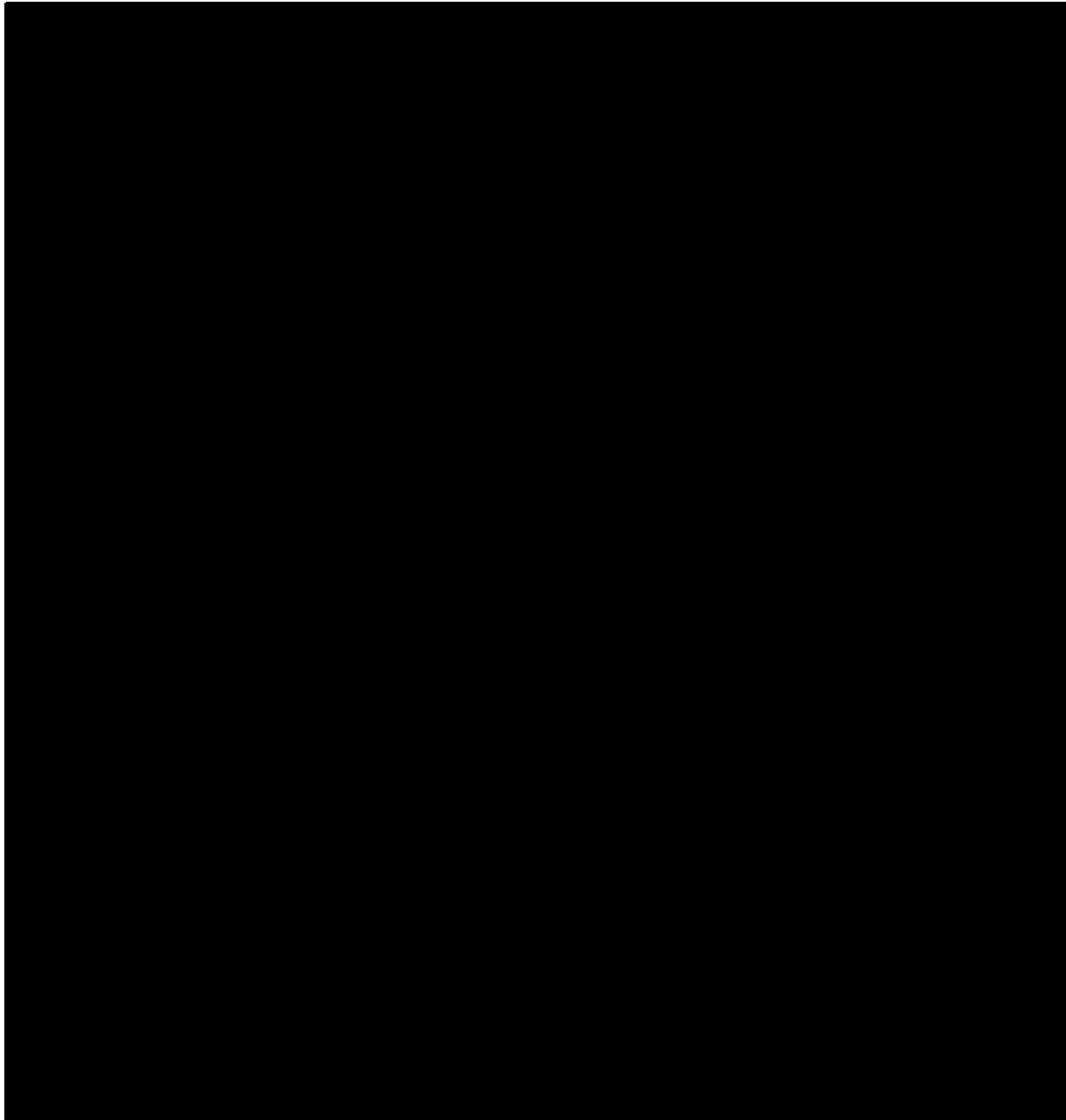
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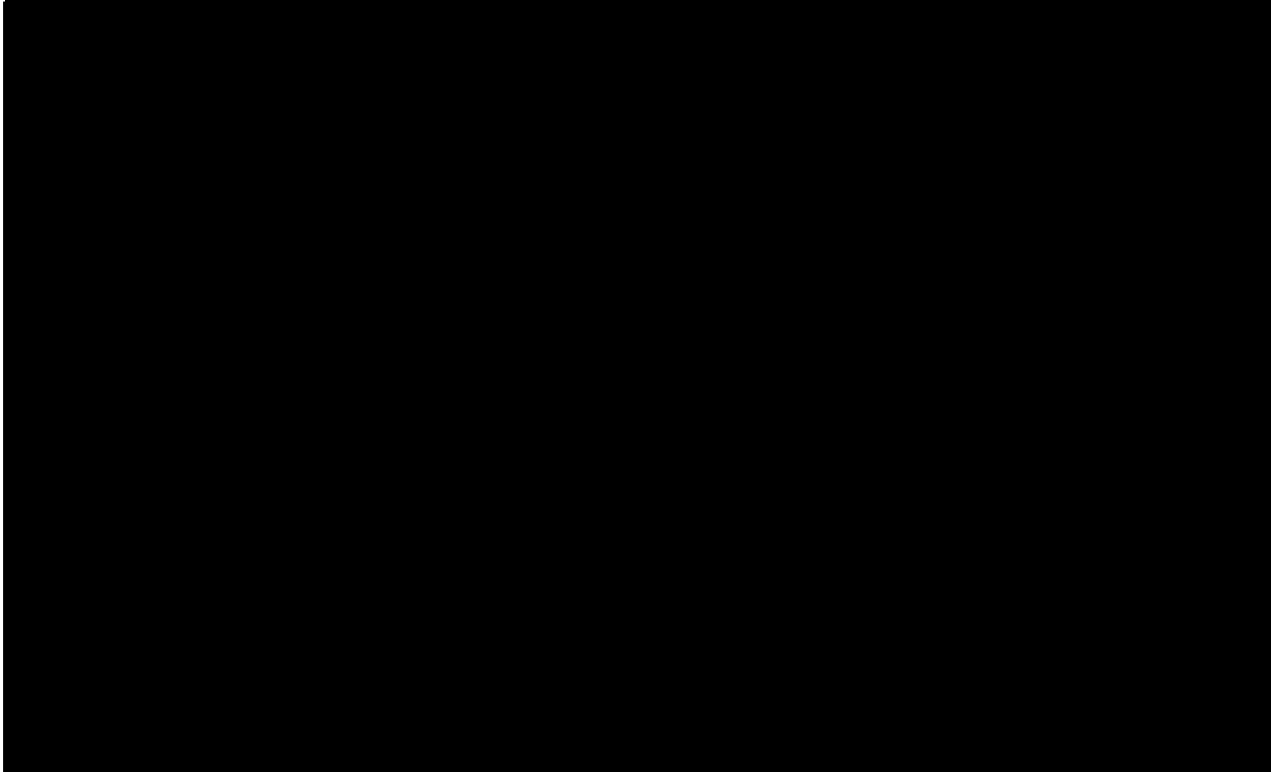
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**APPENDIX B
IDENTIFICATION OF CUSTOMER FACILITIES**



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**APPENDIX C
TEMPLATE FOR NOTICE TO CONSTRUCT**

The Parties understand that Company need not endeavor to design, engineer, procure, permit, construct, and/or relocate (as appropriate) any of the Company Facilities until Company receives a Notice to Construct from Customer. Should Customer elect to issue a Notice to Construct, Customer will use the following form or another that is substantially similar to it for purposes of documenting its Notice to Construct pursuant to this Interconnection Agreement:

Date of Notice to Construct: _____

Appendix(ces) Selected for Construction: _____

Requested In-Service Date of the Company Facilities identified (date will be not sooner than as provided for in the Interconnection Agreement for Retail Electric Service at Transmission Voltage):

Any Other Relevant Information Reasonably Deemed Appropriate to Provide:

Upon receipt of a Notice to Construct, Company will design, engineer, procure, permit, construct, and/or relocate (as applicable) the Company Facilities identified, and will make Commercially Reasonable Efforts to meet the requested in-service date. Customer acknowledges that if Company reasonably believes that such requested in-service date is not plausible, the Parties will negotiate in good faith to identify a plausible in-service date for the Company Facilities identified. Notwithstanding the foregoing, if Company determines that it is unable to meet the requested in-service date for any reason, Company will notify Customer and describe the reasons for any delay.

In Witness Whereof, the Parties have confirmed this Notice to Construct to become part of Retail Electric Service at Transmission Voltage Interconnection Agreement between the Parties dated _____, 20____, and to be duly executed as of this ____ day of _____, 20____.

[CUSTOMER NAME]

By: _____

Name: _____

Title: _____

Date: _____



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APPENDIX D
ADDRESSES FOR NOTICES

For Customer:	For Company:
<p>Honeycrisp Power LLC c/o Kutak Rock LLP Todd J. Guerrero 60 South Sixth Street Suite 3400 Minneapolis, MN 55402 Email: todd.guerrero@kutakrock.com Phone: 612-334-5000</p> <p>With copy to:</p> <p>Kutak Rock LLP Todd J. Guerrero 60 South Sixth Street Suite 3400 Minneapolis, MN 55402 Email: todd.guerrero@kutakrock.com Phone: 612-334-5000</p>	<p>Xcel Energy Inc. Northern States Power Company Managed Accounts 401 Nicollet Mall – 7th floor Minneapolis, MN 55401 Attn: Christopher Conrad</p> <p>With copy to:</p> <p>Xcel Energy Services Inc. Legal Department 401 Nicollet Mall – 8th Floor Minneapolis, MN 55401 Attn: General Counsel</p>
For Invoices:	
[N/A]	[N/A]
For Operational Matters:	
[N/A]	[N/A]



APPENDIX E
FORM OF GUARANTY

GUARANTY

THIS GUARANTY, dated as of last date this Guaranty is signed by either party as set forth below, is executed by the company identified below as the guarantor, a _____ corporation ("Guarantor") in favor of Northern States Power Company, a Minnesota corporation, d/b/a Xcel Energy, with its principal place of business at 401 Nicollet Mall, Minneapolis, Minnesota 55401 ("Creditor").

Whereas, Creditor is a public utility as defined under Minnesota law which proposes to provide electric service to one or more affiliates of Guarantor for a Data Center proposed to be constructed within Creditor's assigned service area (the "Data Center"), with a potential investment of more than _____ over the life of the project.

Whereas, in furtherance of the proposal to have Creditor provide electric service to the Data Center: (a) one or more affiliate(s) of Guarantor including [Honeycrisp Power LLC, a _____ corporation] and [_____, a _____ corporation] and other such affiliates as may enter into agreements with Creditor in connection with provision of electric service to the Data Center ("Obligor") has entered or seeks to enter into certain contracts, agreements, and arrangements with Creditor, including: (i) Retail Electric Services Agreement of even date herewith (the "Retail Electric Service Agreement", (ii) Competitive Response Rider Agreement of even date herewith (the "CRRR"), and (iii) Interconnection Agreement for Retail Electric Service at Transmission Voltage of even date herewith (the "Interconnection Agreement") (such agreements collectively referred to herein as the "Contract"); and (b) Guarantor is the parent corporation or an affiliate of Obligor, will receive substantial benefit from the Contract, and accordingly has agreed to guarantee Obligor's obligations under the Contract to induce Creditor to enter into the Contract.

For good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, and intending to be legally bound, Guarantor and Creditor hereby agree as follows:

1. Guaranty.

(a) Guarantor hereby absolutely, irrevocably, unconditionally and fully guarantees, and promises to perform, each Obligation (as defined below) of Obligor under the Contract on demand by Creditor, provided, however, that nothing herein shall require Guarantor to make any payment to Creditor in excess of that which Obligor was liable for under the Contract. For purposes of this Guaranty, "Obligation" shall include all payments, liabilities, and obligations owed by Obligor to Creditor for the payment of money now existing or hereafter arising pursuant to the terms of the Contract up to a maximum of _____

_____. This is a guaranty of payment, not of collection, and as such, Creditor shall not be required to institute, pursue, or exhaust any remedies against Obligor before instituting suit, obtaining judgment, and executing thereon against Guarantor under this Guaranty. This Guaranty

shall survive termination of any part of the Contract to the extent necessary to enforce and complete the rights, duties, and obligations of Creditor and Obligor thereunder. Except as otherwise provided in Section 1(g) hereof, in no event shall Guarantor's liability under this Guaranty for defaulted Obligations at any time exceed _____.

(b) Guarantor's obligations under this Guaranty are continuing obligations and are not satisfied or discharged in full by an intermediate payment or settlement of account by Obligor. This Guaranty constitutes an independent guaranty of payment, and is not conditioned on or contingent upon any attempt to enforce in whole or in part any Obligations of Obligor to Creditor or the existence or continuance of Obligor as a legal entity, nor will this Guaranty be released, impaired, or affected by the consolidation or merger of Obligor with or into any other entity, the sale, lease, or disposition by Obligor of all or substantially all of its assets to any other entity, or the bankruptcy or insolvency of Obligor, the admission by Obligor of its inability to perform any obligation, or the making by Obligor of a general assignment for the benefit of creditors.

(c) Guarantor's obligations hereunder are primary obligations and not those of mere sureties. The obligations of Guarantor may be enforced by Creditor against Guarantor without first having recourse to any of its rights against Obligor or any other person and whether or not Creditor shall have proceeded against any other obligor principally or secondarily obligated with respect to any of the Obligations. If any Obligation is not performed according to its terms, Guarantor shall immediately upon receipt of written demand by Creditor (i) perform or cause Obligor to perform the Obligation, and (ii) pay, reimburse, and indemnify Creditor against any liabilities, damages, and related costs (including attorneys' fees) incurred by Creditor as a result thereof, all in such manner and at such times as Creditor may direct.

(d) Guarantor may replace this Guaranty, and terminate its obligations hereunder, at any time upon at least ten (10) days written notice to Creditor but only if

(i) Obligor replaces this Guaranty at the time of notice with either a bank guaranty or standby letter of credit, in either case issued by a United States chartered bank with assets totaling a minimum of _____ and a minimum credit rating from _____ of the following three (3) rating agencies: of at least _____ by S&P _____ by Moody's, or _____ by Fitch; and not on credit watch or negative outlook by any rating agency (a "Qualified Bank") in the amount set forth in Section 1(a) hereof and in form acceptable to Creditor in its reasonable discretion, or

(ii) Obligor replaces this Guaranty at the time of notice with one by Alphabet Inc. in substantially the same form as this Guaranty, provided, however, that at the time Alphabet Inc. maintains a corporate credit rating from _____ of the following three rating agencies: of at least _____ by S&P, _____ by Moody's, or _____



by Fitch and not on credit watch or negative outlook by any rating agency (either (i) or (ii) referred to herein as a "**Replacement Guarantor**").

In the event that a Replacement Guarantor ceases to maintain the specified asset level and/or credit rating, Guarantor shall cause a Qualified Bank to issue a bank guaranty or standby letter of credit in the amount set forth in Section 1(a) hereof and in form acceptable to Creditor in its reasonable discretion.

(e) Satisfaction by Guarantor of any duty hereunder incident to a particular default or liability under the Contract or the occurrence of any other default shall not discharge Guarantor except with respect to the default satisfied, it being the intent of Guarantor that this Guaranty be continuing until such time as all of the Obligations have irrevocably been discharged and indefeasibly paid in full, at which time this Guaranty shall automatically terminate. If at any time the performance of any Obligation by Obligor or Guarantor is rescinded or voided under the federal Bankruptcy Code or otherwise, then Guarantor's duties hereunder shall continue and be deemed to have been automatically reinstated, restored, and continued with respect to that Obligation, as though the performance of that Obligation had never occurred, regardless of whether this Guaranty otherwise had terminated or would have been terminated following or as a result of that performance. This Guaranty shall terminate on the date Obligor has fully paid its Obligations under the Contract.

(f) The rights and remedies of Creditor hereunder shall be cumulative and not alternative to any other rights, powers, and remedies that Creditor may have at law, in equity, or under the Contract. The obligations of Guarantor hereunder are independent of those of Obligor and shall survive unaffected by the bankruptcy of Obligor. Creditor need not join Obligor in any action against Guarantor to preserve its rights set forth herein.

(g) Guarantor shall pay to Creditor, upon demand, and in addition to the maximum liability set forth in Section 1(a) hereof, all reasonable attorneys' fees and other expenses that Creditor may expend or incur in enforcing this Guaranty against Guarantor, whether or not suit is filed.

(h) Guarantor hereby waives and agrees not to assert or take advantage of:

(i) any right to require Creditor to proceed against Obligor or any other person, or to require Creditor first to exhaust any remedies against Obligor or any other person, before proceeding against Guarantor hereunder;

(ii) any defense based upon an election of remedies by Creditor;

(iii) any benefit of any laws limiting the liability of a surety;

(iv) any duty of Creditor to disclose to Guarantor any facts concerning Obligor, the Contract, or any other circumstances, that would, or allegedly would, increase the risk to Guarantor under this Guaranty, whether now known or hereafter learned by Creditor, it being understood that Guarantor is capable of and assumes the responsibility for being and remaining informed as to all such facts and circumstances;

(v) until all Obligations in Default have been indefeasibly paid in full, any rights of subrogation, contribution,

reimbursement, indemnification, or other rights of payment or recovery for any payment by it hereunder. For the avoidance of doubt, if any amount is paid to Guarantor in violation of this provision, such amount shall be held by Guarantor for the benefit of, and promptly paid to, Creditor;

(vi) any claim that Creditor has waived any right to enforce the Guaranty, or any claim that Guarantor be released from Guarantor's duties hereunder, except by a writing duly executed by Creditor expressly for such purpose; and

(vii) any set-offs, counterclaims, presentments, demands for performance, notices of non-performance, protests and notices of every kind that may be required by applicable law.

(i) This Guaranty is a continuing guaranty by the Guarantor of the Obligations. The Guarantor hereby consents and agrees that the following actions may be undertaken from time to time without notice to Guarantor:

(i) Creditor and Obligor may compromise or settle any unpaid or unperformed Obligation or any other obligation or amount due or owing, or claimed to be due or owing, under the Contract; and

(ii) Creditor may take or fail to take any action of any kind in respect of any security for the Obligations, or impair, exhaust, exchange, enforce, waive, or release any such security; and

(iii) Creditor may exercise or refrain from exercising any rights against Obligor or others in respect of the Obligations.

2. Representations and Warranties. Guarantor represents and warrants to Creditor that: (a) the execution, delivery, and performance of this Guaranty by the Guarantor is within the corporate powers of the Guarantor, has been duly authorized by all necessary corporate action, and does not and will not: (i) require any consent or approval of the stockholders of the Guarantor which has not been obtained, (ii) violate any provision of (a) the articles of incorporation or by-laws of the Guarantor or (b) any law, rule, regulation, order, writ, judgment, injunction, decree, determination, or award presently in effect having applicability to the Guarantor, except where the failure to comply, individually or in the aggregate, could not reasonably be expected to result in a material adverse effect; (iii) require the consent or approval of, or filing or registration with, any governmental body, agency or authority, or (iv) result in a breach of or constitute a default under, or result in the imposition of any lien, charge, or encumbrance upon any property of the Guarantor; and (b) this Guaranty constitutes the legal, valid, and binding obligation of the Guarantor enforceable in accordance with its terms, except as such enforceability may be limited by bankruptcy or similar laws affecting the enforceability of creditors' rights generally; and (c) Guarantor is a corporation duly organized, validly existing, authorized to do business and in good standing under the laws of the state of its incorporation; and (d) Obligor is a direct or indirect subsidiary of Guarantor, and Guarantor shall benefit from execution of the Agreement.

3. Miscellaneous.

(a) All notices or other communications to Creditor or Guarantor under this Guaranty shall be in writing and delivered by courier, signature on receipt required, or via mail with a copy via confirmed facsimile, to the addresses stated in this Guaranty (or



such other address as is provided for notice purposes in writing) and shall be effective upon delivery.

(b) This Guaranty may not be amended or modified, nor may any provision be waived, except by written instruments signed by Guarantor and Creditor expressly for such purpose.

(c) This Guaranty shall be binding upon and inure to the benefit of Creditor and Guarantor and their respective successors and permitted assigns, provided, however, that neither Guarantor nor Creditor shall assign its rights and obligations hereunder without the prior written consent of the other party, and any assignment without the prior written consent of the other party shall be null and void.

(d) If at any time any provision of this Guaranty is deemed to be illegal, invalid, or unenforceable, the legality, validity, or enforceability of the remaining provisions of this Guaranty shall not in any way be affected or impaired thereby.

(e) This Guaranty shall be governed by and construed in accordance with the laws of the State of [REDACTED] without reference to conflicts of law rules.

(f) Any action or proceeding arising out of this Guaranty shall be brought and enforced in the courts of [REDACTED] and the Guarantor and Creditor each hereby irrevocably submits to the jurisdiction of such courts and waives any objection based on *forum non conveniens* or to venue of any action instituted hereunder.

(g) Each party hereby irrevocably waives any and all rights to a trial by jury with respect to any legal proceeding arising out of or related to this Guaranty or any Obligations arising under the Contract.

(h) This Guaranty will terminate on the earliest to occur of the following: (i) Obligor or Guarantor has irrevocably and indefeasibly made all payments to Creditor that comprise the Obligation, and (ii) Guarantor has been expressly released from this Guaranty in writing by Creditor. Upon the first to occur of such events, Creditor agrees to confirm the termination of this Guaranty in writing.



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IN WITNESS WHEREOF, the parties have caused this Guaranty to be executed as of the date stated below.

GUARANTOR: Google Inc.

By: _____
Name: Karin Kimbrough
Title: Assistant Treasurer
Date: / /

Address: 1600 Amphitheatre Parkway, Mountain View, CA 94043
Telephone: _____

OBLIGOR: [Honeycrisp Power LLC]

Address: _____

CREDITOR: NORTHERN STATES POWER COMPAN
A MINNESOTA CORPORATION

By: _____
Name: _____
Title: _____
Date: / /

Address: _____
Telephone: _____
Facsimile: _____

