414 Nicollet Mall
Minneapolis, Minnesota 55401

September 10, 2019

PUBLIC DOCUMENT
NOT PUBLIC DATA HAS BEEN EXCISED

Mr. Daniel P. Wolf
Executive Secretary
Minnesota Public Utilities Commission
121 7th Place East, Suite 350
St. Paul, MN 55101-1247

RE: REVISED FILING
2019 COGENERATION AND SMALL POWER PRODUCTION
DOCKET NO. E999/PR-19-9

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this revised filing of our 2019 cogeneration and small power production report in response to the Commission's August 30, 2019 NOTICE OF SUPPLEMENTAL COMMENT PERIOD.

The Company has reviewed its January 2, 2019 report and identified data that was originally designated as trade secret that we have determined can be provided publicly. The data we identified can be accessed in other regulatory filings publicly or can be derived using publicly available information. We appreciate this opportunity to revise the trade secret designations in this report.

We provide as Attachment A the pages where we have updated the trade secret designation in Schedules A and G of the report. Page 1 of Attachment A provides Code Keys (A through E) that provide the reasons for changing the designations of specific cells. These Code Keys are then reflected on the remaining pages of Attachment A in or near specific cells whose designation has been changed. Attachment B contains the revised Schedules A through H in their entirety and reflects the changes in designation provided in Attachment A. Attachment C is an informational copy of the tariff sheets effective April 1, 2019 that had been proposed in the January 2, 2019 report.

Certain information provided in Attachments A and B of this filing meets the definition of trade secret information pursuant to Minn. Stat. § 13.37. In particular, release of this information would undermine the Company's resource bidding process by providing potential suppliers with a compilation of competitive information that

derives independent economic value from not being generally known or ascertainable. This information includes data regarding costs of energy from possible new generating facilities that is not otherwise public. Disclosure of this information could result in higher costs of energy for Xcel Energy customers by allowing potential suppliers to modify their pricing from what they would otherwise bid. Further, as explained in the February 22 and March 18 filings of Xcel Energy in this matter, the Company and its third-party vendors have taken steps to protect the confidentiality of the designated protected information. This includes cost and related information on specific operating plants, and some of these plants are owned by third parties. Also, the forward looking data in Schedule A is obtained through a subscription service from a third-party and is protected and cannot be publicly released. Therefore, the Company has designated certain portions of this filing as trade secret.

Please contact me at lisa.r.peterson@xcelenergy.com or 612-330-7681 or Jennifer Roesler at jennifer.roesler@xcelenergy.com or 612-330-1925 if you have any questions regarding this matter.

Sincerely,

/s/

LISA PETERSON
MANAGER, REGULATORY ANALYSIS

Enclosures

Rationale for change in Trade Secret Designation

Code	Rationale
(A)	Publicly available data (Tariffed Rate).
(B)	Can be calculated or approximated using publicly available data.
(C)	This type of data is publicly available in other dockets.
(D)	Weighted After-tax Cost of Capital from Rate Case (Docket No. E002/GR-15-826).
(E)	Actual unit cost, proprietary due to competition risk.

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Minnesota Public Utilities Commission
DOCKET NO. E999/PR-19-9 **Reporting Period:** January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff **Utility:** Xcel Energy

Minn. Rules 7835.0500 Schedule A: Estimated Energy Costs

Schedule A must contain the estimated system average incremental energy costs by seasonal peak and off-peak periods for each of the next five years. For each seasonal period, system incremental energy costs must be averaged during system daily peak hours, system daily off-peak hours, and all hours in the season. The energy costs must be increased by a factor equal to 50 percent of the line losses shown in schedule B. Schedule A must describe in detail the method used to determine the on-peak and off-peak hours and seasonal periods and must show the resulting on-peak and off-peak and seasonal hours selected.

Please include all computation descriptions in Schedule G

Estimated Marginal Energy Costs ($/MWh)

		2019	2020	2021	2022	2023
		[PROTECTED DATA BEGINS				
Summer	**On Peak**	**31.94 (A)**				
	Off Peak	**18.47 (A)**				
	All Hours	**23.09 (A)**				
Winter	**On Peak**	**29.41 (A)**				
	Off Peak	**21.17 (A)**				
	All Hours	**24.05 (A)**				
Annual	**On Peak**	**30.26 (B)**				
	Off Peak	**20.27 (B)**				
	All Hours	**23.71 (B)**				
						PROTECTED DATA ENDS]
Annual # hours on-peak:		3045				

Description of season and on-peak and off-peak periods

Summer:	June - September
Winter:	October - May
On-peak period:	The on peak period contains all 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.
Off-peak period:	The off peak period contains all other hours not included in the on peak period. Definition of on peak and off peak period is subject to change with change in Company's system operating characteristics.

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Minnesota Public Utilities Commission
DOCKET NO. E999/PR-19-9 **Reporting Period:** January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff **Utility:** Xcel Energy

Minn. Rules 7835.1000 Schedule G: Computations and Descriptions

Schedule G must contain and describe all computations made by the utility in determining Schedules A and B. Please use the space below to show your calculations. Refer to Minn. Rules 7835.0500-7835.0600 for detailed computation descriptions, especially for Schedule B Subp. 5 and 6.

NUMBER OF PEAK HOURS

The on peak period

contains all other

	On-Peak	Off-Peak
Winter	2,023	3,809
Summer	1,022	1,906
Total	3,045	5,715

On-Peak Days/Week	5	Days
On-Peak Hour Block	12	Hours

	Day in Month	On Peak Hours	Off Peak Hours
June	30	257	463
July	31	266	478
4th of July		-12	12
August	31	266	478
September	30	257	463
Labor Day		-12	12
October	31	266	478
November	30	257	463
Thanksgiving		-12	12
December	31	266	478
Christmas		-12	12
January	31	266	478
New Year's Day		-12	12
February	28	240	432
March	31	266	478
Easter		-12	12
April	30	257	463
May	31	266	478
Memorial Day		-12	12
		3,045	5,715

MARGINAL ENERGY COST CALCULATION

Marginal Energy Costs ($/MWh)		2019	2020	2021	2022	2023
			[PROTECTED DATA BEGINS			
Summer	On Peak	30.73 (B)				
	Off Peak	17.89 (B)				
	All Hours	22.31 (B)				
Winter	On Peak	28.36 (B)				
	Off Peak	20.52 (B)				
	All Hours	23.28 (B)				
Annual	On Peak	29.14 (B)				
	Off Peak	19.63 (B)				
	All Hours	22.96 (B)				

PROTECTED DATA ENDS]

Loss Factors	Summer On-Peak	Summer Off-Peak	Average Summer	Winter On-Peak	Winter Off-Peak	Average Winter
Overall	0.9240	0.9374	0.9327	0.9288	0.9388	0.9359
50% of Overall	0.9620	0.9687	0.9664	0.9644	0.9694	0.9680

Adj. Marginal Energy Costs ($/MWh)		2019	2020	2021	2022	2023
			[PROTECTED DATA BEGINS			
Summer	On Peak	31.94 (A)				
	Off Peak	18.47 (A)				
	All Hours	23.09 (A)				
Winter	On Peak	29.41 (A)				
	Off Peak	21.16 (A)				
	All Hours	24.05 (A)				
Annual	On Peak	30.26 (B)				
	Off Peak	20.27 (B)				
	All Hours	23.71 (B)				

PROTECTED DATA ENDS]

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CAPACITY COST CALCULATION	[PROTECTED DATA BEGINS where shaded		Coded reason for change in designation
(a) (1) Completed Cost of C.T. Unit (2019 $)		/kW	
(b) (2) Inflation Net of Technical Progress	2.77%		(C)
(c) (3) Average Service Life	40	Years	(C)
(d) (4) Discount Rate (After Tax)	6.44%		(D)
Calculation of Marginal Capital Carry Charge Rate			
(e) (5) Present Value of Revenue Requirements		/kW	
(6) Annuity Factor Adjustment for Inflation **	0.04866		(B)
(7) Present Value of Revenue Requirements			
Adjusted for Inflation (5)*(6)			
(8) Marginal Capital Carrying Charge Rate			
(7)/(1)			
(9) First Year Revenue Requirement (1)*(8)		/kW (2019 $)	
(f) (10) Present Value at 6.44% for 0 years		/kW	
(g) (11) Present Value of Average Annual Fuel Savings		/kW	
(12) Annual Avoided Capacity Cost		/kW	
(10)-(11)			
(h) (13) Adjusted for 15% Reserve Margin		/kW	
(i) (12)*1.15			
(14) Plus $XX.XX/kW Fixed O & M (2019 $)		/kW	(E)
(j) (13)+$xx.xx/kW			
(k) (15) Adjusted for losses (14)/0.9674		/kW	(E)
(16) NET ANNUAL AVOIDED CAPACITY COST	$52.02	/kW	(B)
(17) Net Winter On-Peak Avoided Capacity Cost (TOD PURCHASE)			
(16)*0.2340*100/2023	0.00602	$/kWh	(A)
(18) Net Summer On-Peak Avoided Capacity Cost (TOD PURCHASE)			
(16)*0.7660*100/1022	0.03900	$/kWh	(A)
(19) Net Annual On-Peak Avoided Capacity Cost			
(16)*100/3045	0.01709	$/kWh	(B)
(20) Net Winter Avoided Capacity Cost			
Averaged Over All Winter Hours (PURCHASE & SALE BILLING)	0.00209	$/kWh	(A)
(16)*0.2340*100/5832			
(21) Net Summer Avoided Capacity Cost			
Averaged Over All Summer Hours (PURCHASE & SALE BILLING)	0.01361	$/kWh	(A)
(16)*0.7660*100/2928			
(22) Net Annual Avoided Capacity Cost			
Average Over All Hours	0.00594	$/kWh	(B)
(16)*100/8760			

Note: The

** AC = k*(r-j)*(1+j)^(t-1)*[1/(1-(1+j)^n/(1+r)^n)]
Where AC = Annual Charge in year t
t = Year (=1)
K = Total Present Value Cost of Original Investment
r = Discount Rate (Overall Marginal Cost of Capital) (6.44%)
j = Inflation Rate Net of Technology Progress (2.77%)
n = Expected Service Life of Investment (40 Years)

(l) Summer Percent:	76.60%	
(m) Winter Percent:	23.40%	
Total:	100.00%	
(n) O & M		(E)

PROTECTED DATA ENDS]

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Minnesota Public Utilities Commission
DOCKET NO. E999/PR-19-9 **Reporting Period:** January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff **Utility:** Xcel Energy

Minn. Rules 7835.0500 Schedule A: Estimated Energy Costs

Schedule A must contain the estimated system average incremental energy costs by seasonal peak and off-peak periods for each of the next five years. For each seasonal period, system incremental energy costs must be averaged during system daily peak hours, system daily off-peak hours, and all hours in the season. The energy costs must be increased by a factor equal to 50 percent of the line losses shown in schedule B. Schedule A must describe in detail the method used to determine the on-peak and off-peak hours and seasonal periods and must show the resulting on-peak and off-peak and seasonal hours selected.

Please include all computation descriptions in Schedule G

Estimated Marginal Energy Costs ($/MWh)

		2019	2020	2021	2022	2023
			[PROTECTED DATA BEGINS			
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	Off Peak	**18.47**				
	All Hours	**23.09**				
Winter	**On Peak**	**29.41**				
	Off Peak	**21.17**				
	All Hours	**24.05**				
Annual	**On Peak**	**30.26**				
	Off Peak	**20.27**				
	All Hours	**23.71**				
						PROTECTED DATA ENDS]
Annual # hours on-peak:		3045				

Description of season and on-peak and off-peak periods

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Minnesota Public Utilities Commission
DOCKET NO. E999/PR-19-9 — **Reporting Year:** January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff — **Utility:** Xcel Energy

Minn. Rules 7835.0600 Schedule B: Estimated Capacity Costs

Subp. 7. Avoidable capacity costs
If the utility has neither planned generating

Planned facility additions or capacity purchases

Fill out Schedule B

Subp. 2. Description of all planned utility generating facility additions anticipated during the next ten years, including:

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
A. Name of Unit	Black Dog 6 CT	Mankato Energy Center	2016 Wind RFP BOT	2016 Wind Self-Build	TBD CT	TBD CC
B. Nameplate Rating	215 MW (design)	762 (design)	Various	Various	215 MW (design)	835 (planning)
C. Fuel Type	Natural Gas	Natural Gas	Wind	Wind	Natural Gas	Natural Gas
D. In-Service Date	6/1/2019 (MISO PY 19/20 Capacity Credit)	6/1/2019 (MISO PY 19/20 Capacity Credit)	2019-2021	2019-2020	2025 (MISO PY 25/26)	2027 (MISO PY 27/28)
	[PROTECTED DATA BEGINS					
E. Completed Cost in $/kW in the year in which the plant is expected to be put in service, including allowance for funds used during construction						
F. Anticipated average annual fixed operating and maintenance costs in $/kW						
G. Energy costs associated with the unit, including fuel costs and variable operating and maintenance costs ($/MWh)						
H. Projected average number of kWh/year the plant will generate during its useful life						
						PROTECTED DATA ENDS]
I. Average annual fuel savings resulting from the addition of this generating facility, stated in $/kW	NA	NA	NA	NA	NA	NA

Subp. 3. Description of all planned firm capacity purchases, other than from qualifying facilities, during the next ten years, including:

	Purchase 1	Purchase 2	Purchase 3	Purchase 4	Purchase 5	Purchase 6
A. Year of Purchase						
B. Name of the seller						
C. Number of kW of capacity to be purchased						
D. Capacity cost in $/kW						
E. Associated energy costs in cents/kWh						

	Purchase 7	Purchase 8	Purchase 9	Purchase 10	Purchase 11	Purchase 12
A. Year of Purchase						
B. Name of the seller						
C. Number of kW of capacity to be purchased						
D. Capacity cost in $/kW						
E. Associated energy costs in cents/kWh						

	Purchase 13	Purchase 14	Purchase 15	Purchase 16	Purchase 17	Purchase 18
A. Year of Purchase						
B. Name of the seller						
C. Number of kW of capacity to be purchased						
D. Capacity cost in $/kW						
E. Associated energy costs in cents/kWh						

Subp. 4. Utility's overall average percentage of line losses due to distribution, transmission, and transformation of electric energy

Average Annual line loss	0.9348	

	Summer On-Peak	Summer Off-Peak	Average Summer	Winter On-Peak	Winter Off-Peak	Average Winter
Loss Factors	0.9240	0.9374	0.9327	0.9288	0.9388	0.9359

Subp. 5 Net annual avoided capacity cost - Please show calculations in Schedule G

Averaged on Peak hours ($/kWh)	0.01709	The utility's net annual avoided capacity cost stated in dollars per kilowatt-hour averaged over the on-peak hours and the utility's net annual
Average Over All Hours ($/kWh)	0.00594	avoided capacity cost stated in dollars per kilowatt-hour averaged over all hours.

Subp. 6 Net annual avoided capacity cost - Please show calculations in Schedule G

Averaged on Peak hours		If the utility has no planned generating facility additions for the ensuing ten years, but has planned additional capacity purchases, other than
Average Over All Hours		from qualifying facilities, during the ensuing ten years, schedule B must contain its net annual avoided capacity cost stated in dollars per

Minnesota Public Utilities Commission

DOCKET NO. E999/PR-19-9 **Reporting Period:** January 1 - December 31, 2019

Cogeneration and Small Power Production Tariff **Utility:** Xcel Energy

Minn. Rules 7835.0650 Schedule C: Calculation, Average Retail Energy Rate

7835.0100 DEFINITIONS. Subp. 2a. Average retail utility energy rate. "Average retail utility energy rate" means, for any class of utility customer, the quotient of the total annual class revenue from sales of electricity minus the annual revenue resulting from fixed charges, divided by the annual class kilowatt-hour sales. Data from the most recent 12-month period available before each filing required by parts 7835.0300 to 7835.1200 must be used in the computation.

Rate Class	Total Class Revenue	Fixed Charges	kWh Sales	Average Retail Energy Rate
Annual (January - December)				
Residential	$1,251,519,802	$120,289,277	8,877,323,755	$0.12743
Small General (Non-Demand)	$102,682,453	$9,042,917	789,101,244	$0.11867
Non-Demand Metered	$1,354,202,255	$129,332,194	9,666,424,999	$0.12671
General (Sec Volt - Demand)	$563,542,464	$12,866,158	8,030,346,752	$0.06857
Summer (June - September)				
Residential	$497,463,120	$40,121,668	3,446,520,801	$0.13270
Small General (Non-Demand)	$36,479,458	$3,002,931	265,627,498	$0.12603
Non-Demand Metered	$533,942,578	$43,124,599	3,712,148,299	$0.13222
General (Sec Volt - Demand)	$205,290,478	$4,276,487	2,897,070,599	$0.06939
Winter (October - May)				
Residential	$754,056,683	$80,167,609	5,430,802,954	$0.12409
Small General (Non-Demand)	$66,202,995	$6,039,986	523,473,746	$0.11493
Non-Demand Metered	$820,259,677	$86,207,595	5,954,276,700	$0.12328
General (Sec Volt - Demand)	$358,251,986	$8,589,671	5,133,276,153	$0.06812

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

STANDARD CONTRACT AND AGREEMENT FORMS

Section No. 9
1st Revised Sheet No. 9

Listed below are the titles of standard contract or service agreement forms Company requires of customers for cogeneration and small power production purchase services. Copies of the forms are shown on the following sheets in the order listed.

1. Uniform Statewide Contract for Cogeneration and Small Power Production Facilities T

The form for the Uniform Statewide Contract must be applied to all new and existing interconnections between the Company and cogeneration and small power production facilities having less than 1,000 kilowatts AC of capacity except that any existing interconnection contract executed between the Company and a QF with capacity of less than 40 kilowatts AC remains in force until terminated by mutual agreement of the parties or as otherwise specified in the contract. N N N N N

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

UNIFORM STATEWIDE CONTRACT FOR COGENERATION AND SMALL POWER PRODUCTION FACILITIES

Section No. 9
2nd Revised Sheet No. 10

UNIFORM STATEWIDE CONTRACT FOR COGENERATION AND SMALL POWER PRODUCTION FACILITIES

THIS CONTRACT is entered into _____ , _____ , by Northern States Power Company, a Minnesota corporation and wholly owned subsidiary of Xcel Energy Inc., (hereafter called "Utility") and _____ (hereafter called "QF").

RECITALS

The QF has installed electric generating facilities, consisting of _____ (Description of facilities), rated at ____ kilowatts of electricity, on property located at _____ _____ . C

The QF is prepared to generate electricity in parallel with the Utility.

The QF's electric generating facilities meet the requirements of the Minnesota Public Utilities Commission (hereafter called “Commission”) rules on Cogeneration and Small Power Production and any technical standards for interconnection the Utility has established that are authorized by those rules.

The Utility is obligated under federal and Minnesota law to interconnect with the QF and to purchase electricity offered for sale by the QF.

A contract between the QF and the Utility is required by the Commission's rules.

AGREEMENTS

The QF and the Utility agree:

1. The Utility will sell electricity to the QF under the rate schedule in force for the class of customer to which the QF belongs. T

2. The Cooperative Electric Association or Municipally Owned Electric Utility will buy electricity from the QF under the current rate schedule filed with the Commission. The QF elects the rate schedule category hereinafter indicated: C

    ____ a. Average retail utility energy rate under part 7835.3300.

    ____ b. Simultaneous purchase and sale billing rate under part 7835.3400.

    ____ c. Time-of-day purchase rates under part 7835.3500.

A copy of the presently filed rate schedule is attached to this contract. C

(Continued on Sheet No. 9-10.1)

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

UNIFORM STATEWIDE CONTRACT FOR COGENERATION AND SMALL POWER PRODUCTION FACILITIES (Continued)

Section No. 9
Original Sheet No. 10.1

3. The Utility will buy electricity from the QF under the current rate schedule filed with the Commission. If the QF has less than 40 kilowatts capacity, the QF elects the rate schedule category hereinafter indicated: N

_____ a. Average retail utility energy rate under part 7835.4013.

_____ b. Simultaneous purchase and sale billing rate under part 7835.4014.

_____ c. Time-of-day purchase rates under part 7835.4015.

A copy of the presently filed rate schedule is attached to this contract.

4. The Utility will buy electricity from the QF under the current rate schedule filed with the Commission. If the QF is not a net metered facility and has at least 40 kilowatts capacity but less than 1,000 kilowatt capacity, the QF elects the rate schedule category hereinafter indicated:

_____ a. Simultaneous purchase and sale billing rate under part 7835.4014.

_____ b. Time-of-day purchase rates under part 7835.4015.

A copy of the presently filed rate schedule is attached to this contract.

5. The Utility will buy electricity from a net metered facility under the current rate schedule filed with the Commission or will compensate the facility in the form of a kilowatt-hour credit on the facility's energy bill. If the net metered facility has at least 40 kilowatts capacity but less than 1,000 kilowatts capacity, the QF elects the rate schedule category hereinafter indicated (choose par. a, and then also choose either par. b or par. c):

_____ a. Kilowatt-hour energy credit on the customer's energy bill, carried forward and applied to subsequent energy bills, with an annual true-up under part 7835.4017.

_____ b. Simultaneous purchase and sale billing rate under part 7835.4014.

_____ c. Time-of-day purchase rates under part 7835.4015.

A copy of the presently filed rate schedule is attached to this contract. N

6. The rates for sales and purchases of electricity may change over the time this contract is in force, due to actions of the Utility or of the Commission, and the QF and the Utility agree that sales and purchases will be made under the rates in effect each month during the time this contract is in force. TL L L

(Continued on Sheet No. 9-11)

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

UNIFORM STATEWIDE CONTRACT FOR COGENERATION AND SMALL POWER PRODUCTION FACILITIES (Continued)

Section No. 9
1st Revised Sheet No. 11

7. The Utility will compute the charges and payments for purchases and sales for each billing period. Any net credit to the QF, other than kilowatt-hour credits under clause 5, will be made under one of the following options as chosen by the QF. TL C L

   _____ a. Credit to the QF's account with the Utility.

   _____ b. Paid by check to the QF within 15 days of the billing date.

8. Renewable energy credits associated with generation from the facility are owned by: N N

   _____,

9. The QF must operate its electric generating facilities within any rules, regulations, and policies adopted by the Utility not prohibited by the Commission's rules on Cogeneration and Small Power Production which provide reasonable technical connection and operating specifications for the QF (Northern States Power Company's Rules and Regulations Applicable to Cogeneration and Small Power Production Facilities are attached). This agreement does not waive the QF's right to bring a dispute before the Commission as authorized by Minnesota Rules, part 7835.4500, and any other provision of the Commission's rules on Cogeneration and Small Power Production authorizing Commission resolution of a dispute. T C

10. The Utility's rules, regulations, and policies must conform to the Commission's rules on Cogeneration and Small Power Production. T

11. The QF will operate its electric generating facilities so that they conform to the national, state, and local electric and safety codes, and will be responsible for the costs of conformance. T

12. The QF is responsible for the actual, reasonable costs of interconnection which are estimated to be $ _____ . The QF will pay the Utility in this way: _____ _____ . T

13. The QF will give the Utility reasonable access to its property and electric generating facilities if the configuration of those facilities does not permit disconnection or testing from the Utility's side of the interconnection. If the Utility enters the QF's property, the Utility will remain responsible for its personnel. T

14. The Utility may stop providing electricity to the QF during a system emergency. The Utility will not discriminate against the QF when it stops providing electricity or when it resumes providing electricity. T

(Continued on Sheet No. 9-12)

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

UNIFORM STATEWIDE CONTRACT FOR COGENERATION AND SMALL POWER PRODUCTION FACILITIES (Continued)

Section No. 9
1st Revised Sheet No. 12

15. The Utility may stop purchasing electricity from the QF when necessary for the Utility to construct, install, maintain, repair, replace, remove, investigate, or inspect any equipment or facilities within its electric system. The Utility will notify the QF before it stops purchasing electricity in this way: _____ . T T

16. The QF will keep in force liability insurance against personal or property damage due to the installation, interconnection, and operation of its electric generating facilities. The amount of insurance coverage will be $ _____ (The amount must be consistent with the Commission's interconnection standards under Minnesota Rules, part 7835.4750). T C C

17. This contract becomes effective as soon as it is signed by the QF and the Utility. This contract will remain in force until either the QF or the Utility gives written notice to the other that the contract is canceled. This contract will be canceled 30 days after notice is given. T

18. This contract contains all the agreements made between the QF and the Utility except that this contract shall at all times be subject to all rules and orders issued by the Public Utilities Commission or other government agency having jurisdiction over the subject matter of this contract. The QF and the Utility are not responsible for any agreements other than those stated in this contract. T

THE QF AND THE UTILITY HAVE READ THIS CONTRACT AND AGREE TO BE BOUND BY ITS TERMS. AS EVIDENCE OF THEIR AGREEMENT, THEY HAVE EACH SIGNED THIS CONTRACT BELOW ON THE DATE WRITTEN AT THE BEGINNING OF THIS CONTRACT.

QF	**NORTHERN STATES POWER COMPANY, a Minnesota corporation and wholly owned subsidiary of Xcel Energy Inc.**
_____	
By _____	By _____
_____	_____
(Title)	(Title)

The safety standards, required operating procedures for interconnected operations, and the functions to be performed by any control and protective apparatus follow:

SAFETY STANDARDS

1. Customer agrees to locate the qualifying facility so as to not cause a hazard to the Xcel Energy distribution system. Wind generators may only be installed at Xcel Energy-approved locations that preclude any possibility of the generation system contacting any Xcel Energy facilities if the system accidentally topples over. The total tower height, including the propeller when in the highest position, must be used in the determination.

2. The connection of the qualifying facility (QF) to the Xcel Energy distribution system must be made through a customer-provided, customer-installed, manual safety disconnect switch of adequate ampere capacity. The switch shall not open the neutral when the switch is open and must provide a visible disconnect. This switch shall have provisions for being padlocked in the open position with a standard Xcel Energy padlock. Customer agrees to locate the switch in a position accessible to Xcel Energy personnel, and further agrees the switch may be operated by Xcel Energy personnel at all times that such operation is deemed necessary by Xcel Energy for safety and operating reasons. QF's using line-commutated synchronous inverters shall have the inverters connected on the load side (QF side) of the safety disconnect switch.

3. Customer agrees to supply Xcel Energy a schematic diagram and associated equipment list for the qualifying facility (QF) control circuitry to enable Xcel Energy to determine if the QF's safety equipment provides a level of safety consistent with the safety level required by Xcel Energy in its electric equipment. If further analysis of the proposed QF by Xcel Energy reveals that it is capable of backfeed into the Xcel Energy lines during distribution outages, customer shall immediately disconnect the QF from Xcel Energy distribution system and shall only reconnect the QF through a customer-provided, Xcel Energy-approved, interconnect device that will prevent said backfeed.

4. Customer understands and agrees that as additional qualifying facilities are connected to the Xcel Energy distribution system, Xcel Energy may require customer to install further additional safety devices at customer expense.

OPERATING PROCEDURES

1. Customer agrees to disconnect the qualifying facility (QF) from the Xcel Energy distribution system or to reimburse Xcel Energy for cost of necessary system modifications if operation of the QF causes radio, television, or electrical service interference to other customer or interference with the operation of Xcel Energy's system.

2. Since the power factor and the voltage at which Company's system and customer's system are operated will vary, each party agrees to operate his system at a power factor as near unity as possible in such manner as to absorb his share of the reactive power, and voltage as conducive to the best operating standards.

FUNCTIONS OF REQUIRED CONTROL & PROTECTIVE EQUIPMENT

1. Customer shall provide the necessary equipment as approved by Xcel Energy to operate the qualifying facility (QF) in parallel with Xcel Energy's distribution system. The QF shall be equipped to instantaneously discontinue all output to and energization of Xcel Energy's distribution system under the following conditions:

   A. De-energized Xcel Energy system
   B. Sustained line faults on Xcel Energy system
   C. Faults on customer's system

2. Customer agrees to effectively ground the qualifying facility installation and to provide and install adequate surge arrester protection to prevent lightning damage to any Xcel Energy distribution system equipment.

3. Customer shall consult with Xcel Energy regarding these minimum requirements, additional protection recommended, and proper operation of customer's generating system.

TECHNICAL INTERRCONNECTION REQUIREMENTS

The customer's QF shall comply with the "Distributed Generation Interconnection Requirements" which are described in Section 10 of the Minnesota Electric Rate Book. These interconnection requirements are the technical standards authorized by the MPUC and are consistent with the Commission's Rules, Chapter 7835, on Cogeneration and Small Power Production.

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Schedule F
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At this time, the Company has no plans to interrupt the purchase of electric energy or capacity from qualifying facilities because of extraordinary operational circumstances which would make the costs of purchases during those periods greater than the costs of internal generation. Therefore, no procedures exist for notifying qualifying facilities of such interruptions.

PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED

Minnesota Public Utilities Commission
DOCKET NO. E999/PR-19-9 **Reporting Period:** January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff **Utility:** Xcel Energy

Minn. Rules 7835.1000 Schedule G: Computations and Descriptions

Schedule G must contain and describe all computations made by the utility in determining Schedules A and B. Please use the space below to show your calculations. Refer to Minn. Rules 7835.0500-7835.0600 for detailed computation descriptions, especially for Schedule B Subp. 5 and 6.

NUMBER OF PEAK HOURS

The on peak period

contains all other

	On-Peak	Off-Peak
Winter	2,023	3,809
Summer	1,022	1,906
Total	3,045	5,715

On-Peak Days/Week	5	Days
On-Peak Hour Block	12	Hours

	Day in Month	On Peak Hours	Off Peak Hours
June	30	257	463
July	31	266	478
4th of July		-12	12
August	31	266	478
September	30	257	463
Labor Day		-12	12
October	31	266	478
November	30	257	463
Thanksgiving		-12	12
December	31	266	478
Christmas		-12	12
January	31	266	478
New Year's Day		-12	12
February	28	240	432
March	31	266	478
Easter		-12	12
April	30	257	463
May	31	266	478
Memorial Day		-12	12
		3,045	5,715

MARGINAL ENERGY COST CALCULATION

Marginal Energy Costs ($/MWh)		2019	2020	2021	2022	2023
			[PROTECTED DATA BEGINS			
Summer	On Peak	30.73				
	Off Peak	17.89				
	All Hours	22.31				
Winter	On Peak	28.36				
	Off Peak	20.52				
	All Hours	23.28				
Annual	On Peak	29.14				
	Off Peak	19.63				
	All Hours	22.96				

PROTECTED DATA ENDS]

Loss Factors	Summer On-Peak	Summer Off-Peak	Average Summer	Winter On-Peak	Winter Off-Peak	Average Winter
Overall	0.9240	0.9374	0.9327	0.9288	0.9388	0.9359
50% of Overall	0.9620	0.9687	0.9664	0.9644	0.9694	0.9680

Adj. Marginal Energy Costs ($/MWh)		2019	2020	2021	2022	2023
			[PROTECTED DATA BEGINS			
Summer	On Peak	31.94				
	Off Peak	18.47				
	All Hours	23.09				
Winter	On Peak	29.41				
	Off Peak	21.17				
	All Hours	24.05				
Annual	On Peak	30.26				
	Off Peak	20.27				
	All Hours	23.71				

PROTECTED DATA ENDS]

PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED

CAPACITY COST CALCULATION		**[PROTECTED DATA BEGINS where shaded**	
(a)	(1) Completed Cost of C.T. Unit (2019 $)		/kW
(b)	(2) Inflation Net of Technical Progress	2.77%	
(c)	(3) Average Service Life	40	Years
(d)	(4) Discount Rate (After Tax)	6.44%	
	Calculation of Marginal Capital Carry Charge Rate		
(e)	(5) Present Value of Revenue Requirements		/kW
	(6) Annuity Factor Adjustment for Inflation **	0.04866	
	(7) Present Value of Revenue Requirements		
	Adjusted for Inflation (5)*(6)		
	(8) Marginal Capital Carrying Charge Rate		
	(7)/(1)		
	(9) First Year Revenue Requirement (1)*(8)		/kW (2019 $)
(f)	(10) Present Value at 6.44% for 0 years		/kW
(g)	(11) Present Value of Average Annual Fuel Savings		/kW
	(12) Annual Avoided Capacity Cost		/kW
	(10)-(11)		
(h)	(13) Adjusted for 15% Reserve Margin		/kW
(i)	(12)*1.15		
	(14) Plus $xx.xx/kW Fixed O & M (2019 $)		/kW
(j)	(13)+xx.xx		
(k)	(15) Adjusted for losses (14)/0.9674		/kW
	(16) NET ANNUAL AVOIDED CAPACITY COST	$52.02	/kW
	(17) Net Winter On-Peak Avoided Capacity Cost (TOD PURCHASE)		
	(16)*0.2340*100/2023	0.00602	$/kWh
	(18) Net Summer On-Peak Avoided Capacity Cost (TOD PURCHASE)		
	(16)*0.7660*100/1022	0.03900	$/kWh
	(19) Net Annual On-Peak Avoided Capacity Cost		
	(16)*100/3045	0.01709	$/kWh
	(20) Net Winter Avoided Capacity Cost		
	Averaged Over All Winter Hours (PURCHASE & SALE BILLING)	0.00209	$/kWh
	(16)*0.2340*100/5832		
	(21) Net Summer Avoided Capacity Cost		
	Averaged Over All Summer Hours (PURCHASE & SALE BILLING)	0.01361	$/kWh
	(16)*0.7660*100/2928		
	(22) Net Annual Avoided Capacity Cost		
	Average Over All Hours	0.00594	$/kWh
	(16)*100/8760		

Note: The

** AC = k*(r-j)*(1+j)^(t-1)*[1/(1-(1+j)^n/(1+r)^n)]
Where AC = Annual Charge in year t
t = Year (=1)
K = Total Present Value Cost of Original Investment
r = Discount Rate (Overall Marginal Cost of Capital) (6.44%)
j = Inflation Rate Net of Technology Progress (2.77%)
n = Expected Service Life of Investment (40 Years)

(l)	Summer Percent:	76.60%
(m)	Winter Percent:	23.40%
	Total:	100.00%
(n)	O & M	

PROTECTED DATA ENDS]

Minnesota Public Utilities Commission

DOCKET NO. E999/PR-19-9	**Reporting Period:**	January 1 - December 31, 2019
Cogeneration and Small Power Production Tariff	**Utility:**	Xcel Energy

Minn. Rules 7835.1100 Schedule H: Wholesale Power Rates

Special Rule for Non-Generating Utilities: Schedule H must list the rates at which a non-generating utility purchases energy and capacity. If the non-generating utility has more than one wholesale supplier, schedule H must list the rates of that supplier from which purchases may first be avoided. If the non-generating utility with more than one wholesale supplier also chooses to file schedules A and B, the data on schedules A and B must be obtained from that supplier from which purchases may first be avoided. Please use the space below to include these rates.

NOT APPLICABLE FOR XCEL ENERGY

Final

EXCESS GENERATION-AVERAGE RETAIL UTILITY ENERGY SERVICE
RATE CODE A50

AVAILABILITY

This service corresponds to Minn. R. 7835.4012 and Minn. R. 7835.4013 (Average Retail Energy Rate) and to Paragraph 3.a of the Uniform Statewide Contract for Cogeneration and Small Power Production. Available to any qualifying facility (QF) of less than 40 kW AC capacity who receives non-time of day retail electric service from Company and offsets energy delivered by Company. The A50 Rate Code applies to the extent the energy delivered by the customer exceeds that supplied by the Company during the monthly billing period, and the rates below are for that net excess generation.

RATE	Production Meter Installed	No Production Meter Installed	
Metering Charge per Month			
Single Phase	$3.15	$1.68	
Three Phase	$6.40	$2.58	
Payment per kWh for Energy Delivered to Company in Excess of Energy Used	Oct-May	Jun-Sep	
With Retail Non-Demand Metered Service	$0.12328	$0.13222	R
With Retail Demand Metered Service	$0.06812	$0.06939	R

TERMS AND CONDITIONS OF SERVICE

1. Energy used by customer in excess of energy delivered by the QF at the same site during the same billing period shall be billed in accordance with the appropriate non-time of day retail electric rate.

2. For demand metered General Service customers, the entire kW demand supplied by the Company at the same site during the same billing period shall be billed to the customer according to the appropriate general service demand charge rate.

3. Interconnection charges will be assessed by the Company on an individual basis for all costs associated with addition to or modification of Company facilities to accommodate the QF. The net interconnection charge is the responsibility of the QF.

4. The voltage and phase of customer's generator must be consistent with existing service and approved by the Company.

5. The customer must maintain a power factor as close to unity as possible or as specified in the "Power Factor" provision of the "*Distributed Generation Interconnection Requirements*" section of the Section 10 tariff.

SALE TO COMPANY AFTER CUSTOMER SELF-USE Section No. 9
RATE CODE A51, A52 24th Revised Sheet No. 3

AVAILABILITY

This service corresponds to Minn. R. 7835.4012, .4014 (Simultaneous Purchase and Sale Billing Rate) and .4015 (Time-of-Day Purchase Rates) and to Paragraphs 3.b., 3.c., 4.a and 4.b of the Uniform Statewide Contract for Cogeneration and Small Power Production. Available to any qualifying facility (QF) customer of less than 1,000 kW AC capacity. The energy payment rates below apply to the energy which the customer exports to the Company after any self-use by the customer.

RATE	Production Meter Installed	No Production Meter Installed
Metering Charge per Month		
Single Phase	$5.50	$2.58
Three Phase	$8.00	$6.76

Where the customer receives non-time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A51)	Oct-May	Jun-Sep	
Energy Payment per kWh	$0.02405	$0.02309	R
Capacity Payment for Firm Power per kWh	$0.00209	$0.01361	R

Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company (A52)	Oct-May	Jun-Sep	
On Peak Energy Payment per kWh	$0.02941	$0.03194	R
Off Peak Energy Payment per kWh	$0.02117	$0.01847	R
Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900	R

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

(Continued on Sheet No. 9-3.1)

AVAILABILITY

This service corresponds to Minn. R. 7835.4012, .4014 (Simultaneous Purchase and Sale Billing Rate) and .4015 (Time-of-Day Purchase Rates) and to Paragraphs 3.b., 3.c., 4.a. and 4.b. of the Uniform Statewide Contract for Cogeneration and Small Power Production. Available to any qualifying facility (QF) customer of less than 1,000 kW AC capacity. The energy payment rates below apply to the extent the energy delivered by the customer exceeds that supplied by the Company during the monthly billing period, and the rates below are for that net excess generation.

RATE	Production Meter Installed	No Production Meter Installed
Metering Charge per Month		
Single Phase	$5.50	$2.58
Three Phase	$8.00	$6.76

Where the customer receives non-time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company in Excess of Energy Used (A53)	Oct-May	Jun-Sep	
Energy Payment per kWh	$0.02405	$0.02309	R
Capacity Payment for Firm Power per kWh	$0.00209	$0.01361	R

Where the customer receives time of day retail electric service, the following Rate Code applies.

Payment Schedule for Energy Delivered to Company in Excess of Energy Used (A54)	Oct-May	Jun-Sep	
On Peak Energy Payment per kWh	$0.02941	$0.03194	R
Off Peak Energy Payment per kWh	$0.02117	$0.01847	R
Capacity Payment for Firm Power per On Peak kWh	$0.00602	$0.03900	R

DETERMINATION OF FIRM POWER

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

(Continued on Sheet No. 9-4.1)

ANNUAL NET METERING (KWH BANKING OPTION) Section No. 9
RATE CODE A55, A56 3rd Revised Sheet No. 4.2

Availability

This service corresponds to Minn. R. 7835.4012, .4014 (Simultaneous Purchase and Sale Billing Rate), .4015 (Time-of-Day Purchase Rates), and .4017 (Net Metered Facility; Bill Credits), and to Paragraphs 5.a, 5.b, and 5.c of the Uniform Statewide Contract for Cogeneration and Small Power Production. Available to a qualifying facility (QF) or Net Metered Facility (NMF) customer who elects to be compensated for net input into the utility's system in the form of a kilowatt-hour credit on the customer's bill for that customer's account, subject to the following conditions:

A. The customer is not receiving a value of solar rate under Minnesota Statutes, section 216B.164, subdivision 10;
B. The customer is interconnected with the Company; and
C. The customer has at least 40 kilowatt AC capacity but less than 1,000 kilowatt AC capacity.

Metering Charge per Month	
Single Phase	$5.50
Three Phase	$8.00

The Company compensates the customer, in the form of an energy payment, for the bank balance for kWh credits annually at the rate set forth below.

	Annual	
Energy Payment per kWh for Customers on non-time of day Service Tariffs (A55)	$0.02370	R

Time of Day Service Customers (A56)	Annual	
On Peak Energy Payment per kWh	$0.03034	R
Off Peak Energy Payment per kWh	$0.02018	R

Capacity Payment for Firm Power where customer receives	Oct-May	Jun-Sep	
non-time of day retail electric service per kWh	$0.00209	$0.01361	R
time of day retail electric service per on-peak kWh	$0.00602	$0.03900	R

Determination of Firm Power

The customer will have supplied firm power if during the billing period an on peak capacity factor of at least 65% was achieved. The calculation of the on peak capacity factor will be as follows: the average on peak period metered capacity delivered to the Company for the on peak period of the billing period divided by the greatest 15 minute metered capacity delivered for the on peak period of the same billing period expressed in percent and rounded to the nearest whole percent. If the percent calculated is 65 or greater, capacity payment will be made. If the percent calculated is less than 65, capacity payment will not be made.

(Continued on Sheet No. 9-4.3)

CERTIFICATE OF SERVICE

I, Paget Pengelly, hereby certify that I have this day served copies of the foregoing document on the attached list of persons.

xx by depositing a true and correct copy thereof, properly enveloped with postage paid in the United States mail at Minneapolis, Minnesota;

xx electronic filing

Docket No. E999/PR-19-9

Dated this 10th day of September 2019

/s/

_____

Paget Pengelly
Regulatory Administrator

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Jeffrey C	Paulson	jeff.jcplaw@comcast.net	Paulson Law Office, Ltd.	4445 W 77th Street Suite 224 Edina, MN 55435	Electronic Service	No	OFF_SL_19-9_Official
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Mark	Rathbun	mrathbun@grenergy.com	Great River Energy	12300 Elm Creek Blvd Maple Grove, MN 55369	Electronic Service	No	OFF_SL_19-9_Official
Michael	Reinertson	michael.reinertson@avantenergy.com	Avant Energy	220 S. Sixth St. Ste 1300 Minneapolis, Minnesota 55402	Electronic Service	No	OFF_SL_19-9_Official
Generic Notice	Residential Utilities Division	residential.utilities@ag.state.mn.us	Office of the Attorney General-RUD	1400 BRM Tower 445 Minnesota St St. Paul, MN 551012131	Electronic Service	Yes	OFF_SL_19-9_Official
Kevin	Reuther	kreuther@mncenter.org	MN Center for Environmental Advocacy	26 E Exchange St, Ste 206 St. Paul, MN 551011667	Electronic Service	No	OFF_SL_19-9_Official
Richard	Savelkoul	rsavelkoul@martinsquires.com	Martin & Squires, P.A.	332 Minnesota Street Ste W2750 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-9_Official
Larry L.	Schedin	Larry@LLSResources.com	LLS Resources, LLC	332 Minnesota St, Ste W1390 St. Paul, MN 55101	Electronic Service	No	OFF_SL_19-9_Official
David	Shaffer	shaff081@gmail.com	Minnesota Solar Energy Industries Project	1005 Fairmount Ave Saint Paul, MN 55105	Electronic Service	No	OFF_SL_19-9_Official
Doug	Shoemaker	dougs@charter.net	Minnesota Renewable Energy	2928 5th Ave S Minneapolis, MN 55408	Electronic Service	No	OFF_SL_19-9_Official

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Paul	White	paul.white@prcwind.com	Project Resources Corp./Tamarac Line LLC/Ridgewind	618 2nd Ave SE Minneapolis, MN 55414	Electronic Service	No	OFF_SL_19-9_Official
Daniel P	Wolf	dan.wolf@state.mn.us	Public Utilities Commission	121 7th Place East Suite 350 St. Paul, MN 551012147	Electronic Service	Yes	OFF_SL_19-9_Official

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