



414 Nicollet Mall
Minneapolis, MN 55401

April 1, 2019

**PUBLIC DOCUMENT:
NOT PUBLIC DATA HAS BEEN EXCLUDED**

—Via Electronic Filing—

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

RE: COMPLIANCE
RENEWABLE*CONNECT PILOT PROGRAM
DOCKET NO. E002/M-15-985

Dear Mr. Wolf:

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission this compliance filing and tracker account, as well as our proposed 2020 Month-to-Month and Special Events rates, and Neutrality Charge.

Please note that certain portions of our compliance report have been designated as Trade Secret information pursuant to Minnesota Statute § 13.37, subd. 1(b). In particular, the information designated as Trade Secret derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

In addition, we have designated certain customer information as private data on individuals. Specifically, data such as customer payments and costs in conjunction with the Renewable*Connect Government program have been removed from the public version of this report, consistent with Minn. Stat. §§ 13.37, Subd. 2(a), and 13.02, Subd. 12.

We have electronically filed this document with the Minnesota Public Utilities Commission, and copies have been served on the parties on the attached service list.

A copy of this filing has been served on the Minnesota Department of Commerce, Division of Energy Resources, and the Office of Attorney General - Antitrust and Utilities Division and on all other parties on the attached service list. If you have any

questions regarding this filing, please contact Pamela Gibbs at 612-330-2889 or pamela.k.gibbs@xcelenergy.com or me at (612) 330-5941 or holly.r.hinman@xcelenergy.com.

Sincerely,

/s/

HOLLY HINMAN
REGULATORY MANAGER

Enclosures

c: Service List

STATE OF MINNESOTA
BEFORE THE
MINNESOTA PUBLIC UTILITIES COMMISSION

Dan Lipschultz
Matthew Schuerger
Katie J. Sieben
John A. Tuma

Commissioner
Commissioner
Commissioner
Commissioner

PETITION OF NORTHERN STATES
POWER COMPANY FOR APPROVAL OF A
RENEWABLE*CONNECT PILOT
PROGRAM

DOCKET No. E002/M-15-985

**ANNUAL COMPLIANCE FILING,
TRACKER ACCOUNT REPORT,
AND PROPOSED 2020 TARIFF
RATES**

INTRODUCTION

Northern States Power Company, doing business as Xcel Energy, submits to the Minnesota Public Utilities Commission our Renewable*Connect pilot program compliance filing and tracker account report in accordance with the Commission's February 27, 2017 Order in Docket No. E-002/M-15-985 and August 13, 2018 Order in Docket No. E002/M-18-252. In addition, we are filing our 2020 Month-to-Month and Special Event tariff rate, as well as our Neutrality Charge, and we are requesting Commission approval of these rates.

We note that the Commission Order requires the Company to file an annual compliance report each April 1 after the "first full year of operation" which, on a calendar year basis was January 1 – December 31, 2018.

As of May 23, 2018, the pilot program was 100 percent subscribed. As of December 31, 2018, there were roughly 1,100 customers on the waitlist.

More specifically, we can report the following subscriptions and sales for the Renewable*Connect Program:

Table 1 – Renewable*Connect Program Subscriptions & Sales

Customer Class	Number of Subscribers	kWh Sales
Residential	3,217	20,885,877
Small Commercial	37	377,707
Demand Billed	112	118,195,941
Total	3,366	139,459,525

I. REPORTING REQUIREMENTS

A. Compliance Requirements

This compliance filing covers the Renewable*Connect Pilot Program activity for the period of January 1, 2018 to December 31, 2018.

As required by the February 27, 2017 Order, each annual compliance report shall provide the following data:

Order Point 5.

Xcel shall file annual reports each April 1 after the first full year of operation as listed in its filing. The annual report shall contain:

- a. Total number of participants broken down by customer class, and by length of contract (including special events) – See Table 2;
- b. Total wind production – See Table 3;
- c. Total solar production – See Table 3;
- d. Total Renewable*Connect expenses – See Table 4;
- e. Total Renewable*Connect Government expenses – See Table 5;
- f. Total Amount collected in Renewable*Connect charges – See Table 4;
- g. Total Amount collected in Renewable*Connect Government charges – See Table 5;
- h. The Tracker balances as shown in Attachment H of Xcel’s filing – See Section C. and Attachment A;
- i. Monthly comparisons of Renewable*Connect Pricing for participants with the Fuel Charge for nonparticipant customers – See Section D;
- j. Impact of Renewable*Connect pilots on all nonparticipant customers – See Section E;

- k. Impact on all Xcel Ratepayers through updates in base rates – See Section F.; and
- l. Information on the number of terminations and an accounting of termination fees – See Section G.

In this filing we also respond to the Commission’s August 13, 2018 Order in Docket No. E002/18-252, addressing proposed revisions to the methodology for calculating the Neutrality Adjustment.

B. Summary Data (Order Points 5.a. – 5.g.)

Please note that certain portions of our compliance report data and tracker account have been designated as Trade Secret information pursuant to Minnesota Statute § 13.37, subd. 1(b). In particular, the information designated as Trade Secret derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.

In addition, we have designated certain customer information as nonpublic data with regard to data not on individuals or as private data on individuals pursuant to Minn. Stat. §13.02, Subds. 9 and 12 . Specifically, data such as customer payments and costs in conjunction with the Renewable*Connect Government program have been removed from the public version of this report, consistent with Minn. Stat. §§ 13.37, Subd. 2(a).

Tables 2, 3, 4 and 5 below summarize some of the key data required by Order Point 5:

Table 2 – Renewable*Connect Participants by Class and Length of Contract (Order Point 5.a.)

Customer Class	Monthly	5 Year	10 Year	Total
Residential	1,500	1,096	621	3,217
Commercial	16	14	7	37
Demand Billed	30	43	39	112
Total	1,546	1,153	667	3,366

There were no special event subscriptions during the current reporting period.

Table 3 – Renewable*Connect Wind and Solar Production
(Order Point 5.b. – 5.c.)

Resource	Production ¹ (kWh)	Percent
	[PROTECTED DATA BEGINS:	
Wind		
Solar		
	PROTECTED DATA ENDS]	

Table 4 – Renewable*Connect Revenue & Expenses
(Order Point 5.d. and 5.f.)

	2018 Reporting Period
Revenue	
Customer Payments:	[PROTECTED DATA BEGINS:
Month-to-Month	
Five Year Contract	
Ten Year Contract	
Other:	
Capacity Credit	
Total Revenue	
Expenses	
Resource Production Cost	
Neutrality Charges	
Marketing & Admin.	
Total Expenses	
	PROTECTED DATA ENDS]
Balance	\$331,674

¹ Production corresponds to Total Program Wind and Solar “Production Requirement” in Attachment A.

Table 5 – Renewable*Connect Government Revenue & Expenses
(Order Point 5.e. and 5.g.)

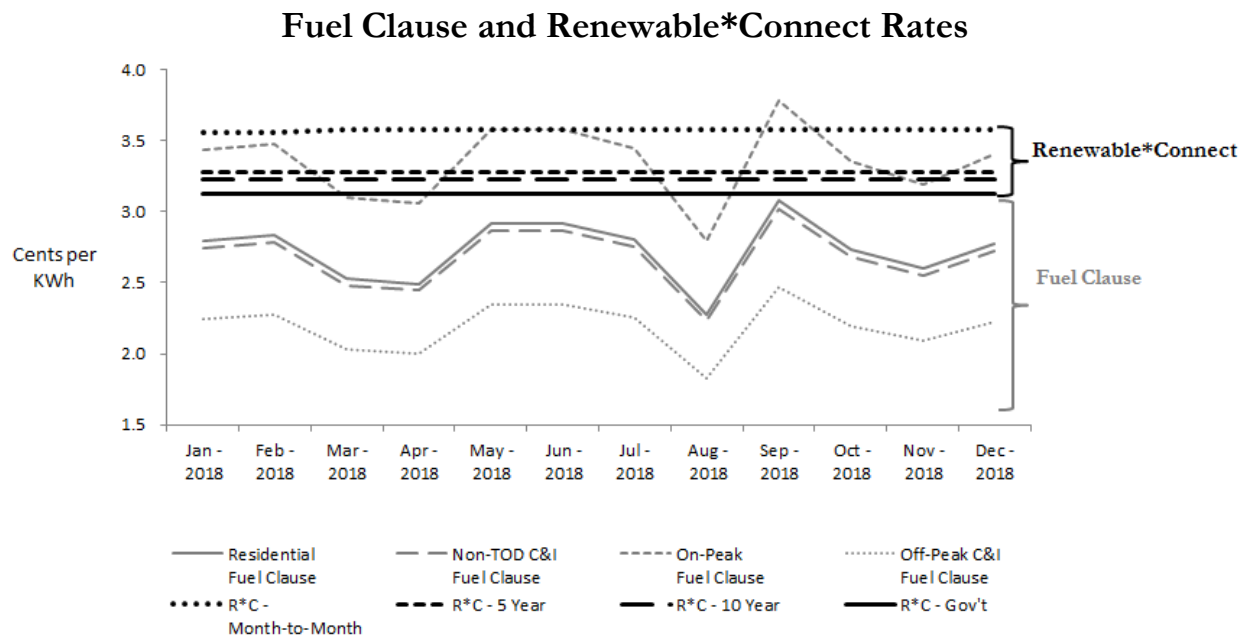
	2018 Reporting Period
Revenue	
Customer Payments:	[PROTECTED DATA BEGINS:
Month-to-Month	
Other:	
Capacity Credit	
Total Revenue	
Expenses	
Resource Production Cost	
Neutrality Charges	
Marketing & Admin.	
Total Expenses	
	PROTECTED DATA ENDS]
Balance	\$57,701

C. Tracker Account Report (Order Point 5.h.)

A Renewable*Connect Pilot Program tracker account report is included as Attachment A.

D. Pricing and Fuel Clause Rates (Order Point 5.i.)

The Renewable*Connect pricing for all subscription classes was higher than all non-on-peak fuel clause rates. See graph below.



E. Impact on Non-Participants/Ratepayers (Order Point 5.j.)

To test the effectiveness of the Company's neutrality charge, the Company reviewed the actual system impact of the resources across the identified categories. As expected, line losses were the most significant impact across the cost categories as illustrated in Table 6. Curtailments, on the other hand, were expected to have a larger impact based on experience with other resources. More specifically, the Company expected wind resources would be curtailed more often and solar resources would see minimal curtailments. In 2018, as was the case in 2017, the opposite occurred. The program's wind resources were curtailed less than the program's solar resources. Curtailments on program solar resources totaled nearly \$40,000 and \$4,109 were allocated to the program.

To understand the potential impact of the Renewable*Connect Program on non-participant energy cost, the Company performed an analysis that compared the marginal cost of energy, in this case on and off-peak LMP pricing, to the PPA cost of solar and wind resources allocated to Renewable*Connect, consistent with the analysis the Company performed for the prior annual compliance filing. The results continue to directionally indicate that non-participants were not impacted on a cost of energy basis as the cost of the wind and solar energy exceeded the marginal energy cost estimate. Therefore, in 2018 no incremental costs were borne by non-participating customers during the current reporting period.

The Company added integration costs to the list of impacts under the Economic/Balancing category. Wind integration cost rates provided in the Company's Dakota Range filing in Docket No. M-17-694 were also used to estimate the cost of the integration of the program's wind resources. The analysis results in an estimate of nearly \$185,000 in wind integration costs for the 2018 reporting period.

Table 6 – Non-Participants Impact

	2018
Line Losses	\$341,813
Solar Curtailments	\$4,109
Wind Curtailments	\$3,594
Economic/Balancing	\$184,916
Total	\$534,432
Neutrality Payments	\$706,319
Non-Participant Cost/(Benefit)	\$(171,886)

F. Impact on all Xcel Energy Ratepayers Through Updates in Base Rates (Order Point 5.k.)

There were no updates to base rates in calendar year 2018.

G. Terminations (Order Point 5.l.)

There were no business customer terminations during the current reporting period. There were 26 residential customer terminations, which resulted in a total of \$1,778 in termination fees. Residential terminations were due to the customer moving out of our service territory.

H. Neutrality Adjustment (Order Point 2, Docket 18-252)

Since the Renewable*Connect Pilot was approved, the Company has developed two tools to measure the cost of integrating and balancing renewable energy on the system. First, the Company developed wind integration costs associated with current and new wind projects in the Company's 302.4 MW Dakota Range I and II filing in Docket No. E002/M-17-694 as previously mentioned. The Company incorporated these values and resulting costs into the non-participant analysis.

Second, the Company also included a seasonal balancing cost analysis in the Company's petition to expand the Renewable*Connect program, Docket No.

E002/M-19-33. Please see Attachment C (as filed in Docket E002/M-19-33) referencing these tools. The goal of this analysis is to put a value on the seasonal timing difference between program usage and program resource production. More specifically, the analysis uses LMP pricing to measure the the cost differential of excess program usage in the summer with excess energy supplied by program resources in the winter. However, the Company does not believe it's appropriate to incorporate this analysis into the non-participant impact of the Renewable*Connect Pilot because the pilot program is self-balanced within the program's resources. The Renewable*Connect Pilot was designed to use 25 percent or less of the program resources and therefore these resources are able to supply the energy needed for the program each month and a balancing cost is not incurred.

II. LEARNINGS

As indicated in our initial petition, the Company offered Renewable*Connect as a pilot to test customer interest in program participation and learn more about how to meet customer renewable energy goals. The Company reported initial learnings in the first annual compliance filing. Those learnings are still relevant, and they played a significant role in informing the approach to the proposed expansion of the Renewable*Connect program (Docket No. E002/M-19-33).

The initial learnings that were reported and described in the prior annual compliance filing included:

- Program resource requirements are difficult to forecast based on customer expressions of interest;
- A robust mix of marketing tactics is needed to yield a large amount of enrollments in a short period of time;
- Development of the Renewable*Connect Government program has contributed to the Company's ability to better understand the unique requirements of government customers;
- Some customers have enrolled in Renewable*Connect while expressing interest in additional options such as new renewable resources not yet in place to meet their green energy goals;
- Solar resources on our transmission system were subject to curtailment by the Midcontinent Independent System Operator (MISO); and
- Flexibility is key to addressing the unique situations of individual customers.

Additional learnings that were cited in the proposed expansion of the Renewable*Connect program (Docket No. E002/M-19-33) include the following.

1. Interest in Renewable Choice is Growing

Customer interest in the ability to voluntarily purchase renewable electricity is getting stronger, and the Company's voluntary renewable programs continue to exceed expectations. Windsource has seen sustained subscription growth and the number of customers on the waiting list for Renewable*Connect continues to increase. To address this strong customer interest, we are working to expand Renewable*Connect and to transition Windsource into the Renewable*Connect structure.

2. Customers are Interested in Counting System Renewables Toward Their Goals

While interest in renewable choice continues to grow, customers are also interested in counting the renewable energy that is delivered as part of their regular service toward their renewable energy goals. The Company is developing an accounting framework to clarify the attribution of system renewable electricity to retail customers.

3. Term Length Options and Ongoing Availability

One particularly important element of providing flexibility to address the unique needs of different customers is offering a variety of term lengths. Customers value the ability to choose different contract lengths that fit their needs and planning horizons. Additionally, as evidenced by the growing number of customers on the Renewable*Connect waiting list, customers are interested in taking voluntary action to purchase renewable electricity at any time, not just during a limited enrollment period. The program structure of Renewable*Connect is compelling to many customers, and the ability to have a flexible month-to-month product with ongoing availability would be valued by customers.

III. UPDATE ON RESOURCE ACQUISITION FOR THE EXPANSION OF RENEWABLE*CONNECT

Concurrent with the request for approval to expand the Renewable*Connect program (Docket No. E002/M-19-33), the Company is taking steps to procure resources to supply the program. The final pricing of the new Renewable*Connect offerings is dependent on the final negotiated PPA prices. We will supplement the record when the acquisition process is completed with the final pricing.

The Company continues to make progress in seeking bids and negotiating terms with potential counterparties in order to secure cost-effective new wind and solar resources

to support the expansion of the Renewable*Connect program. We previously estimated that this process would be completed by Spring of 2019 (Docket No. E002/M-19-33). At this time, contract negotiations are expected to be complete in several months. The resources and final pricing for the new Renewable*Connect offerings will be filed for Commission approval later in 2019.

IV. 2020 PROPOSED RATES

As indicated in our September 21, 2017 filing regarding revisions to the Renewable*Connect pilot program, the Company will file updates to its Month-to-Month and Special Event rate, as well as Neutrality Charge, in conjunction with our annual compliance filing. Using this process, the Commission last approved changes to these rates in its August 13, 2018 order in Docket No. E002/M-18-252. Please see Attachment B for our proposed 2020 Month-to-Month and Special Event rates, and Neutrality Charge. The proposed adjustments reflect the yearly costs associated with the production facilities utilized to support the pilot program.

CONCLUSION

Renewable*Connect is a valuable offering for customers, providing them with a blend of wind and solar resources to meet their renewable energy goals and electric energy requirements. We respectfully request the Commission accept this compliance filing and tracker report, and approve our 2020 Month-to-Month and Special Event rates, and Neutrality Charge.

Dated: April 1, 2019

Northern States Power Company

2018 Renewable*Connect Sales, Revenue and ExpenseTracker*In MWhs, except where labeled differently*

Renewable*Connect Sales and Associated Renewable Facility Production													
Type/Detail	January	February	March	April	May	June	July	August	September	October	November	December	Total
Month-to-Month	[PROTECTED DATA BEGINS....												
5 Year Contract													
10 Year Contract													
Sub-Total R*C													
Government													
Total													
R*C Wind Production Requirement													
R*C Solar Production Requirement													
Wind Production													
Solar Production													
Total Production													
Wind Production to FCA													
Solar Production to FCA													
Total Production to FCA													
...PROTECTED DATA ENDS]													
Renewable*Connect Program Recovery (Dollars)													
Payments from Customer	January	February	March	April	May	June	July	August	September	October	November	December	Total
Month-to-Month	[PROTECTED DATA BEGINS....												
5 Year Contract													
10 Year Contract													
Sub-total Renewable*Connect													
Government													
Total Renewable*Connect													
Capacity Credits													
Base Rate Allocation													
Total Renewable Connect Revenue	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
...PROTECTED DATA ENDS]													
Renewable*Connect Program Expense (Dollars)													
Credits to the Fuel Clause	January	February	March	April	May	June	July	August	September	October	November	December	Total
Month-to-Month	[PROTECTED DATA BEGINS....												
5 Year Contract													
10 Year Contract													
R*C Production Cost													
R*CG Production Cost													
Total Production Cost													
Neutrality Recovery													
Credits to the Fuel Clause													
Marketing and Admin. Expense													
Total Renewable Connect Expense													
...PROTECTED DATA ENDS]													
Over/(Under) Recovery	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Prior Year Ending Balance													(\$324,152)
Cumulative Balance													(\$324,152)

MEMO: Individual Rate Component Recovery

In MWhs, except where labeled differently

		January	February	March	April	May	June	July	August	September	October	November	December	Total
Month-to-Month	0.477	[PROTECTED DATA BEGINS....]												
5 Year Contract	0.477													
10 Year Contract	0.477													
R*CG Neutrality Recovery														
R*CG Neutrality Recovery	0.477													
Total Neutrality Recovery														
...PROTECTED DATA ENDS...														

Marketing and Admin. Charge Revenue		January	February	March	April	May	June	July	August	September	October	November	December	Total
		[PROTECTED DATA BEGINS....												
Month-to-Month	0.525													
5 Year Contract	0.275													
10 Year Contract	0.225													
		Sub-total R*C												
R*CG	0.125													
Total Marketing and Admin Recovery														
...PROTECTED DATA ENDS														

Marketing Expense	
Admin. Labor	
Total Marketing & Admin Expense	

...PROTECTED DATA EN

	[REDACTED]
R*C	[REDACTED]
R*CG	[REDACTED]
Total Marketing & Admin Expense	[REDACTED]
Marketing/Admin - Over/(Under) Recovery	[REDACTED]

...PROTECTED DATA EN

Capacity Credit		January	February	March	April	May	June	July	August	September	October	November	December	Total
Month-to-Month	0.674	[PROTECTED DATA BEGINS....												
5 Year Contract	0.674													
10 Year Contract	0.674													
Sub-total R*C														
R*CG	0.674													
Total R*C and R*CG Sales														
...PROTECTED DATA EN														

Redline

**VOLUNTARY RENEWABLE*CONNECT PILOT PROGRAM
 RIDER (Continued)**

Section No. 5
~~3rd~~ 4th Revised Sheet No. 150

RATE

The R*C Price for the pilot phase R*C Resources of each R*C Service Type shall be as follows based on year of production, unless otherwise provided for in this tariff:

Month-To-Month R*C or Single Event R*C Service Type	
Year number	\$/kWh
2 (2018) <u>3 (2019)</u>	\$0.03577 <u>\$0.03599</u>
3 (2019) <u>4 (2020)</u>	\$0.03599 <u>\$0.03623</u>

DL
LN

5-Year and 10-Year R*C Service Type

Year	5-Year Contract (\$/kWh)	10-Year Contract (\$/kWh)
2017	\$0.03243	\$0.03193
2018	\$0.03280	\$0.03230
2019	\$0.03317	\$0.03267
2020	\$0.03330	\$0.03280
2021	\$0.03345	\$0.03295
2022	\$0.03361	\$0.03349
2023	\$0.03429	\$0.03404
2024	\$0.03497	\$0.03460
2025	\$0.03569	\$0.03519
2026	\$0.03642	\$0.03580

NEUTRALITY CHARGE

The R*C Price includes a neutrality charge to mitigate the impact of the R*C Pilot program on non-participating customers. The standard neutrality charge is as follows:

Year number	\$/kWh
2 (2018) <u>3 (2019)</u>	\$0.00477 <u>\$0.00483</u>
3 (2019) <u>4 (2020)</u>	\$0.00483 <u>\$0.00488</u>

DL
LN

Customers receiving service under the Company's Business Incentive and Sustainability Rider, Competitive Response Rider, Residential Electric Vehicle Service (Rate Code A08), or Residential Electric Vehicle Pilot Service (Rate Code A80, A81) shall not be subject to the neutrality charge portion of the R*C Price.

TRACKER ACCOUNT

Due to the variability of renewable resources, the Renewable*Connect program tracker account may have an excess or shortage of supply in any given hour or month. The Company will balance Renewable*Connect program usage at the end of the program year in accordance with the expected resource blend. As a result, the program may require more or less of a share of the expected program allocation. Energy produced by the R*C Resources that is not associated with any R*C Service subscription and therefore not allocated to an R*C Customer will be sold to all customers at the delivered cost through the Fuel Clause Adjustment. The Company will maintain accounting of the monthly balance of total R*C Resources production, total program usage, total revenues collected under the program and the expenses associated with offering the R*C Service, including the renewable energy purchases, marketing and other costs for this program. The Company may petition the Commission annually to true up the marketing and administrative cost tracker balance and apply the resulting true-up factors to the Month-To-Month R*C Price.

(Continued on Sheet No. 5-151)

Date Filed:	04-02-18 <u>04-01-19</u>	By: Christopher B. Clark	Effective Date:	08-13-18
		President, Northern States Power Company, a Minnesota corporation		
Docket No.	E002/M- 18-252 <u>15-985</u>		Order Date:	08-13-18

Clean

**VOLUNTARY RENEWABLE*CONNECT PILOT PROGRAM
RIDER (Continued)**

Section No. 5
4th Revised Sheet No. 150

RATE

The R*C Price for the pilot phase R*C Resources of each R*C Service Type shall be as follows based on year of production, unless otherwise provided for in this tariff:

Month-To-Month R*C or Single Event R*C Service Type	
Year number	\$/kWh
3 (2019)	\$0.03599
4 (2020)	\$0.03623

DL
LN

5-Year and 10-Year R*C Service Type

Year	5-Year Contract (\$/kWh)	10-Year Contract (\$/kWh)
2017	\$0.03243	\$0.03193
2018	\$0.03280	\$0.03230
2019	\$0.03317	\$0.03267
2020	\$0.03330	\$0.03280
2021	\$0.03345	\$0.03295
2022	\$0.03361	\$0.03349
2023	\$0.03429	\$0.03404
2024	\$0.03497	\$0.03460
2025	\$0.03569	\$0.03519
2026	\$0.03642	\$0.03580

NEUTRALITY CHARGE

The R*C Price includes a neutrality charge to mitigate the impact of the R*C Pilot program on non-participating customers. The standard neutrality charge is as follows:

Year number	\$/kWh
3 (2019)	\$0.00483
4 (2020)	\$0.00488

DL
LN

Customers receiving service under the Company's Business Incentive and Sustainability Rider, Competitive Response Rider, Residential Electric Vehicle Service (Rate Code A08), or Residential Electric Vehicle Pilot Service (Rate Code A80, A81) shall not be subject to the neutrality charge portion of the R*C Price.

TRACKER ACCOUNT

Due to the variability of renewable resources, the Renewable*Connect program tracker account may have an excess or shortage of supply in any given hour or month. The Company will balance Renewable*Connect program usage at the end of the program year in accordance with the expected resource blend. As a result, the program may require more or less of a share of the expected program allocation. Energy produced by the R*C Resources that is not associated with any R*C Service subscription and therefore not allocated to an R*C Customer will be sold to all customers at the delivered cost through the Fuel Clause Adjustment. The Company will maintain accounting of the monthly balance of total R*C Resources production, total program usage, total revenues collected under the program and the expenses associated with offering the R*C Service, including the renewable energy purchases, marketing and other costs for this program. The Company may petition the Commission annually to true up the marketing and administrative cost tracker balance and apply the resulting true-up factors to the Month-To-Month R*C Price.

(Continued on Sheet No. 5-151)

Date Filed: 04-01-19

By: Christopher B. Clark

Effective Date:

President, Northern States Power Company, a Minnesota corporation

Docket No. E002/M-15-985

Order Date:

Renewable*Connect Standard Monthly Balancing Example - Long Term

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Expected Production (MWh)	[PROTECTED DATA BEGINS:]												
Wind													
Solar													
Total													
	[PROTECTED DATA ENDS]												
Actual MN Sales Billing	9%	8%	8%	8%	8%	9%	9%	10%	8%	8%	7%	8%	
	[PROTECTED DATA BEGINS:]												
Usage													
Production Over/(Under)													
	[PROTECTED DATA ENDS]												
Monthly Production Shortfall	2,039	1,566	-	-	-	1,139	3,556	7,297	2,509	-	-	1,409	19,515
Excess Energy to Fuel Clause	-	-	1,544	4,849	7,077	-	-	-	-	2,002	4,042	-	19,515
	[PROTECTED DATA BEGINS:]												
Program Usage													
New Wind													
New Solar													
Balancing													
Total													
	[PROTECTED DATA ENDS]												

z

Monthly Balancing Cost Detail - Standard Option - Long Term

PUBLIC DOCUMENT - NOT PUBLIC DATA HAS BEEN EXCISED

In thousands of kWh, except where labeled otherwise

Annual PPA Cost Differential of Balancing Energy - R*C Wind Resource vs. System Resource

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
	[PROTECTED DATA BEGINS:																			
Balancing Energy Required																				
Balancing Energy Cost per MWh																				
Cost of Balancing Energy																				
Excess R*C Wind Energy																				
Excess R*C Wind Energy Cost per MWh																				
Cost of R*C Wind Energy																				
	PROTECTED DATA ENDS]																			
Annual PPA Balancing Energy Cost Differential	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Seasonal Differential Value of Balancing Energy

	Value of Monthly Balancing Energy @ LMP			Value of Excess Energy @ LMP			Net Value of Monthly Balancing Wind Energy @ LMP		
	Summer	Winter	Total	Summer	Winter	Total	Summer	Winter	Total
On-Peak Energy	5,729	1,981	7,710	On-Peak Energy	0	7,710			
Off-Peak Energy	8,772	3,033	11,805	Off-Peak Energy	0	11,805			
Monthly Balancing Energy Required (000s)	14,500	5,014	19,515	Excess Energy Delivered	0	19,515			
LMP (\$/MWh)				LMP					
On-Peak Energy	\$32.95	\$25.89		On-Peak Energy	\$32.95	\$25.89			
Off-Peak Energy	\$20.19	\$19.65		Off-Peak Energy	\$20.19	\$19.65			
Energy Value				Energy Value					
On-Peak Energy	\$188,779	\$51,290	\$240,069	On-Peak Energy	\$0	\$199,606	\$188,779	(\$148,316)	\$40,463
Off-Peak Energy	\$177,076	\$59,596	\$236,672	Off-Peak Energy	\$0	\$231,931	\$177,076	(\$172,336)	\$4,741
Total	\$365,856	\$110,886	\$476,741	Total	\$0	\$431,538	\$365,856	(\$320,652)	\$45,204

Summary

Annual PPA Balancing Energy Cost Differential	\$49,843	\$50,840	\$51,857	\$52,895	\$53,953	\$55,032	\$56,131	\$57,255	\$58,398	\$59,567	\$60,760	\$61,974	\$63,213	\$64,477	\$65,767	\$67,083	\$68,423	\$69,791	\$71,188	\$72,012
Seasonal Differential Value of Balancing Energy	\$45,204	\$46,221	\$47,261	\$48,324	\$49,412	\$50,523	\$51,660	\$52,822	\$54,011	\$55,226	\$56,469	\$57,739	\$59,038	\$60,367	\$61,725	\$63,114	\$64,534	\$65,986	\$67,471	\$68,989
Annual Balancing Cost	\$95,047	\$97,061	\$99,118	\$101,219	\$103,364	\$105,555	\$107,791	\$110,077	\$112,409	\$114,794	\$117,228	\$119,713	\$122,251	\$124,844	\$127,492	\$130,196	\$132,957	\$135,777	\$138,659	\$141,001
Program Energy	234,835	234,637	234,286	233,936	233,585	233,235	232,885	232,556	232,206	231,877	231,549	231,198	230,870	230,541	230,213	229,906	229,578	229,249	228,943	228,614
Balancing Cost per MWh (in Dollars)	0.405	0.414	0.423	0.433	0.443	0.453	0.463	0.473	0.484	0.495	0.506	0.518	0.530	0.542	0.554	0.566	0.579	0.592	0.606	0.617
Balancing Cost per kWh (in Cents)	0.040	0.041	0.042	0.043	0.044	0.045	0.046	0.047	0.048	0.050	0.051	0.052	0.053	0.054	0.055	0.057	0.058	0.059	0.061	0.062

CERTIFICATE OF SERVICE

I, Lynnette Sweet, 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 Nos. E002/M-15-985

Dated this 1st day of April 2019

/s/

Lynnette Sweet
Regulatory Administrator

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