

MONTANA-DAKOTA UTILITIES CO.

Before the North Dakota Public Service Commission

Case No. PU-22-\_\_\_\_

Direct Testimony  
of  
Stephanie Bosch

1 **Q. Please state your name and business address.**

2 A. My name is Stephanie Bosch, and my business address is 400  
3 North Fourth Street, Bismarck, North Dakota 58501.

4 **Q. What is your position with Montana-Dakota Utilities Co.?**

5 A. I am the Regulatory Affairs Manager for Montana-Dakota Utilities  
6 Co. (Montana-Dakota).

7 **Q. Would you please describe your duties as Regulatory Affairs  
8 Manager?**

9 A. I am responsible for the proper application of the Company's gas  
10 and electric rates in the Customer Care and Billing System (CC&B), the  
11 application of tariffs, and the preparation of miscellaneous rate filings.

12 **Q. Would you please describe your education and professional  
13 background?**

14 A. I graduated from the University of North Dakota in 1995 with a  
15 Bachelor of Business and Public Administration degree in Banking and  
16 Financial Economics. I joined Montana-Dakota in June 1997 as a Rate  
17 Clerk in the Regulatory Affairs Department and realized positions of

1 increasing responsibility within the Regulatory Affairs Department until  
2 2011 when I left the Company. In 2013 I returned to the Company as a  
3 Regulatory Analyst before attaining my current position in August of 2015.

4 **Q. What is the purpose of your testimony in this proceeding?**

5 A. The purpose of my testimony is to present the projected billing  
6 determinants allocated to the Company's various rate schedules and  
7 priced at current rates, as included in Statement F, Schedule F-1 of this  
8 Application, the proposed rate schedules provided in Appendix B to the  
9 Application, and other proposed changes in the Company's tariff. I will  
10 also discuss the load research study completed for use in the embedded  
11 class cost of service study.

12 Additionally, I present the apportionment of the interim increase to  
13 the various rate classes and the proposed interim rate schedules provided  
14 in Appendix A to this Application for Interim Increase in Electric Rates.

15 **Q. Have you testified in other proceedings before regulatory bodies?**

16 A. Yes. I have previously presented testimony before this Commission  
17 and the Public Service Commissions of Montana and Wyoming and the  
18 Public Utilities Commission of Minnesota.

19 **Q. What statements and exhibits are you sponsoring in this  
20 proceeding?**

21 A. I am sponsoring Statement F, Schedule F-1 and the proposed rate  
22 schedules provided in Appendix B to the Application.

1 I am also sponsoring the proposed interim rate schedules provided  
2 in Appendix A to the Interim Application.

3  
4 **Projected Billing Determinants and Revenue Analysis**

5 **Q. Please describe the derivation of the Company's projected billing**  
6 **determinants used in this rate case.**

7 A. I will first discuss the derivation of the projected 2022 and 2023  
8 customers included in this rate case. To start, Montana-Dakota  
9 determined the average number of customers for 2021 by rate schedule.  
10 The Company then applied the average growth rate to the 2021  
11 customers, for select rate schedules, as included in the Company's  
12 financial forecast. For all other rate schedules, the Company is projecting  
13 no growth in customers and therefore set the projected 2022 and 2023  
14 customers to the same level as that seen in 2021.

15 For the projected 2022 and 2023 energy use, Montana-Dakota's  
16 starting point was the overall projected North Dakota energy use as  
17 included in the Company's financial forecast and electric load forecast as  
18 outlined in the direct testimony of Mr. Darcy Neigum. As the customer  
19 classes included in the Company's electric load forecast do not align one  
20 for one with the Company's rate schedules, allocation factors were  
21 necessary to apportion the total projected North Dakota energy use to  
22 each of the respective rate schedules. However, prior to any allocation,  
23 Montana-Dakota first adjusted its 2021 per books energy use for any

1 known customer changes expected to occur in 2022 or 2023. Two such  
2 changes were initially identified. The first known change was a customer  
3 request received in early 2022 to move a number of their accounts taking  
4 service in 2021 under Optional Time-of-Day General Electric Service Rate  
5 31 Secondary to General Electric Service Rate 30 Secondary. The  
6 second known change was to move the billing determinants for a  
7 customer taking service under Interruptible Large Power Demand  
8 Response Rate 38 in 2021 that is now taking service under General  
9 Electric Service Rate 30 Primary.

10 Montana-Dakota then set the energy use the same as the 2021  
11 energy use for any rate schedule where no customer growth was  
12 projected. For any rate schedule that reflected customer growth,  
13 Montana-Dakota allocated the remaining net projected energy use for  
14 2022 and 2023 based on the applicable rate schedules' 2021 share of  
15 North Dakota's forecasted energy use.

16 Lastly, the Company was recently advised of a customer's intent to  
17 install distributed generation technology at a facility located in North  
18 Dakota. As the anticipated load reduction was only recently received and  
19 therefore not reflected in the Company's electric load forecast used in this  
20 rate case, Montana-Dakota subtracted the expected energy savings  
21 resulting from this customer installation from the total North Dakota  
22 projected energy use included in that customer's rate class and the

1 electric load forecast to derive the total North Dakota energy use projected  
2 for the years 2022 and 2023.

3 The Company next projected customer demand by rate schedule, if  
4 applicable, by maintaining the load factor by month in 2021 for each rate  
5 schedule when factoring in that rate schedule's projected energy use.

6 **Q. Please explain the calculation of the projected revenue at current**  
7 **rates included in Statements F, Schedule F-1.**

8 A. The Company applied the Basic Service Charges, Energy Charges,  
9 and Demand Charges applicable under each rate schedule, and as  
10 authorized in Case No. PU-16-666 and later updated to reflect the impact  
11 of the Tax Cuts and Jobs Act of 2017 in Case No. PU-18-89, to the  
12 projected number of customers, energy use, and demand to derive the  
13 revenues shown on Statement F, Schedule F-1, pages 1 and 2. In  
14 addition, the Company priced the projected energy use or demand,  
15 dependent on the rate schedule, at the current Generation Resource  
16 Recovery Rider (Generation Rider) rates effective February 1, 2022,  
17 excluding the surcharge. As explained further in the direct testimony of  
18 Ms. Tara Vesey, Montana-Dakota is moving costs currently being  
19 recovered through the Generation Rider into base rates and vice versa.  
20 Therefore, in order to correctly reflect the recovery of all costs to be  
21 recovered through the Company's base rates, Montana-Dakota is  
22 including the current Generation Rider in its revenues. The surcharge was  
23 excluded from the Generation Rider rates as it reflects a prior period

1 over/under recovery of costs and therefore should be excluded from the  
2 Company's revenues. The Fuel and Purchased Power rates used in  
3 revenues reflects the projected Fuel and Purchased Power rates  
4 developed by Ms. Tara Vesey. The Company is proposing no changes to  
5 the costs being recovered through either the Transmission Cost  
6 Adjustment or the Renewable Resource Cost Adjustment and therefore  
7 excluded those riders from the projected revenue at current rates.

8

9 **Proposed Tariff Changes**

10 **Q. The Company is proposing a number of changes to Municipal**  
11 **Lighting Service Rate 41. Could you please briefly outline those**  
12 **changes?**

13 A. Montana-Dakota is proposing a number of changes to Municipal  
14 Lighting Rate 41. First, the Company is proposing to expand the  
15 availability of the rate schedule to include the lighting of all public streets,  
16 alleys, and other road right of ways, and to no longer limit the availability  
17 solely to those lighting facilities owned by a municipality. This expansion  
18 of availability necessitates a change to the title of the rate schedule to  
19 Public Lighting Service Rate 41.

20 The Company is also proposing to remove the discount available  
21 under today's rate schedule. In 2018 and 2019, the Company undertook  
22 an LED street lighting replacement project in North Dakota whereby the  
23 Company replaced older Company-owned street lighting fixtures with LED

1 street lighting fixtures. This resulted in energy and maintenance savings  
2 and higher lumen output. This project was also prompted in part by the  
3 trend toward less availability of older lighting fixtures. At the time of this  
4 replacement project, Rate 41 customers were advised that the Company  
5 would be eliminating the ten percent discount provision when the  
6 Company filed its next rate case.

7 Montana-Dakota is also proposing to include on the rate schedule  
8 the monthly Facilities Charges applicable to lighting facilities owned,  
9 installed, and maintained by the Company. While these “rental type”  
10 charges are not new to the Company or the customer being billed the  
11 charges today, the Company has not previously included these charges  
12 on the Rate 41 schedule. The street lighting project afforded the  
13 Company the opportunity to standardize across the Company’s North  
14 Dakota service territory the lighting facilities the Company will now install  
15 and/or maintain for the customer and the associated monthly rate  
16 applicable for such facilities. The inclusion of the Facilities Charges on the  
17 rate schedule also offers both the Company and customers a reference  
18 point as to the type of facilities and “rental charge” associated with such  
19 facilities. These charges are not applicable to lighting facilities owned by  
20 the customer and/or municipality.

21 And lastly, the Company is proposing to clarify the determination of  
22 the monthly energy usage when the lighting service is un-metered.  
23 Consistent with all other customers, un-metered Rate 41 customers are

1 billed monthly; however, the determination of that monthly energy usage is  
2 computed using a daily consumption level times the number of days in a  
3 customer's billing period.

4 **Q. Would you briefly describe any additional changes the Company is**  
5 **proposing to the Company's electric tariff?**

6 A. The Company is proposing the following changes to its electric tariff  
7 as clearly identified in the legislative copy of the tariff provided in Appendix  
8 B of the Application:

- 9 • The Company is proposing an entirely new volume of its electric rate  
10 book, designated herein as NDPSC Volume 5, to supersede the  
11 current volume 4, in order to reflect the removal of "A Division of  
12 MDU Resources Group, Inc." in the tariff header of all rate schedules.
- 13 • The rates described by Mr. Ron Amen have been incorporated into  
14 the proposed rate schedules.
- 15 • Consistent with all other electric rates schedules, the Company is  
16 proposing the Basic Service Charge under Interruptible Large Power  
17 Demand Response Rate 38 be stated on the tariff rather than  
18 specified in each electric service agreement with the Company.  
19 Other changes proposed to Rate 38 include adding clarifying  
20 language to the rate's General Terms and Conditions provision  
21 regarding: the cost responsibility of equipment and upgrades that  
22 may be necessary for monitoring interruptions as will now be defined  
23 in paragraph 4, the definition of the annual period under paragraph 5

1 to be the same as the MISO planning year, any testing requirements  
2 required by MISO to ensure interruption capability of participating  
3 resources as now defined in paragraph 7 and the ability to respond to  
4 future MISO requirements as those requirements related to  
5 interruptions under Rate 38 as will now be provided for under  
6 proposed paragraph 8.

- 7 • Proposing changes to Outdoor Lighting Service Rate 52 to reflect  
8 current practices.
- 9 • Introduce a monthly Manual Meter Reading Charge assessed  
10 customers who request to have their electric meter read manually  
11 each month in lieu of the Company installing an AMR-equipped meter  
12 to obtain meter reads.
- 13 • Proposing clarifying language be added to select sub-sections of  
14 Section 600 – Metering under Electric Service Rules and Regulations  
15 Rate 110 regarding the installation of customer equipment ahead of  
16 the Company’s meter.
- 17 • There are other minor wording changes listed throughout the  
18 Company’s rate book to improve the readability of the rate without  
19 modifying any conditions, update the rate and/or page references or  
20 are self-explanatory. These changes are clearly denoted on the tariff  
21 sheets in the legislative format.

22

1 **Q. Is the Company proposing any changes to the Company's Extension**  
2 **Policy Rate 112?**

3 A. Yes. The Company is proposing to update the cost to revenue ratio  
4 identified in Rate 112 to reflect the costs and projected return included in  
5 this rate case. The cost to revenue ratio is used to determine if cost  
6 participation is warranted for an extension to proceed. Currently if the  
7 estimated project construction cost is greater than two times the estimated  
8 annual revenue, the extension will be made only with a contribution.  
9 Reflecting today's costs and projected return, Montana-Dakota is  
10 proposing a cost to revenue ratio of 3.8 to 1.

11 The other change the Company is proposing to Rate 112 is to  
12 exclude the cost of fuel and purchased power from the revenue used to  
13 determine cost participation. As fuel and purchased power is a pass-  
14 through cost, the use of margin to determine cost participation is a better  
15 representation of the dollars available to recover the project's investment.

16

17 **Load Research Study**

18 **Q. Did the Company conduct a load research study in preparation for**  
19 **this rate case?**

20 A. Yes. In 2020, Montana-Dakota conducted a load research study of  
21 its North Dakota electric customers reflecting 2019 data. The study was  
22 conducted in compliance with the Settlement Agreement approved in the  
23 Company's 2016 electric rate case (Case No. PU-16-666) where

1 Montana-Dakota agreed to utilize a stratified random sampling technique  
2 for selecting samples and the use of a ratio estimation technique to  
3 expand the same data into class demand estimates for future class cost of  
4 service study purposes.

5 **Q. Please briefly describe the method by which the load research**  
6 **sample was selected for the Company's various rate schedules?**

7 A. Montana-Dakota first reviewed its various rate schedules in order to  
8 determine which rates would require a random sampling and which rates  
9 would not. A random sampling of customers is typically required when a  
10 large number of customers take service under a particular rate schedule  
11 and therefore the data becomes too voluminous if all customer data were  
12 to be used. Montana-Dakota concluded that random samples would be  
13 necessary for the following rate schedules: (1) Residential Electric  
14 Service Rate 10, (2) Small General Electric Service Rate 20, and (3)  
15 General Electric Service Rate 30 Secondary. For all remaining rate  
16 schedules, the Company requested all hourly load data available be  
17 provided.

18 For the three rate schedules where a random sampling would be  
19 required, the Company reviewed each rate schedule's 2019 billing  
20 information to identify those accounts with twelve months of billing data.  
21 That data subset was then further separated into quartiles, using the  
22 Microsoft Excel quartile function whereby the quartiles provided four  
23 consumption levels in which to equally separate that rate schedule's

1 customers into stratum. From there, the Company used an online  
2 random sample calculator to determine the number of accounts to sample  
3 from each stratum in order to achieve a design accuracy of +/- 4% at a  
4 90% confidence level.

5 For stratum, the Company extracted the hourly load data from its  
6 fixed network for the number of accounts necessary to achieve the 90%  
7 confidence level. Accounts were again randomly selected within each  
8 stratum.

9 **Q. As hourly load data was not available for all customers within any**  
10 **particular rate schedule, were adjustments to the load research**  
11 **results necessary in order to represent the entire rate schedule?**

12 A. Yes, adjustments were necessary to each rate schedule's load  
13 research results in order to bring them in alignment with the actual billed  
14 energy for 2019 while maintaining the relationships resulting from the  
15 study's data.

16 **Q. Were there any rate schedules the Company did not have load data**  
17 **available to perform a load research study?**

18 A. Yes, hourly load data was not available for the following rate  
19 schedules: Residential Electric Thermal Energy Storage Service Rate 13  
20 (4 customers), Optional Time-of-Day Residential Electric Service Rate 16  
21 (4 customers), Optional Time-of-Day General Electric Service Rate 31 (68  
22 customers), and General Electric Space Heating Service Rate 32 (587  
23 customers). As a proxy, the Company estimated the rate schedules' peak

1 data based on the otherwise applicable rate schedules' peak data, scaled  
2 to the rate schedule without hourly load data available.

3

4 **Interim Increase**

5 **Q. How was the proposed interim revenue requirement apportioned**  
6 **among the customer classes?**

7 A. The interim revenue increase of \$11,422,209 is proposed to be  
8 billed as a separate line item on the bill based on 9.317 percent of the  
9 amounts billed under the Basic Service Charge, Energy Charge and  
10 Demand Charges applicable under the Company's rate schedules.

11 The calculations supporting the application of the interim increase  
12 to each rate class are provided in Statement K attached to the Application  
13 for Interim Increase in Electric Rates. The proposed tariff sheets reflect  
14 the proposed interim increase of 9.317 percent to be applied to the  
15 amount billed under the Basic Service Charge, Energy Charge and  
16 Demand Charges. The interim rate will not be applicable to the amount  
17 billed under the Fuel and Purchased Power or any of the Company's  
18 riders (Renewable Resource Cost Adjustment, Generation Resource  
19 Recovery Rider, Environmental Cost Recovery Rider and Transmission  
20 Cost Adjustment). The interim increase represents an average increase of  
21 5.9 percent over total projected 2023 revenues at current rates. Page 2 of  
22 Exhibit No. \_\_\_\_ (SB-1) shows a typical residential bill for a Montana-  
23 Dakota customer reflecting the proposed interim increase, showing an

1 average monthly increase of \$5.33 from current rates, including Fuel and

2 Purchased Power and all riders.

3 **Q. Does this conclude your testimony?**

4 A. Yes.

**Montana-Dakota Utilities Co.  
 Electric Utility - North Dakota  
 Residential Electric Service Rate 10  
 Bill Comparison Worksheet - Interim Rates**

	Kwh	Current Rates					Total Current Bill	Interim Increase	% Increase
		Basic Service Charge	Energy	Riders	F&PP Charge				
January	1,000	\$14.26	\$49.28	\$18.85	\$22.41	\$104.80	\$5.92	5.6%	
February	1,000	12.88	49.28	18.85	22.41	103.42	5.79	5.6%	
March	1,000	14.26	49.28	18.85	22.41	104.80	5.92	5.6%	
April	700	13.80	39.75	13.20	15.69	82.44	4.99	6.1%	
May	600	14.26	34.07	11.31	13.45	73.09	4.50	6.2%	
June	700	13.80	39.75	13.20	15.69	82.44	4.99	6.1%	
July	800	14.26	45.42	15.08	17.93	92.69	5.56	6.0%	
August	1,000	14.26	56.78	18.85	22.41	112.30	6.62	5.9%	
September	700	13.80	39.75	13.20	15.69	82.44	4.99	6.1%	
October	600	14.26	34.07	11.31	13.45	73.09	4.50	6.2%	
November	600	13.80	34.07	11.31	13.45	72.63	4.46	6.1%	
December	900	14.26	46.60	16.97	20.17	98.00	5.67	5.8%	
	<b>9,600</b>	<b>\$167.90</b>	<b>\$518.10</b>	<b>\$180.98</b>	<b>\$215.16</b>	<b>\$1,082.14</b>	<b>\$63.91</b>	<b>5.9%</b>	

Average 800 \$5.33

	Current
Basic Service Charge/ Day	\$0.46
Energy	\$0.05678
1st 750 winter & summer	0.02678
Over 750 winter	
TCA	0.00801
ECRR	0.00000
GRRR	0.00185
Renewable Rider	0.00899
Fuel - Proposed 2023 F&PP	0.02241
Interim Increase	9.317%