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March 6, 2024

Executive Secretary  
North Dakota Public Service Commission  
State Capitol Building  
600 East Boulevard  
Bismarck, ND 58505-0480

**Re: Fuel and Purchased Power Adjustment Alternative Energy Allocation  
Case No. PU-22-194 Compliance Filing  
E8760 Allocation Method**

Montana-Dakota Utilities Co. (Montana-Dakota), in compliance with the North Dakota Public Service Commission's (Commission) June 6, 2023 Order (June 6 Order) in Case No. PU-22-194, herewith electronically submits an application regarding its Fuel and Purchased Power (F&PP) Adjustment that provides an alternative energy cost allocation using the E8760 allocation method. The June 6 Order which approved an all-party settlement, included the following requirement:

*5. Energy Allocation Amongst Classes. Within nine months of the Commission approving the settlement agreement in this case, Montana-Dakota will file with the Commission an application regarding its fuel and purchased power cost rider that provides an alternative allocation option of allocating these costs to the various classes using the E8760 allocation method.*

Montana-Dakota's current Fuel & Purchased Power Adjustment Rate 58 schedule has two F&PP rates, a primary rate and a secondary rate. Kavita Maini, KM Energy Consulting, LLC, testifying on behalf of Marathon Petroleum Company LP, argued "MDU's flat energy allocator is likely over allocating energy costs to high load factor classes such as the General Primary Class. I therefore recommend that the Commission require the Company to develop and introduce an E8760 allocator to allocate fuel costs recovered through the fuel and purchased power rider. This allocator should be effective with final rates in this case." In rebuttal testimony, Ronald J. Amen, Atrium Economics, LLC, testifying on behalf of Montana-Dakota, acknowledged that "Montana-Dakota's flat kWh allocator for fuel and purchased power energy costs fails to recognize hourly energy cost and load variations" and "Montana-Dakota has indicated to me that the Company would be willing to investigate the development of the E8760 allocation method, prepare an evaluation of its application, and proposal for its

next electric North Dakota general rate case, for allocation of the Company's fuel and purchased power energy costs".

Montana-Dakota has now conducted an E8760 study with the results included herein. The Company initially reviewed its various electric rate schedules in North Dakota to determine if the current primary and secondary classes could be maintained within its F&PP rates, or if an expansion of classes was necessary under an E8760 methodology. Under such a methodology, it was determined an expansion of classes would be necessary in order to appropriately recognize the intended purpose of an E8760 component within the Company's F&PP rates, which is to acknowledge and reflect differences in load patterns, and associated costs, across a utility's various rate schedules.

The core consideration behind the selected E8760 classes included in the Company's filing, was to group customers with similar load patterns into an E8760 class. This is similar to the methodology undertaken when assigning costs within a utility's class cost of service study in a rate case. A secondary consideration was the availability of load research data. Montana-Dakota utilized the load research data from the Company's last rate case. As the use of proxy data was necessary in that case as hourly load data was not available for all rate schedules in 2019, the E8760 classes herein also reflects the use of proxy data. The Company also chose to maintain its current primary and secondary structure within the E8760 structure in proper recognition of loss factors at the different service levels. The third and final consideration was the administration of maintaining multiple fuel and purchased power rates on a go forward basis. The Company chose the following E8760 classes: Residential, Small General, Large General Primary, Large General Secondary, Lighting Primary, and Lighting Secondary.

Once the E8760 classes were assigned, Montana-Dakota developed the class ratios. Class-based load shapes were developed for each of the 8,760 hours based on the previously mentioned 2019 load data. The Company then applied those load shapes to the 2023 projected kWh sales from the rate case which it further adjusted for line losses to derive each class's generation requirements across all 8,760 hours of the year. Montana-Dakota then multiplied the forecasted hourly requirements by the 2019 Day Ahead Locational Marginal Prices, which results in the hourly costs by class. The result is a total energy cost over the 8,760 hours for each class. The energy costs for each class were then compared to the total energy costs resulting in the E8760 class ratios as shown in the table below. Classes with ratios less than one are those classes where customers have higher load factors and/or increased energy use in the off-peak hours when prices are lower. Conversely, classes with ratios greater than one have customers with low load factors and are using greater amounts of energy during higher cost times.

Rate Class	Hourly Marginal Energy Costs x Hourly Loads	kWh Energy at Generator	Load-Weighted Marginal Energy Costs/kWh	Class Ratio
Residential	\$18,373,639	824,717,852	\$0.02228	1.0215
Small General	2,284,291	102,645,666	0.02225	1.0202
Large General Primary	9,287,078	437,894,544	0.02121	0.9725
Large General Secondary	19,105,489	881,724,263	0.02167	0.9936
Lighting Primary	25,756	1,293,517	0.01991	0.9129
Lighting Secondary	344,255	17,384,290	0.01980	0.9078
Total	\$49,420,509	2,265,660,132	\$0.02181	1.0000

Montana-Dakota has applied the E8760 class ratios to the associated energy costs for FERC Accounts 501 Coal and 547 Gas, Account 502 Reagent, Account 555 Energy and Account 575 Market Administration - in North Dakota's F&PP Adjustment as shown in Exhibit B, page 1. The methodology for Demand and Pipeline charges and Revenues has not been altered from the current applicable tariff. For purposes of comparison, the Company used the F&PP adjustment that was filed with the Commission for rates placed in service on or after October 1, 2023, for the E8760 methodology application.

The October 1, 2023 filing, that is currently in effect, has been provided for the Commission's convenience, as shown in Exhibit A.

There are six customer service classes in which two of the classes are Primary customers: Large General Primary and Lighting Primary. The remaining four classes are Secondary service: Residential, Small General, Large General Secondary, and Lighting Secondary. The Company included a comparative analysis between the currently effective rates for Primary service customers and Secondary service customers versus the cost per kWh when applying the E8760 class ratios by customer class.

As shown in the table below, the E8760 allocation methodology results in a higher cost per kWh for Residential and Small General rate classes, and a reduction for all other customer rate classes. As noted above, the reduction recognizes the customer's usage during off-peak hours when power prices are typically lower.

Rate Class	E8760 System Cost per kWh	Current System Cost per kWh	Change in System Cost per kWh
Residential (Secondary)	\$0.03182	\$0.03098	\$0.00084
Small General (Secondary)	0.03180	0.03098	0.00082
Large General Primary	0.02935	0.03006	(0.00071)
Large General Secondary	0.03061	0.03098	(0.00037)
Lighting Primary	0.02710	0.03006	(0.00296)
Lighting Secondary	0.02716	0.03098	(0.00382)

A residential customer using approximately 800 kWh per month, would result in an annual increase of \$8.04 under the E8760 methodology.

As noted in Mr. Amen's testimony, the Company's preference would be to investigate the development of the E8760 allocation method, prepare an evaluation of its application, and proposal in its next electric North Dakota general rate case. Deferring any potential changes to the Company's F&PP rates until the Company's next general electric rate case would allow the Company additional time to structure and evaluate the Company's load research study with E8760 classifications in mind and review the implications for the Company's jurisdictional allocations as they relate to the Company's fuel and purchased power costs. Montana-Dakota has historically performed load research studies only in the context of a rate case. For the purposes of a properly supported E8760 allocation method, annual load research studies should be performed to ensure all classes are properly represented and anomalies from any one annual period are properly mitigated.

The Company also notes that if the Commission approves this alternative energy allocation E8760 method, the class ratios presented in this filing will need to be updated with each subsequent general electric rate case. The Company would also need a minimum of three months to update the administration and billing of the North Dakota F&PP costs and rates to reflect the change to an E8760 methodology. This would also allow adequate time for the filing and approval of tariff changes to Rate 58 to reflect the change in methodology.

If you have any questions regarding this filing, please contact me at (701) 222-7855 or [Travis.Jacobson@mdu.com](mailto:Travis.Jacobson@mdu.com).

Sincerely,

*/s/ Travis R. Jacobson*

Travis R. Jacobson  
Director of Regulatory Affairs

Attachments

**EXHIBIT A**  
**CURRENT FILING**

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM - NORTH DAKOTA  
FUEL AND PURCHASED POWER ADJUSTMENT  
OCTOBER 2023 ADJUSTMENT**

	<u>Primary</u>	<u>Secondary</u>
Current Cost of Fuel (Page 2)	\$0.03006	\$0.03098
Prior Cost of Fuel	0.02374	0.02451
Change in Cost of Fuel	<u>\$0.00632</u>	<u>\$0.00647</u>
 <u>Surcharge Adjustment</u>		
Current Adjustment	(\$0.00219)	(\$0.00212)
Prior Adjustment	<u>(0.00219)</u>	<u>(0.00212)</u>
Change in Surcharge Adjustment	\$0.00000	\$0.00000
 Cost of Fuel	 \$0.03006	 \$0.03098
Surcharge Adjustment	<u>(0.00219)</u>	<u>(0.00212)</u>
Total	<u><u>\$0.02787</u></u>	<u><u>\$0.02886</u></u>

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM - NORTH DAKOTA  
FUEL AND PURCHASED POWER ADJUSTMENT  
FUEL AND PURCHASED POWER COST TRACKING**

	Total 1/	Allocation to 2/ North Dakota	Allocation to 3/	
			Primary	Secondary
Fuel & Purchased Power Cost				
Accounts 501 Coal and 547 Gas	\$10,383,078	\$7,382,980	\$1,610,704	\$5,772,276
Account 502 Reagent	451,228	320,850	69,998	250,852
Account 555 Energy	17,941,308	12,757,326	2,783,195	9,974,131
Accounts 555 Demand and 547 Pipeline Charges	1,638,589	1,151,806	178,869	972,937
Account 575 Market Admin.	156,020	110,939	24,203	86,736
Total F&PP Cost	<u>\$30,570,223</u>	<u>\$21,723,901</u>	<u>\$4,666,969</u>	<u>\$17,056,932</u>
Less:				
Wholesale Sales Revenue	\$466,075	\$331,407	\$72,301	\$259,106
Sale of RECs Revenue 4/	0	0	0	0
Total Revenue	<u>\$466,075</u>	<u>\$331,407</u>	<u>\$72,301</u>	<u>\$259,106</u>
Net System Cost	\$30,104,148	\$21,392,494	\$4,594,668	\$16,797,826
kWh Retail Sales	977,537,641	695,086,797	<u>152,839,868</u>	<u>542,246,929</u>
Cost Per kWh	\$0.03080	\$0.03078	<u><u>\$0.03006</u></u>	<u><u>\$0.03098</u></u>

1/ Page 3.

2/ Energy is allocated on kWh sales and demand and pipeline are allocated on Allocation Factor No. 15, Integrated System 12 Month Peak Demand.

3/ Energy is allocated on kWh sales at generation and demand and pipeline are allocated on class Allocation Factor No. 2, Coincident Peak Demand from Case No. PU-22-194.

Factor No. 15 ND	70.292541%
Factor No. 2 Primary	15.529398%
Factor No. 2 Secondary	84.470602%

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM - NORTH DAKOTA  
FUEL AND PURCHASED POWER ADJUSTMENT  
FUEL AND PURCHASED POWER COST TRACKING**

	2023				Total
	May	June	July	August	
Fuel & Purchased Power Cost					
Accounts 501 Coal and 547 Gas	\$2,349,441	\$2,433,213	\$2,802,472	\$2,797,952	\$10,383,078
Account 502 Reagent	99,079	93,523	128,405	130,221	451,228
Account 555 Energy 1/ Accounts 555 Demand and 547 Pipeline Charges	3,291,683	399,157	3,470,326	10,780,142	17,941,308
Account 575 Market Admin.	254,574	439,079	484,101	460,835	1,638,589
Total F&PP Cost	38,457	42,027	37,399	38,137	156,020
	<u>\$6,033,234</u>	<u>\$3,406,999</u>	<u>\$6,922,703</u>	<u>\$14,207,287</u>	<u>\$30,570,223</u>
Less:					
Wholesale Sales Revenue	\$154,055	\$39,167	\$89,001	\$183,852	\$466,075
Sale of RECs Revenue	0	0	0	0	0
Total Revenue	<u>\$154,055</u>	<u>\$39,167</u>	<u>\$89,001</u>	<u>\$183,852</u>	<u>\$466,075</u>
Net System Cost	\$5,879,179	\$3,367,832	\$6,833,702	\$14,023,435	\$30,104,148
kWh Retail Sales	222,845,518	247,847,606	231,046,063	275,798,454	<u>977,537,641</u>
Cost Per kWh	\$0.02638	\$0.01359	\$0.02958	\$0.05085	<u><u>\$0.03080</u></u>

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM  
FUEL AND PURCHASED POWER ADJUSTMENT  
ACCOUNT 555 ENERGY**

Account No.	Account Description	2023			
		May	June	July	August
	<u>Midcontinent Independent System Operator (MISO)</u>				
555.111	Day-Ahead Asset Energy	\$1,231,714	\$1,200,805	\$3,028,361	\$5,204,858
555.114	Real-Time Asset Energy	(284,517)	(26,932)	(163,288)	(85,790)
555.117	Real-Time Excessive Energy	(636)	730	1,060	1,395
555.118	Real-Time Non-Excessive Energy	(101,769)	106,490	(107,044)	(298,212)
555.1212	Day-Ahead Financial Bilateral Congestion Loss	133,940	86,120	195,991	755,564
555.1230	Revenue Rights Transaction	(1,206,035)	(1,204,838)	(1,204,838)	(1,204,838)
555.1232	Revenue Rights Infeasible Uplift	17,599	1,275	1,275	1,275
555.1233	Revenue Rights Stage 2 Distribution	(74,193)	(96,344)	(96,344)	(96,344)
555.1234	Auction Revenue Rights Real-Time MVP Distribution	(10,996)	(12,134)	10	(1,960)
555.132	Day-Ahead Financial Bilateral Transaction Loss	29,377	34,900	40,519	42,288
555.135	Real-Time Asset Loss	408,017	(58,956)	121,195	224,029
555.136	Real-Time Distribution of Loss	(10,155)	(95,373)	(14,116)	(90,504)
555.152	Day-Ahead Rev Suff Guarantee Make Whole Pmt	(2)	(527)	(3,581)	(2,273)
555.153	Real-Time Miscellaneous	2	(13,248)	36,726	(646)
555.154	Real-Time Net Inadvertent Distribution	1,026	(2,999)	8,931	(7,724)
555.155	Real-Time Revenue Neutrality Uplift	5,897	97,761	26,991	128,912
555.156	Real-Time Rev Suff Guarantee First Pass Distribution	7,374	10,887	7,357	8,000
555.157	Real-Time Rev Suff Guarantee Make Whole Payment	(37,045)	(12,276)	(14,966)	(264)
555.159	Day-Ahead Schedule 24	4,647	4,592	4,856	5,280
555.160	Real-Time Schedule 24	997	762	776	754
555.162	Real-Time Price Volatility Make Whole Payment	(20,123)	(12,356)	(16,585)	(31,804)
555.164	Real-Time Schedule 49	14,907	10,932	12,901	12,966
555.1701	Day-Ahead Spinning Reserve Amount	(20,041)	(8,260)	(5,880)	(5,320)
555.1702	Day-Ahead Supplemental Reserve Amount	74	(135)	(13)	(110)
555.1703	Day-Ahead Ramp Capability	(1,476)	(1,519)	(1,438)	(1,122)
555.1704	Day-Ahead Short Term Reserve Amount	(4,175)	(8,952)	(32,130)	(10,665)
555.1710	Real-Time Net Regulation Adjustment	7	0	0	0
555.1711	Real-Time Excessive Deficient Energy Deployment	155	102	1,212	159
555.1713	Real-Time Regulation Amount	(61)	0	0	0
555.1714	Real-Time Spinning Reserve Amount	1,371	(3,860)	(1,248)	(6,154)
555.1715	Real-Time Supplemental Reserve Amount	(48)	14	1	(241)
555.1716	Real-Time Regulation Cost Distribution	11,762	7,728	7,884	8,767
555.1717	Real-Time Spinning Reserve Cost Distribution Amount	9,757	8,221	7,871	8,048
555.1718	Real-Time Supplemental Reserve Cost Distribution	1,566	1,760	1,832	2,046
555.1719	Real-Time Demand Response Allocation Uplift	1	96	459	1,046
555.1720	Real-Time Ramp Capability	(536)	(873)	(531)	(657)
555.1721	Real-Time Short Term Cost Distribution Amount	8,511	16,695	29,482	39,992
555.1723	Real-Time Short Term Reserve Amount	(693)	(3,478)	(2,935)	(17,619)
	<u>Southwest Power Pool (SPP)</u>				
555.185	Real-Time Asset Losses	8,820	70,386	(19,888)	91,015
555.186	Real-Time Over Collected Losses	(143,190)	(77,835)	(171,306)	(133,136)
555.1915	Real-Time Asset Congestion	2,261,170	1,214,038	1,183,615	5,409,315
555.1920	Auction Revenue Rights-Daily	(179,506)	(360,844)	(676,847)	(456,480)
555.1921	Auction Revenue Rights-Annual	0	(1,716,203)	0	0
	<u>Other</u>				
555.X	Purchased Power	1,227,600	1,242,000	1,283,400	1,285,678
555.5	Purchased Power Cogeneration	589	805	599	618
	<b>Total Account 555 Energy</b>	<b>\$3,291,683</b>	<b>\$399,157</b>	<b>\$3,470,326</b>	<b>\$10,780,142</b>

**EXHIBIT B**  
**E8760 ALLOCATION METHOD**

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM - NORTH DAKOTA  
FUEL AND PURCHASED POWER ADJUSTMENT  
FUEL AND PURCHASED POWER COST TRACKING  
E8760 ALLOCATION METHOD  
OCTOBER 2023**

	Total 1/	Allocation to North Dakota 2/	Class Allocation 3/					Lighting Primary	Lighting Secondary
			Residential	Small General	Large General Primary	Large General Secondary			
<b>Fuel &amp; Purchased Power Cost</b>									
Energy									
Accounts 501 Coal and 547 Gas	\$10,383,078	\$7,382,980							
Account 502 Reagent	451,228	320,850							
Account 555 Energy	17,941,308	12,757,326							
Account 575 Market Admin.	156,020	110,939							
Total Energy	<u>\$28,931,634</u>	<u>\$20,572,095</u>	<u>\$7,318,199</u>	<u>\$869,526</u>	<u>\$4,359,472</u>	<u>\$7,895,941</u>	<u>\$8,146</u>	<u>\$120,811</u>	
Demand									
Accounts 555 Demand and 547 Pipeline Charges	\$1,638,589	\$1,151,806	\$476,060	\$57,196	\$189,161	\$426,060	\$226	\$3,103	
Less Revenue:									
Wholesale Sales Revenue	\$466,075	\$331,407							
Net Fuel & Purchased Power Costs	\$30,104,148	\$21,392,494	\$7,678,935	\$913,002	\$4,476,476	\$8,194,081	\$8,228	\$121,772	
kWh Retail Sales	977,537,641	695,086,797	241,346,046	28,712,501	152,536,251	267,705,572	303,617	4,482,810	
System Cost Per kWh	<u>\$0.03080</u>	<u>\$0.03078</u>	<u>\$0.03182</u>	<u>\$0.03180</u>	<u>\$0.02935</u>	<u>\$0.03061</u>	<u>\$0.02710</u>	<u>\$0.02716</u>	

1/ Page 2.

2/ Energy is allocated on kWh sales and demand and pipeline are allocated on Allocation Factor No. 15, Integrated System 12 Month Peak Demand.

3/ Energy is allocated using E8760 factors per kWh sales. Demand and pipeline are allocated on Allocation Factor No. 15, Integrated System 12 Month Peak Demand. Revenues are allocated on kWh sales at generation.

**MONTANA-DAKOTA UTILITIES CO.  
ELECTRIC INTEGRATED SYSTEM - NORTH DAKOTA  
FUEL AND PURCHASED POWER ADJUSTMENT  
E8760 ALLOCATION METHOD  
WORK PAPER**

	<u>North Dakota</u>	<u>Residential</u>	<u>Small General</u>	<u>Large General Primary</u>	<u>Large General Secondary</u>	<u>Lighting Primary</u>	<u>Lighting Secondary</u>
Demand - Class Factor No. 2		41.331647%	4.965748%	16.422962%	36.990580%	0.019622%	0.269441%
Demand - Juris Factor No. 15	70.292541%						
Energy - 4 Month Rolling Average	71.105886%	34.798339%	4.139895%	21.773106%	38.598971%	0.043338%	0.646351%
E8760 Class Ratios		1.0215	1.0202	0.9725	0.9936	0.9129	0.9078
<u>Energy Calculation</u>							
Sales @ Meter (Exclude Rate 45)	695,086,797	241,346,046	28,712,501	152,536,251	267,705,572	303,617	4,482,810
Loss Factor 1/		7.567000%	7.567000%	6.632000%	7.567000%	6.632000%	7.567000%
Adjust to Generation	750,334,012	261,103,768	31,063,041	163,371,017	289,621,209	325,183	4,849,794
% at Generation	100.000000%	34.798339%	4.139895%	21.773106%	38.598971%	0.043338%	0.646351%

1/ Case No. PU-22-194.